

DRAFT
Environmental Assessment
Fort Meade Barracks Complex

U.S. Army Garrison
Fort George G. Meade, Maryland

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DEPARTMENT OF THE ARMY

Fort George G. Meade

Fort Meade, Maryland 20755-5115

FINDING OF NO SIGNIFICANT IMPACT

ENVIRONMENTAL ASSESSMENT

Proposed Barracks Complex Project at Fort George G. Meade

INTRODUCTION

This Environmental Assessment (EA) has been prepared to analyze the potential environmental, cultural, and socioeconomic effects associated with constructing the proposed barracks complex project at Fort George G. Meade, Maryland (hereinafter referred to as FMMD). This EA was prepared pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 United States Code Section 4321 *et seq.*); the Council on Environmental Quality (CEQ) regulations that implement NEPA (Title 40 Code of Federal Regulations [CFR], Parts 1500 to 1508); and 32 CFR 651.

PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to provide adequate, safe and modern housing on FMMD designed to meet Army Unaccompanied Enlisted Personnel Housing (UEPH) standards for approximately 1600-1800 active duty enlisted personnel (ranks E1-E6).

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

The Proposed Action includes design and construction of a total of up to nine (9) new barracks buildings to house 1,600-1,800 unaccompanied enlisted personnel (E1-E6), to be constructed in three (3) phases at three (3) sites in close proximity on FMMD (See Figures 1 and 2).

The three proposed barracks sites are located within the Central portion of FMMD, as defined in the current draft Area Development Plan (ADP), dated January 2020 (Figure 2). Phase I, to be constructed first, is located south of the existing Freedom Center barracks complex and Dutt Road, situated between Zimborski Avenue and Taylor Avenue and north of Hodges Street. The second proposed barracks site (Phase II) is located west of Zimborski Avenue and would span Dutt Road. The third proposed barracks site (Phase III) is located south of Simonds Street, between Taylor Avenue and York Avenue and west of the outdoor running track associated with Gaffney Fitness Center. Also included in the Proposed Action study area is an existing stormwater management (SWM) pond east of Taylor Avenue and south of Gaffney Fitness Center.

Figure 1. Proposed Barracks Complex Artist Rendition



Current stormwater infrastructure serving the Freedom Barracks uses this SWM pond as a downstream discharge point, and construction of Phase I would necessitate redesign of the stormwater management facilities to accommodate the additional discharges of stormwater resulting from converting currently pervious fields into impervious surfaces.

The EA analyzes two courses of action: the Proposed Action and the No Action Alternative. Three other alternatives were considered but eliminated. The Proposed Action, which is the preferred alternative, includes a suite of best management practices that would address the need for the proposed barracks complex and would be designed using UEPH standards for 2/1 market-style dwelling units with two private bedrooms sharing one bathroom, including:

- Living/sleeping rooms;
- Semi-private bathrooms;
- Walk-in closets;
- Storage;
- Laundry facilities;
- Service areas;
- Intrusion detection system (IDS);
- A separate community building with a day room, game room, community kitchen and administrative space, or, a common/day room within each building; and,
- Supporting infrastructure (utilities, electric service, exterior lighting, fire protection and alarm systems, paving, walks, curbs and gutters, sedimentation and erosion control, storm drainage, storm water management, picnic area, bicycle racks, dumpster pads and enclosures, information systems, and parking).

Figure 2. Proposed Action Locations



No-Action Alternative

The CEQ requires the analysis of the No Action Alternative even if the agency is under legislative command to act. Analysis of the No Action Alternative provides a benchmark for enabling decision-makers to compare the magnitude of environmental effects of the other action alternatives. Under the No Action Alternative, Soldiers would continue to be housed in antiquated barracks that do not meet current Army standards for unaccompanied enlisted personnel and FMMD would continue to house Soldiers off-post. Funds would continue to be spent on maintenance and repairs of antiquated barracks that have long surpassed their usable life, as well as funds that would continue to be spent on off-post housing allowances. Further, this alternative continues the current noncompliance with Army policy of housing lower enlisted ranks on post where command presence can ensure Soldier safety, welfare and morale for young Soldiers.

SUMMARY OF ENVIRONMENTAL IMPACTS

As detailed in this EA, construction activities associated with the Proposed Action would generate adverse impacts to natural resources, but no significant adverse impacts would occur. This is because these impacts would be temporary, lasting approximately six months during the construction phase for each phase of the project. The intensity of the adverse impacts would be limited to the area immediately surrounding the three building sites. Additionally, the number of receptors would be limited to a relatively small number of troops, staff, and personnel within FMMD. These adverse impacts would end once the construction phases are completed.

During operation, long-term, significant, beneficial impacts would be realized because of the efficient functioning of the new residential buildings and facilities which would be an overall improvement to the landscape. On a cumulative basis, the three building phases would require minor, routine operational building and grounds maintenance and would improve the visual

landscape. Additionally, the restoration of the stormwater run-off facility will enhance the FMMD watershed functions and values beyond the proposed action area. Table FNSI-1 summarizes the potential consequences the Proposed Action and No Action Alternative would have on resources evaluated in the EA.

Table FNSI-1. Summary of Environmental Consequences

Resource	Construction	Operation	No Action
Land Use	Short-term, negligible, direct, adverse impact	Long-term, minor, direct, and indirect, beneficial impact	No impact
Visual Resources	Short-term, moderate, direct, adverse impact	Long-term, moderate, direct, beneficial impact	No impact
Soils	Short-term, minor, direct, adverse impact	Long-term, minor, direct, adverse impact	No impact
Noise	Short-term, minor, direct, adverse impact	Long term, negligible, direct, adverse impact	No impact
Air Quality	Temporary, minor, direct, adverse impact	Long-term, negligible, direct, adverse impact	Long-term, minor adverse impact
Water Resources	Short-term, negligible, direct, adverse impacts to surface water from sedimentation of stormwater run-off. No impact on floodplains. Short-term, indirect, negligible, adverse impact on groundwater from incidental spills. No impact on coastal zone resources. Long-term, moderate, direct, adverse impact on wetlands impacted by SWM pond retrofit.	No adverse impacts to surface water. No impact on floodplains. Long-term, indirect, negligible, adverse impact on groundwater from loss of recharge area. No impact on coastal zone resources or wetlands. Long-term, moderate, direct, beneficial impact on the improved SWM pond.	No impact
Biological Resources	Permanent, minor, direct, adverse impact on vegetation and terrestrial species; No impact on RTE species or aquatic species and habitat	Long-term, minor, direct, beneficial impacts on vegetation, negligible, permanent, direct, adverse impacts on terrestrial wildlife, no impact on rare, threatened, or endangered species or aquatic species and habitat	Long-term, minor, direct, adverse impacts on vegetation; no impact on terrestrial species, RTE species, or aquatic species and habitat
Cultural Resources	No impact	No impact	No impact
Hazardous, Toxic, and Radioactive Resources	No impact	No impact	No impact

Resource	Construction	Operation	No Action
Traffic and Roadways	Temporary, negligible, direct, adverse impact	Long-term, minor, direct, beneficial impact	Long-term, direct, minor, adverse impact
Infrastructure and Utilities	Short-term, negligible, direct, adverse impact	Long-term, negligible, direct, adverse impact on selected utilities.	No impact
Socioeconomics, Environmental Justice, and Protection of Children	Short-term, minor, direct, beneficial impacts on Socioeconomics. No impact on Environmental Justice or Protection of Children	Long-term, minor, adverse impact on Socioeconomics to private housing market. Long-term, significant beneficial socioeconomic impact to Army in reduced off-site housing costs. No impact on Environmental Justice or Protection of Children.	Long-term, direct, significant, adverse impacts to the Army's cost expenditures for off-site housing allowances.

PUBLIC INVOLVEMENT

The Draft EA will be made available online for public review at <https://home.army.mil/meade/index.php/my-fort/all-services/environmental> and a hard copy available at the FMMD Medal of Honor Memorial Library and the Odenton Regional Library, Odenton, Maryland. The Notice of Availability for the Draft EA will be published in the Capital Gazette. All comments received during this public review period, including agency responses, will be considered.

CONCLUSION AND FINDING OF NO SIGNIFICANT IMPACT

I have reviewed the EA and find that the Proposed Action to construct the new barracks complex on Fort Meade will have no significant impacts on the natural environment, cultural resources, or the human environment. Based on these findings, an Environmental Impact Statement is not required for this project and a Finding of No Significant Impact shall be issued.

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Date

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1 INTRODUCTION

1.1 PROJECT BACKGROUND

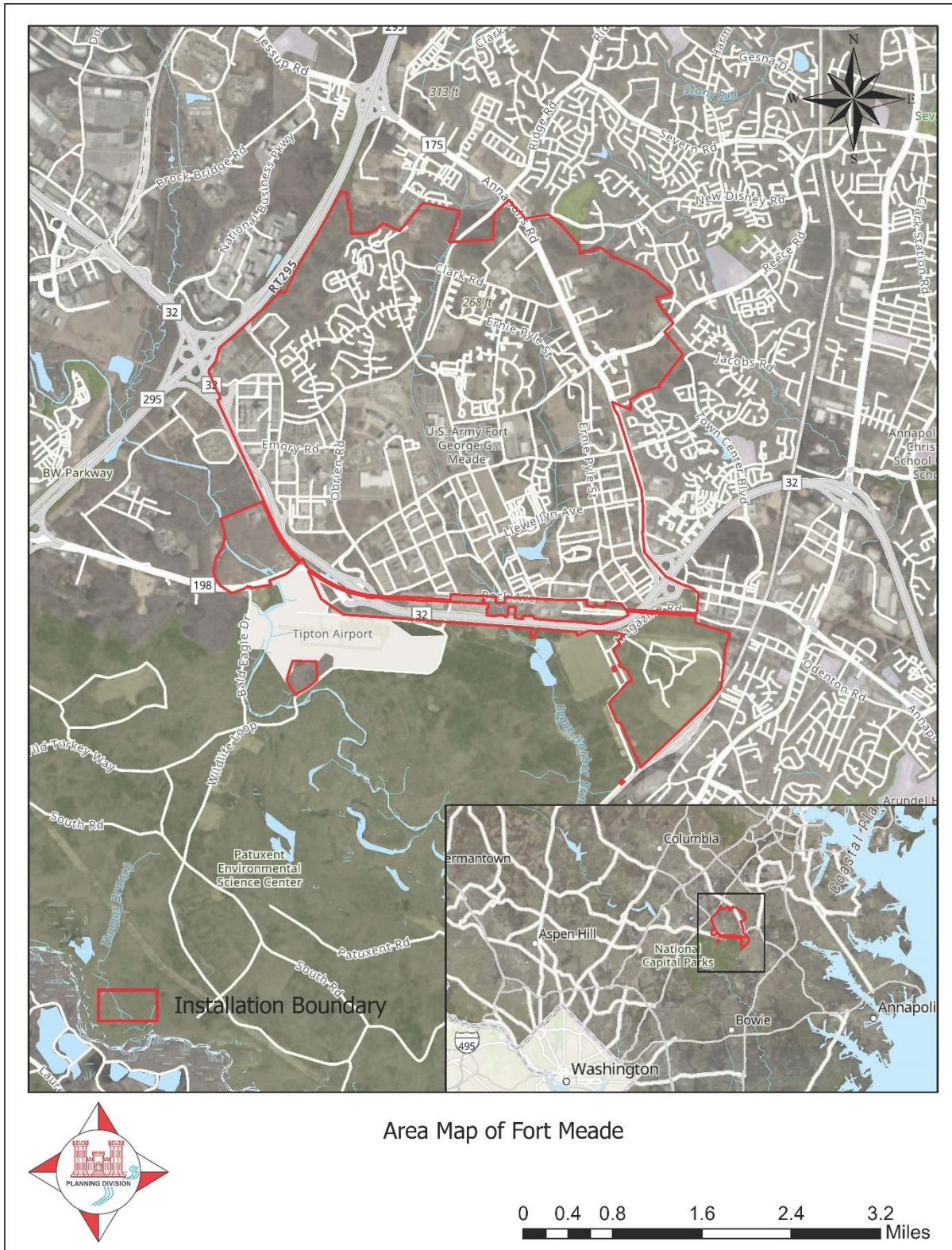
This Environmental Assessment (EA) has been prepared to identify, analyze, and document the potential impacts associated with the Proposed Action to implement a new barracks complex at Fort George G. Meade (FMMD), Maryland. Included herein by reference are the prospective physical, environmental, cultural, and socioeconomic impacts.

FMMD is approximately 5,107.7 acres and is located in northwestern Anne Arundel County, Maryland, approximately halfway between Baltimore and Washington, D.C. FMMD is located near the communities of Odenton, Laurel, Columbia, and Jessup. Figure 1 shows the FMMD boundary.

This 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), 32 CFR Part 651 (Environmental Analysis of Army Actions), and Army Regulation 200-1 (Environmental Protection and Enhancement) to assess the environmental consequences of the construction and operation of the barracks complex. Pursuant to NEPA, Federal agencies are required to consider the environmental consequences of their Proposed Actions. NEPA typically applies when the Federal agency is the proponent of the action or where Federal funds are involved in the action.

This EA provides NEPA analysis and documentation for the Proposed Action, which is to design and construct up to a total of nine (9) new barracks buildings in three phases on three different sites within proximity to each other at FMMD. In addition, this EA evaluates the No Action Alternative. The No Action Alternative reflects the status quo and provides a comparative baseline against which to analyze the effects of the Proposed Action.

Figure 1. Area Map of Fort Meade



2 PURPOSE AND NEED

The purpose of the Proposed Action is to provide adequate, safe, and modern housing at FMMD. The housing designs are required to meet Army Unaccompanied Enlisted Personnel Housing (UEPH) standards for approximately 1,600-1,800 active-duty enlisted personnel (ranks E1-E6).

The need for the Proposed Action is to improve cohesiveness for the E1-E6 ranks (Service members) through modern, co-located housing that is also cost-effective for FMMD long term. These Service members are required by regulation to live on-post to promote improved morale and increase human health & safety. Currently, Service members are living off-post or in sub-standard, antiquated barracks where the following conditions exist:

- The current on-post barracks are dilapidated and unhealthy. Mold and mildew from failing air conditioning systems and leaking roofs has caused these structures to be unsafe.
- The shortage of adequate on-post housing for Service members requires them to find housing off-post. This is expensive and does not foster unit cohesion.
- The barracks complex constructed in 2001 can only accommodate one-third of the current housing requirement for FMMD.

The existing Korean War era barracks buildings, built in 1954, are dilapidated and have exceeded the total 50% cost limit which determines whether a building should be repaired or replaced. Repeated treatments of chlorine wash are required to suppress the growth of mold and mildew resulting from failing roofs. The interior of the buildings and the antiquated systems would continue to deteriorate, requiring increased maintenance. During the past two years, \$3.5 million (M) has been spent on sustainment, restoration, and modernization (SRM) (formerly known as Real Property Maintenance) of unaccompanied enlisted personnel housing at FMMD. Two barracks buildings within the 6th Armored Calvary Regiment Road (6th ACR) cluster have already been demolished, and another two have been slated for demolition.

Additionally, a portion of the existing barracks operated by FMMD are located within a highly secured area, which does not afford the Service members access to common soldier support and quality of life facilities and services. Further, the lands currently occupied by these barracks are needed for future mission operations. Current estimates of Department of Defense (DoD) programming show the land would be needed in Fiscal Year (FY) 22 to support mission development.

The shortage of on-post housing for Service Members necessitates the use of certificates of non-availability (CNAs). This use of CNAs has been maximized with that expense now equaling \$60M each year. This amount includes many enlisted members who normally would be required to reside on-post by regulation, where the chain-of-command is better able to provide good order and discipline, assist with professional development and aid in the Soldiers' general welfare.

2.1.1 Screening Criteria

The screening criteria used to develop the Proposed Action were established by the Installation Management Command (IMCOM) are as follows:

- Habitable buildings that will house 1,600 – 1,800 Service members safely,
- Near or adjacent to existing facilities such as the dining facility, gym, existing serviceable barracks, and other on-post amenities,
- In proximity to other Soldiers to facilitate morale, training, team building and other mission response requirements,
- In proximity to the chain-of-command to mentor professional development, general welfare, and discipline,

- In a compatible-use zone which alleviates security and access issues,
- Allows lands dedicated for existing tenant organizations to fully support tenant missions, present and future; and,
- Reduces the current annual expenditure of \$60M as a result of utilizing off-post housing.

2.2 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

This EA informs decision makers and the public of the likely environmental impacts of the Proposed Action and No Action Alternative. This EA identifies, documents, and evaluates environmental effects of the proposed activity at FMMD. Environmental effects would include those related to construction and operation of the Proposed Action as well as impacts of increased personnel and traffic to FMMD. The Proposed Action, No Action Alternative, and other alternatives considered but eliminated are detailed in Section 3.0.

Section 4.0 presents the Affected Environment at FMMD. Section 5.0 presents the Environmental Consequences, which, with information presented in the No Action Alternative, constitutes the baseline against other alternatives to be measured for the analysis of the effects of the construction and operation of the barracks complex.

2.3 PUBLIC INVOLVEMENT

Public participation opportunities with respect to this EA and decision making on the Proposed Action are guided by 32 CFR Part 651. Upon completion, the EA will be made available to the public for 30 days, along with a draft Finding of No Significant Impact (FNSI). At the end of the 30-day public review period, the Army will consider any comments submitted by individuals, agencies, or organizations on the Proposed Action, the EA, or draft FNSI, if applicable. As appropriate, the Army may then execute the FNSI and proceed with implementation of the Proposed Action. If it is determined prior to issuance of a final FNSI that implementation of the Proposed Action would result in significant impacts, the Army will publish in the *Federal Register* a Notice of Intent to prepare an Environmental Impact Statement, commit to mitigation actions sufficient to reduce impacts below significance levels, or not take the action.

2.4 ENVIRONMENTAL LAWS AND REGULATIONS

Army decisions that affect environmental resources and conditions occur within the framework of numerous laws, regulations, and Executive Orders (EO). Some of these authorities prescribe standards for compliance while others require specific planning and management actions to protect environmental values potentially affected by Army actions. Key provisions of appropriate statutes and EOs are described in more detail throughout the text of this EA and in **Table 1**.

Table 1. Compliance with Federal Environmental Statutes and Executive Orders

Acts	Compliance
Archaeological Resources Protection Act (ARPA) of 1979	FULL
Clean Air Act, as amended (42 United States Code [U.S.C.]	FULL
Clean Water Act, as amended (33 U.S.C. ch. 23 §1151)	FULL
Coastal Zone Management Act (CZMA) of 1972, as amended	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
Section 438 of the Energy Independence and Security Act (42 U.S.C. ch. 152 §17001 et seq.)	FULL
Endangered Species Act of 1973, as amended (16 U.S.C. ch. 35 §1531 et seq.)	FULL

Acts	Compliance
Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e)	FULL
Migratory Bird Treaty Act (16 U.S.C §§703-712, et seq.)	FULL
National Defense Authorization Act of 2018 (Public Law 115-91)	FULL
National Environmental Policy Act of 1969 (42 U.S.C. §4321 et seq.)	FULL
National Historic Preservation Act of 1966, as amended (16 U.S.C. ch. 1A, subch. II §470 et seq.)	FULL
Noise Control Act of 1972, as amended (42 U.S.C. §§4901-4918, et seq.)	FULL
North American Wetlands Conservation Act (16 U.S.C. 4401-4412)	FULL
Resource Conservation and Recovery Act (42 U.S.C. ch. 82 §6901 et seq.)	FULL
Safe Drinking Water Act, as amended (42 U.S.C. §300f)	FULL
Solid Waste Disposal Act of 1965, as amended (42 U.S.C 6901 et seq.)	FULL
Toxic Substances Control Act of 1976 (15 U.S.C. ch.53, subch. I §§2601-2629)	FULL
Watershed Protection and Flood Prevention Act of 1954 (16 U.S.C. §1101, et seq.)	FULL
Wild and Scenic Rivers Act (16 U.S.C. 1271, et seq.)	FULL
Sikes Act, as amended (16 U.S.C. 670a-670o)	FULL
Executive Orders (EO)	
Protection and Enhancement of the Cultural Environment (EO 11593)	FULL
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
Invasive Species (EO 13112)	FULL
Consultation and Coordination with Indian Tribal Governments (EO 13175)	FULL
Efficient Federal Operations (EO 13834)	FULL
Chesapeake Bay Protection and Restoration (EO 13508)	FULL
Strengthening Federal Environmental, Energy, and Transportation Management (EO 13514)	FULL

3 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

3.1 PROPOSED ACTION

The Proposed Action includes design and construction of up to nine (9) new barracks buildings to house a total of 1,600-1,800 unaccompanied enlisted personnel (E1-E6), to be constructed in three (3) phases at three (3) sites in close proximity at FMMD (*Figure 2*).

Figure 2. Proposed Barracks Complex Artist Rendition



The proposed barracks complex would be designed using UEPH standards for 2/1 market-style dwelling units with two private bedrooms sharing one bathroom, and includes:

- Living/sleeping rooms;
- Semi-private bathrooms;
- Walk-in closets;
- Storage;
- Laundry facilities;
- Service areas;
- Intrusion detection system;
- A separate community building with a day room, game room, community kitchen and administrative space, or, a common/day room within each building; and,
- Supporting infrastructure (utilities, electric service, exterior lighting, fire protection and alarm systems, paving, walks, curbs and gutters, sedimentation and erosion control, storm drainage, storm water management, picnic area, bicycle racks, dumpster pads and enclosures, information systems, and parking).

The three proposed sites are located within the central portion of FMMD, as defined in the current FMMD Draft Area Development Plan, dated January 2020. The Proposed Action project areas are shown in aerial view on *Figure 3*, and relative to the FMMD boundary on *Figure 4*. Phase I, to be constructed first, is located south of Dutt Road, situated between Zimborski Avenue and Taylor Avenue and north of Hodges Street. The second project site (Phase II) is located west of Zimborski Avenue and may span Dutt Road. The third site (Phase III) is located south of Simonds Street between Taylor Avenue and York Avenue, and

west of the outdoor running track associated with Gaffney Fitness Center. A stormwater management (SWM) pond is located east of Taylor Avenue and south of the Gaffney Fitness Center. Current stormwater infrastructure serving the Freedom Barracks uses this SWM pond facility as a downstream discharge point. The SWM pond has not been properly maintained and retrofitting would be required to support Phases I, II and III barracks. Retrofit design details would be specified as part of Phase I, such that the pond is fully functional and able to manage stormwater from Phases II and III once those phases are operational. The SWM pond refit would involve modifying its earthen berms to manage a greater volume of stormwater runoff. The limit of disturbance of the refit would require impacting a wetland area located to the east of the SWM pond. The refit would permanently impact approximately 1,112-square-feet of emergent non-tidal wetlands and 3,607-square-feet of impacts within the 25-foot wetland buffer area. Figure 5 depicts the eastern portion of the current SWM pond boundary and the wetlands areas that would be impacted from modifying the SWM berm dimensions. FMMD has obtained authorization from MDE for these wetland impacts. Additionally, to the maximum extent technically feasible, FMMD would adhere with Section 438 of the Energy Independence and Security Act of 2007 (EISA) and Code of Maryland Regulations (COMAR) 26.17.02.01 (*Maryland Department of the Environment, Water Management, Purpose and Scope*) to ensure that pre- and post-hydrology area remain the same.

Figure 3. Proposed Project Locations



Figure 4. Proposed Action Locations Relative to FMMD Boundary

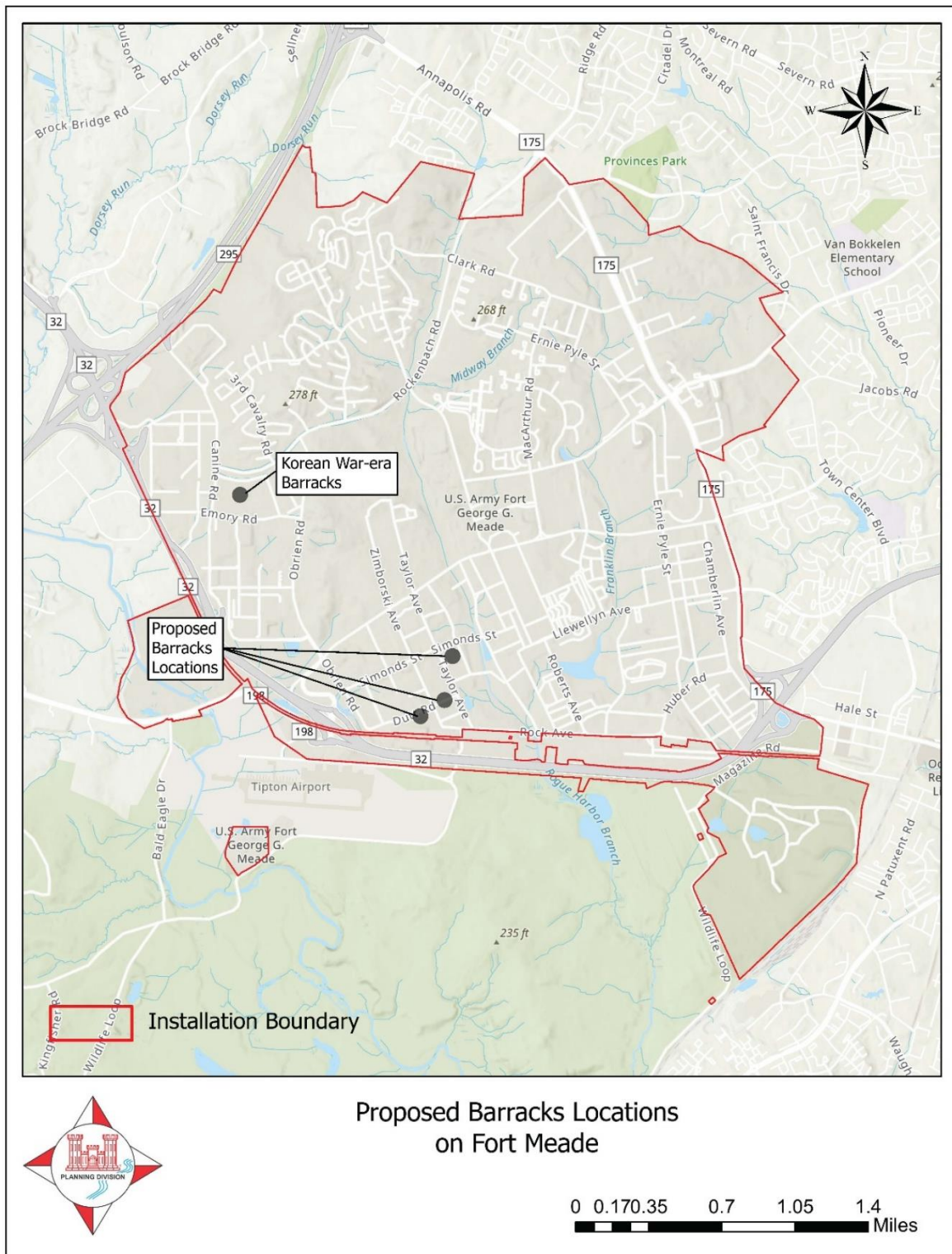
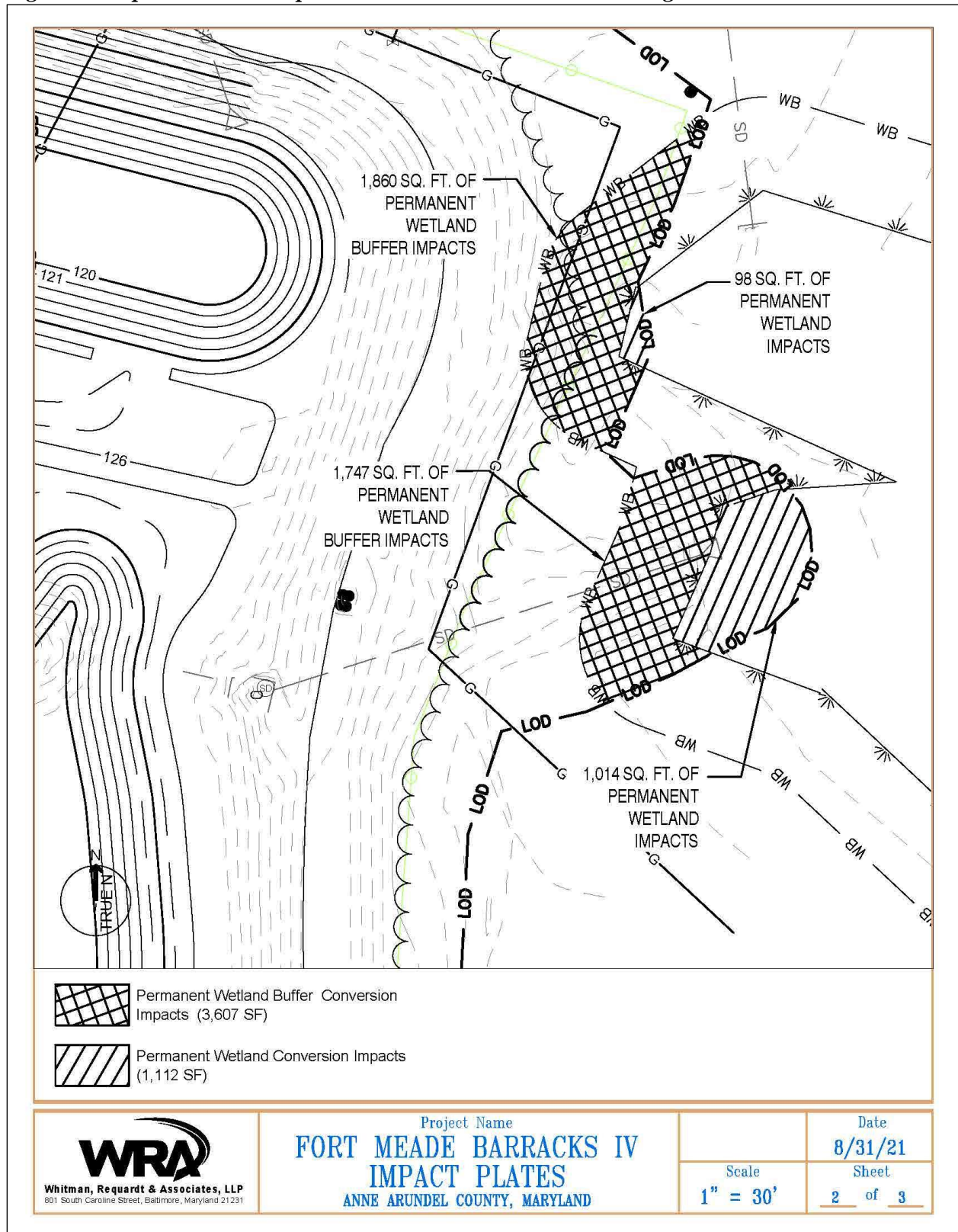


Figure 5 Proposed Action Improvements to the Stormwater Management Pond



3.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the Proposed Action would not be implemented. This entails continuing to house Soldiers in antiquated barracks that do not meet current Army standards for unaccompanied enlisted personnel, and to continue use of CNAs to house Soldiers off-post. Funds would continue to be spent on maintenance and repairs of antiquated barracks that have long surpassed their usable life, as well as funds that would continue to be spent on off-post housing allowances. Further, this alternative continues the current noncompliance with Army policy of housing lower enlisted ranks on-post where command presence can ensure Soldier safety, welfare, and morale for young Soldiers.

3.3 OTHER ALTERNATIVES CONSIDERED BUT ELIMINATED

3.3.1 ALTERNATIVE 1

Alternative 1 would increase off-post housing utilization. This alternative was eliminated from further consideration because the annual cost for the CNA is approximately \$60M per year. Investing the Army's money in construction of the barracks would be a significantly better payback than indefinite payments of basic housing allowances. Additionally, this alternative continues the current noncompliance with Army policy of housing lower enlisted ranks on-post where command presence can ensure Soldier safety, welfare, and morale for young Soldiers. Alternative 1 would not fully meet the screening criteria established by IMCOM and would not allow for the community cohesion and morale that living on-post fosters. Therefore, it was not carried forward for further analysis.

3.3.2 ALTERNATIVE 2

Alternative 2 would involve requesting the Residential Communities Initiatives office (now known as the Installation Housing Office) to construct more on-post housing. Alternative 2 was not carried forward for further analysis because it would not meet the screening criteria of consolidating the Service members in one location near post support facilities. Additionally, previously identified alternative sites on the post where such construction might occur have been obligated or occupied by other tenant organizations during this planning process.

3.3.3 ALTERNATIVE 3

Alternative 3 would involve repairing existing Korean War-era barracks. This alternative was removed from further study because the cost to repair and maintain these buildings exceeds allowable funding limits. The 6th ACR barracks have gang latrines and lack other amenities. Bringing these buildings up to current design and safety standards would render the project infeasible with regard to cost, nor is it the most efficient use of funding. Additionally, a portion of the existing barracks operated by FMMD are located within a highly secured area, which does not afford the Service members access to common soldier support and quality of life facilities and services. Further, the lands currently occupied by these barracks are needed for future mission operations. Alternative 3 was not carried forward for further analysis because it does not meet the screening criteria of consolidating the Service members in one location near post support facilities and in a compatible-use zone, which alleviates security and access issues, and it impedes the ability of programmed expansion of existing missions to proceed on schedule.

4 AFFECTED ENVIRONMENT

4.1 LAND USE

4.1.1 Regional Land Use

FMMD encompasses approximately 5,107.7 acres and is located in the northwest corner of Anne Arundel County, Maryland approximately 17 miles southwest of downtown Baltimore and 24 miles northeast of Washington, DC. The state capitol city of Annapolis lies approximately 14 miles southeast. FMMD includes administrative areas, Army Family Housing areas, industrial and maintenance areas, the exchange mall complex, and the Kimbrough Ambulatory Care Clinic.

FMMD is bounded by the Baltimore-Washington Parkway (MD 295) to the northwest, Annapolis Road (MD 175) to the east, Patuxent Freeway (MD 32) to the south and west, and the Mid-America Regional Council Penn Line and AMTRAK Line to the southeast. Other significant nearby transportation arteries include US Route 1 and Interstate 95, which run parallel to and just north of the Baltimore-Washington Parkway. Interstate 97, which connects Baltimore and Annapolis is located several miles east of FMMD and can be reached by taking MD 175 or MD 32 east. FMMD is predominately surrounded to the north, west, and east by residential areas, commercial centers, a mix of light industrial uses, and undeveloped areas. Directly to the south of FMMD are the Tipton Airport and 12,750-acre Patuxent Research Refuge, part of the U.S. Fish and Wildlife Service's (USFWS) National Wildlife Refuge System.

4.1.2 Land Use within FMMD

Privatized housing located mostly to the north, is open to active military and their families, retirees, and DOD civilian personnel. This makes up a significant portion of the installation with approximately 1,000 acres of land used exclusively for housing. The remaining areas of the installation toward the central and south primarily consists of barracks, administrative, mission, and Soldier support functions. Recreation areas include Burba Lake and Centennial Park, with training areas in the southeast portion of the installation (USACE, 2020a). Existing land uses within FMMD are displayed on **Figure 5**.

The three proposed sites would be located within the central portion of FMMD and are characterized by largely unmaintained vacant lots within or immediately adjacent to existing roadways. Phase I would be south of the newly constructed Freedom Center Barracks Complex on land that is high and dry. It is currently an unmaintained field that was previously mowed but is no longer maintained due to budgetary constraints. Phase II would be in close proximity to Hwy 32, a busy 2-lane divided highway. The site has some larger specimen trees in one corner of the property as well as a functioning US Marine Corps obstacle course. Phase III would be located between the Freedom Center Barracks Complex and an outdoor track and field facility on a site which was previously filled and impacted by portable classrooms which have since been removed. The three sites total approximately 21 acres: Phase I, 6 acres; Phase II, 10 acres; and Phase III, 5 acres.

4.2 VISUAL RESOURCES

Visual resources can be defined as the natural and man-made features that constitute the aesthetic qualities of an area. Natural visual resources occur in the landscape, typically without human assistance, and include native or mostly undisturbed landforms, water bodies, vegetation, and animals, both wild and domesticated. Visual quality is defined as the impression a particular landscape has on its observers. The importance of visual resources and any changes in the visual character of an area is influenced by social considerations, including the public value placed on the area, public awareness of the area, and community concern for the visual resources in the area.

Visual resources also can include viewsheds, defined as the geographical area that is visible from a specific location. Viewsheds include all surrounding points that are in the line-of-sight with that location and

excludes any points that are beyond the horizon or obstructed by other features. They can include cultural and historic landmarks, landforms of aesthetic value or significance, water surfaces, or vegetation. The viewshed informs the overall impression that a viewer receives of an area or its landscape.

The visual characteristics of FMMD are dominated by areas improved with buildings, roadways, parking areas, landscaped grounds, and pockets of forest surrounded by development.

The proposed barracks project areas are located entirely within the boundaries of FMMD and are largely unmaintained vacant lots with no buildings or valuable esoteric beauty. The average building height at FMMD is 1.3 stories; the barracks would likely be 3 stories.

The unmaintained lots are overgrown with invasive vegetation (Bradford pear), poison ivy, and other woody shrubs. The areas are not used for recreation or other passive outdoor activities. The area is surrounded by other buildings, roadways, large parking areas, and a wooded stormwater management pond to the east.

4.3 TOPOGRAPHY AND GEOLOGY

4.3.1 Topography

FMMD lies in the Atlantic Coastal Plain Physiographic Province, which is characterized by relatively flat topography that slopes towards the east (MGS 2020). FMMD has approximately 210 feet of topographic relief. The highest point is at 310-feet above mean sea level (msl) and occurs at the First Army Radio Station Tower, located in the northern most central portion of FMMD. The lowest elevation, less than 100 feet, occurs in the southwestern corner of FMMD, along the Little Patuxent River. Most of the FMMD property slopes gradually to the south and southwest. The Proposed Action area (Figure 7) is in the SW corner of FMMD. Slopes at FMMD are generally less than 10% grade (USACE 2007). Slopes exceeding 10% are rare and occur primarily in pockets in the north-central and central parts of FMMD and along stream corridors. These steep slopes usually occur in natural wooded areas and are ideally suited as vegetated buffer zones for more developed areas.

Topography affects where development is feasible on the post. Where slopes are 10% or greater, the post should take care to maintain safe setback distances or regrade, as necessary. While much of the level land has been developed, the greatest topographical change occurs in the southeast portion of the post. This area is more forested and used for range and training areas (FMMD 2020). The Proposed Action would be located in the central, southwest corner of FMMD.

4.3.2 3333Geology

The geologic history of the eastern United States is characterized by mountain-building processes and the cyclical opening and closing of a proto-Atlantic Ocean (USGS 2000). During the mountain building event called the Alleghenian Orogeny, shallow water marine sediments were uplifted, forming the Blue Ridge-South Mountain anticlinorium. During the Cenozoic Era (1.65 million years before present to recent), the Blue Ridge-South Mountain anticlinorium began to erode, depositing Atlantic Coastal Plain sediments. Unconsolidated sand, clay, and silt compose the Atlantic Coastal Plain physiographic province. These sediments thicken towards the southeast, forming a wedge. Precambrian crystalline rocks underlie the sediments and are exposed along the boundary between the Coastal Plain and Piedmont provinces several miles to the west of FMMD.

Figure 6. Land Uses at FMMD

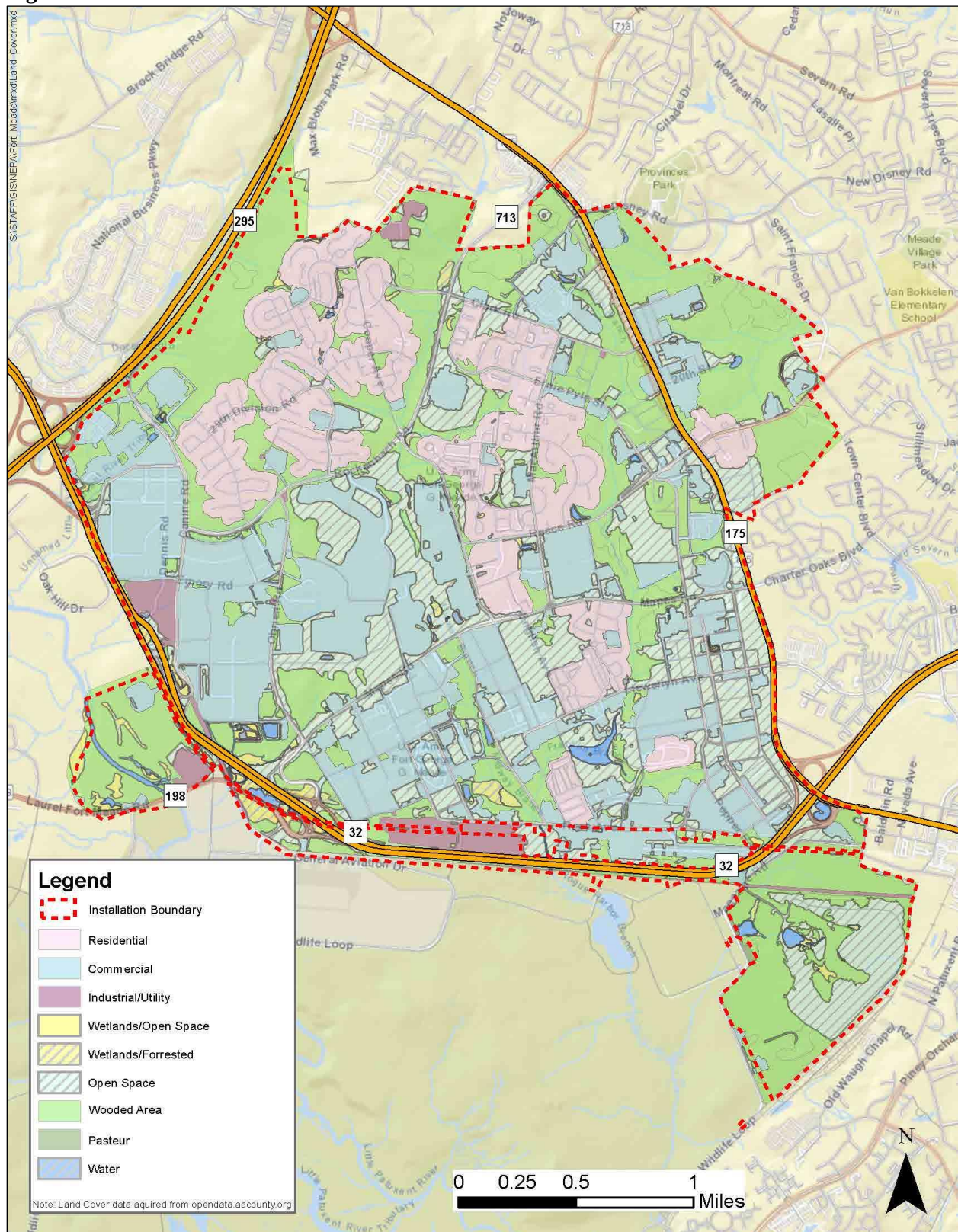
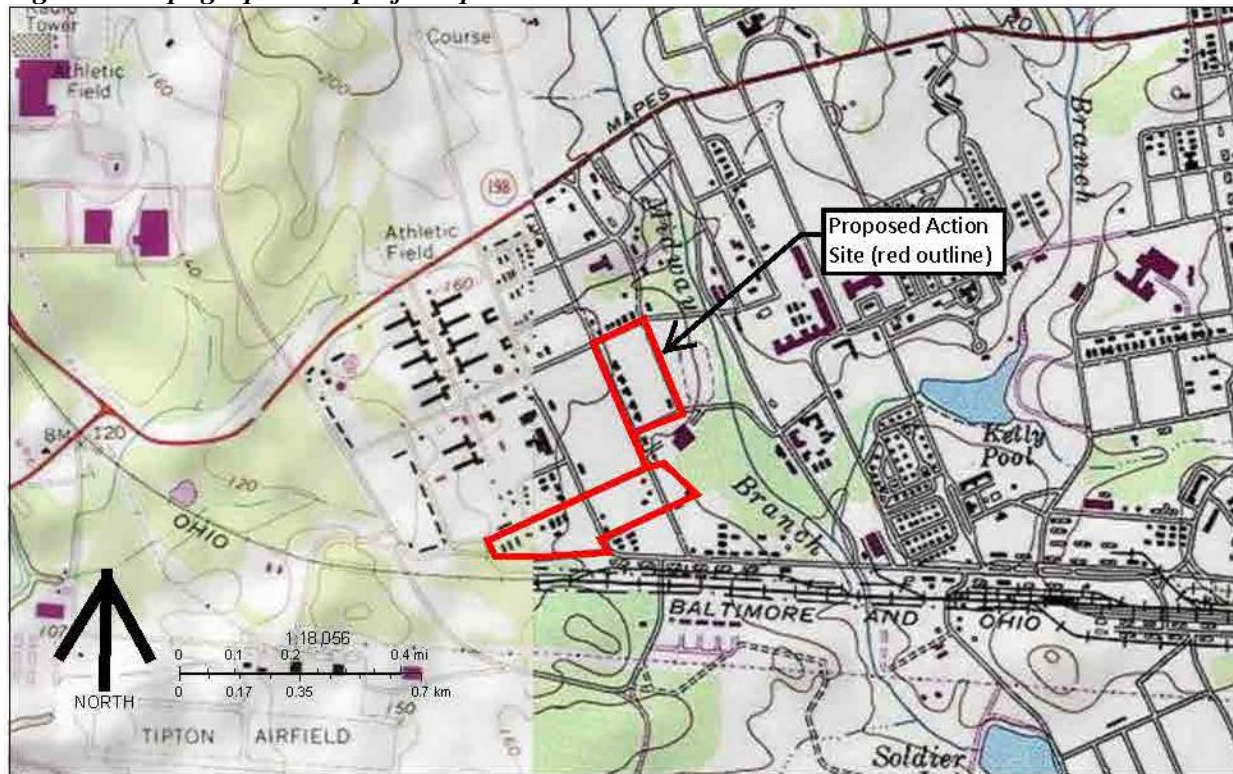


Figure 7. Topographic Map of Proposed Action Site



4.4 SOILS

The U.S. Department of Agriculture (USDA) Natural Resources and Conservation Service (NRCS) has mapped 41 distinct soil types at FMMD. The most common soil types are Downer, Fort Mott, Patapsco, and Sassafras complexes. Downer soil is a well-drained soil found on knolls, interfluvies, and Coastal Plain uplands. This soil type is formed from parent material consisting of loamy fluviomarine deposits. Fort Mott soil is a well-drained soil found on interfluvies and Coastal Plain uplands. This soil type is formed from parent material consisting of sandy eolian deposits over loamy fluviomarine deposits. Patapsco soil is a somewhat excessively drained soil that is found on broad interstream divides and Coastal Plain uplands. This soil type is formed from parent material consisting of sandy eolian deposits over loamy fluviomarine deposits. Sassafras soil is a well-drained soil that is found on broad interstream divides and fluviomarine terraces. This soil type is formed from parent material consisting of loamy fluviomarine deposits. Other soil types that occur on FMMD include Udorthents, Russett, Christiana, Evesboro, Hammonton, Fallsington, Zekiah, Hambrook, Croom, Woodstown, Phalanx, Galestown, Chillam, Mattapex, Matapeake, and Buttertown (USDA NRCS, 2020).

The soils mapped at FMMD include Chillium loam and Urban land complex (0 to 5% slopes); Christiana-Sassafras complex and Urban land complex (2 to 15% slopes); Downer-Hammonton complex and Urban land complex (0 to 15% slopes); Downer-Phalanx complex (5 to 15% slopes); Evesboro and Galestown soils (5 to 10% slopes); Fallsington sandy loams (0 to 2% slopes, northern coastal plain); Mattapex-Buttertown complex (5 to 10%); Patapsco-Fort Mott complex, Evesboro complex, and Urban land complex (0 to 15% slopes); Russett-Christiana-Hambrook complex and Urban land complex (0 to 15% slopes), Sassafras fine sandy loam, Croom soils, Hambrook complex, and Urban land complex (0 to 15% slopes); Udorthents loamy soils, reclaimed gravel pits, and refuse substratum (0 to 50% slopes); Woodstown sandy loam and Urban land complex (0 to 5% slopes, Northern Coastal Plain); and Zekiah and Issue soils (0 to 2% slopes, frequently flooded) (USDA NRCS, 2020).

The USDA NRCS soil survey also identified water and urban land at FMMD. Urban land includes areas in the vicinity of buildings, roadways, and other paved areas. Water includes ponds, lakes, streams, and wetland areas at FMMD (USDA NRCS, 2020).

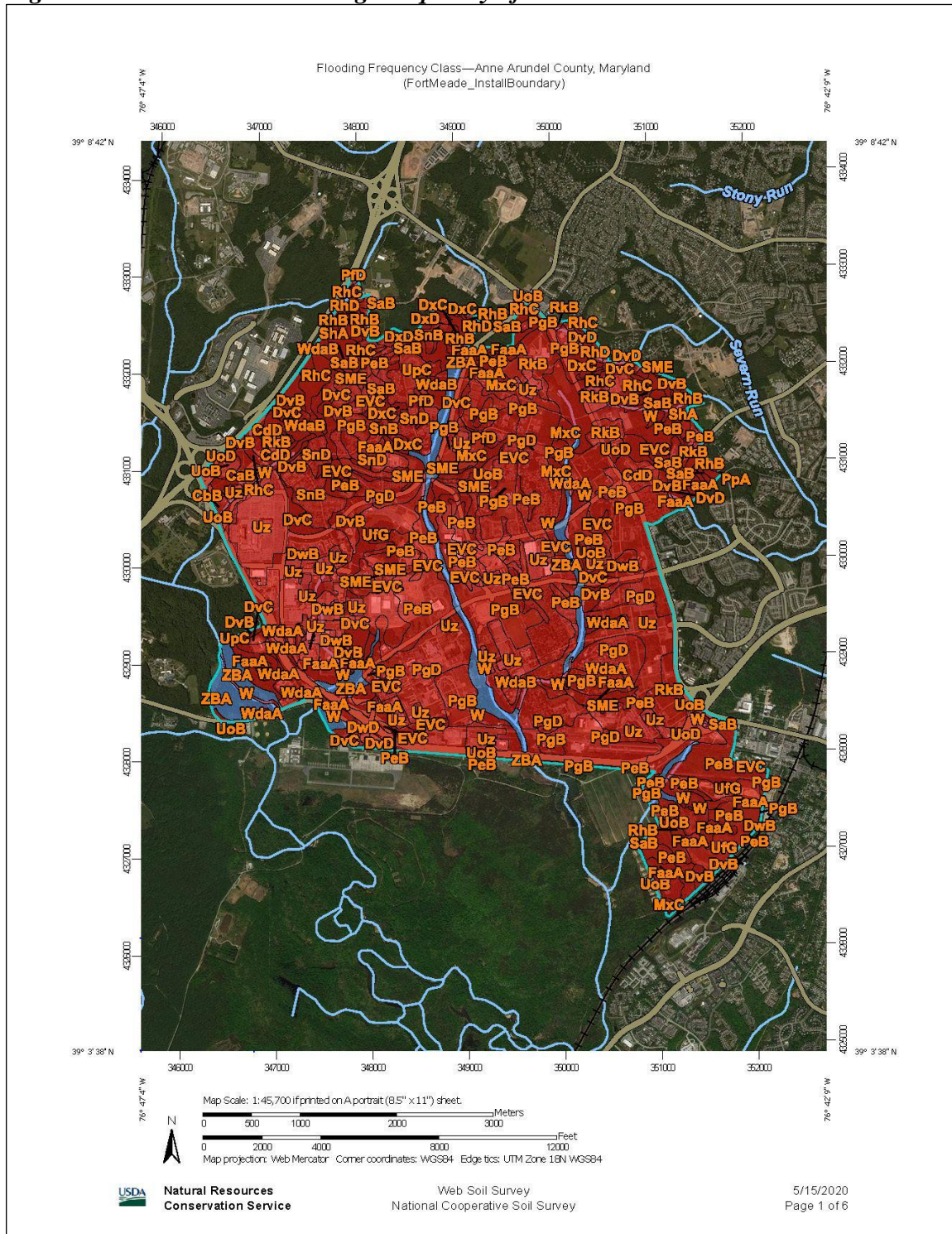
Soils are classified by drainage class, which refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Soils at FMMD are predominately moderately well drained to well drained. A few soil types are excessively well drained, including Evesboro, Fort Mott, and Patapsco, and a few soil types are poorly drained, including Fallsington and Zekiah (USDA NRCS, 2020).

Soils are also classified by flooding frequency class. Flooding is the temporary inundation of an area caused by overflowing streams, by run-off from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding and not flooding. Zekiah and Issue soils, which are mainly located along streams at FMMD, are classified as “occasional” and “frequent” flooding. “Occasional” flooding indicates that flooding occurs infrequently under normal weather conditions and the chance of flooding is 5 to 50% in any year. “Frequent” flooding indicates that flooding is likely to occur under normal weather conditions and the chance of flooding is more than 50% in any year, but less than 50% in all months in any year. Soils bordering the Proposed Action are not prone to flooding and are classified in the “none” category, depicted in red on **Figure 8**. “None” means that flooding is not probable, the chance of flooding is nearly 0% in any year, and flooding occurs less than once in 500 years (USDA-NRCS 2020). All other soils at FMMD are classified as “none.”

Soil types are assigned to hydrologic soil groups, which are based on estimates of run-off potential, according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Hydrologic soil groups range from Group A, which have a high rate of water transmission, to Group D, which have a very slow rate of water transmission. Soils at FMMD include all four hydrologic soil groups, but are predominately classified as Group A, with a high infiltration rate, and Group C, with a slow infiltration rate (USDA NRCS, 2020). Fallsington sandy loams, Russett-Christiana-Hambrook complex and Russett-Christiana-Urban Land complex, Sassafras loam and Sassafras-Croom soils, Woodstown sandy loam and Woodstown-Urban Land complex, and Zekiah and issue soils are rated as hydric. Hydric soils are soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation (NRCS, 1994). Detailed descriptions of soil series can be found online in the USDA NRCS’s Soil Survey Geographic Database for Anne Arundel County (USDA-NRCS 2020).

“Urban land” and “Cut and fill land” were also identified as map units in the soil survey (USDA-NRCS 2020). Urban land includes areas in the vicinity of pavements and buildings. Cut and fill land includes miscellaneous soil types in severely disturbed areas to the extent that identification by soil series cannot be determined. Both Urban and Cut and fill lands are common in developed sites that have been extensively modified by earth-moving equipment.

Figure 8. USDA-NRCS Flooding Frequency of Soils at FMMD



Note: Blue coloration indicates frequent flooding frequency. The chance of flooding is more than 50% in any year but is less than 50% in all months in any year. Red coloration indicates flooding is not probable and flooding occurs less than once in 500 years.

4.5 NOISE

Noise is traditionally defined as unwanted sound that interferes with normal activities in a way that reduces the quality of the environment. Magnitudes of sound, whether wanted or unwanted, are usually described by sound pressure. There are two primary types of sound sources that generate noise: stationary and transient. Sounds produced by these sources can be intermittent or continuous. A stationary source is usually associated with a specific land use or site, such as construction activities or the operation of generators. Transient sound sources, such as vehicles and aircraft, move through the area. The human auditory system is sensitive to fluctuations in air pressure above and below the barometric static pressure. The loudness of sound as heard by the human ear is measured on the A-weighted decibel (dBA) scale.

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. The Act also serves to (1) establish a means for effective coordination of federal research and activities in noise control; (2) authorize the establishment of federal noise emission standards for products distributed in commerce; and (3) provide information to the public with respect to the noise emission and noise reduction characteristics of such products. The Act provided the framework for states and local authorities to establish noise regulations.

Sound pressure levels are quantified in decibels (dB), which is dependent on both frequency and intensity, and is given a level on a logarithmic scale. The way the human ear hears sound intensity is quantified in A-weighted decibel (dBA), which are level “A” weights according to weighting curves. Sound levels for common activities and construction work are presented in **Table 2**. Noise levels and durations from these activities would vary depending on the specific equipment being used, and the impact from this noise on a receptor would depend on the distance between the receptor and the source of the noise. Generally, noise levels decrease by approximately 6 dBA for every doubling of distance for point sources (such as a single piece of construction equipment), and approximately 3 dBA for every doubling of distance for line sources (such as a stream of motor vehicles on a busy road at a distance).

According to the DoD, the Federal Aviation Administration, and the U.S. Department of Housing and Urban Development criteria, residential units and other noise-sensitive land uses are “clearly unacceptable” in areas where the noise exposure exceeds the day-night level (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 (**Table 2**). The Federal Interagency Committee on Noise developed land use compatibility guidelines for noise in terms of DNL. For outdoor activities, the U.S. Environmental Protection Agency (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.

Table 2. Common Sound Levels and Exposure Conditions

Source	Decibel Level	Exposure Concern
Soft Whisper	30	Normal safe level
Quiet Office	40	
Average Home	50	
Conversational Speech	65	
Highway Traffic	75	May affect hearing in some individuals depending on sensitivity, exposure length, etc.
Noisy Restaurant	80	
Average Factory and Construction Equipment Vehicles	80-90	
Pneumatic Drill	100	
Automobile Horn	120	
Jet Plane	140	Above 140 decibels may cause pain.
Gunshot Blast	140	

FMMD is relatively quiet with no notable sources of noise beyond personal and commercial vehicular traffic. Noise elements in and around the Proposed Action areas are consistent with that of any residential military post with business and administrative activities. Personal and commercial vehicles accessing the area, along with lawn maintenance and pedestrian activities, would be part of the normal noise environment in the area. The use of heavy equipment typically occurs sporadically throughout the daytime hours. Of the three proposed phases, Phase II is the closest (approximately 700 feet) to Hwy 32, which is a busy, two-lane, divided highway with heavy traffic at rush hour. Hwy 32 provides a relatively constant state of noise, particularly on weekdays, but there is a barrier of trees and vegetation between the road and the site.

In addition to traffic, the normal noise environment consists of residential noise from the existing Freedom Complex barracks and McGill Training Center, as well as other military unit physical training exercises, pedestrian activities, and intermittent construction activities. Seasonal noise additions include the normal operation of heating, ventilation, and air conditioning (HVAC) systems, lawn maintenance, snow removal, and increased pedestrian activities. None of these operations or activities produce excessive levels of noise.

Another potential noise source is Tipton Airport, a public airport just south of the FMMD installation boundary. As of April 2020, approximately 104 aircraft operations per day are conducted at the airfield, primarily by local general aircraft. Aircraft noise in the FMMD area is low, particularly because approach paths to the Tipton runway are oriented in an east-west direction, and commercial planes are not permitted to fly over the FMMD installation. Occasional helicopter arrivals and departures from FMMD that are required for Naval Support Activity Washington's mission can increase the local ambient sound levels, but these events are generally of short duration (USAG 2021).

4.6 AIR QUALITY

4.6.1 Regional Climate

The climate at FMMD is affected by its proximity to the Chesapeake Bay, Delaware Bay, and Atlantic Ocean. The daily average high temperatures range from 40 degrees Fahrenheit (°F) during January to 87°F during July (NCDC 2020). Daily average low temperatures range from 23°F during January to 67°F during July. The record minimum and maximum temperatures are -7°F and 105°F, respectively. The annual average precipitation amounts to 43 inches and is uniformly distributed throughout the year. The annual average snowfall amounts to 16 inches. At least a trace of precipitation occurs on approximately one-third of the days during the year. Prevailing winds are from the west-northwest. Southwesterly winds are more frequent during the summer months and northwesterly winds are more frequent during the winter months. The region is frequently under the influence of the Bermuda High Pressure System during the summer months. Air quality problems in the region are typically associated with this summer phenomenon (USACE 2007).

4.6.2 National Ambient Air Quality Standards and Attainment Status

USEPA Region 3 and Maryland Department of the Environment (MDE) regulate air quality in Maryland. The Clean Air Act (CAA) (42 U.S. Code [USC] 7401–7671q), as amended, gives the USEPA the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50, National Primary and Secondary Ambient Air Quality Standards, amended 1 July 2016, hereafter referred to as 40 CFR 50), acceptable concentration levels for seven criteria pollutants: particulate matter less than 10 microns (PM₁₀), particulate matter less than 2.5 microns (PM_{2.5}), sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O₃), and lead (Pb). Short-term standards (i.e., 1-, 8- and 24-hour periods) have been established for pollutants that contribute to acute health effects, while long-term standards (i.e., annual averages) have been established for pollutants that contribute to chronic health effects (see **Table 3**). Each state has the authority to adopt standards stricter than those established under the Federal program. MDE has adopted the NAAQS and is responsible for maintaining air quality standards for the State of Maryland.

Primary and secondary NAAQS for the aforementioned criteria are presented in areas that exceed the NAAQS ambient concentration (i.e., have poor air quality) and are labeled as nonattainment areas designated by Federal regulations. According to the severity of the pollution problem, areas exceeding the established NAAQS are categorized as marginal, moderate, serious, severe, or extreme nonattainment. Maintenance areas have recently met NAAQS but are considered to be at risk of not remaining in attainment if efforts are not continued to maintain better air quality.

FMMD is within the Metropolitan Baltimore Intrastate Air Quality Control Region for Maryland (40 CFR Part 81.28). Anne Arundel County is classified as a nonattainment area for the 8-hour O₃ and for SO₂ NAAQS, and in attainment for all other criteria pollutants (USEPA 2020).

Table 3. Federal and State Ambient Air Quality Standards

NAAQS Pollutant	Primary/ Secondary	Averaging Time	Level ⁽¹⁾	Form
Carbon Monoxide	Primary	8-hour	9 ppm	Not to be exceeded more than once per year
		1-hour	35 ppm	
Nitrogen Dioxide	Primary	1-hour	100 ppb	98 th percentile, averaged over 3 years
	Primary and secondary	Annual	53 ppb	Annual Mean
Ozone	Primary and secondary	8-hour	70 ppb	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particular Matter (PM _{2.5})	Primary	Annual	12 µg/m ³	Annual mean, averaged over 3 years
	Secondary	Annual	15 µg/m ³	Annual mean, averaged over 3 years
	Primary and secondary	24-hour	35 µg/m ³	98 th percentile, averaged over 3 years
Particular Matter (PM ₁₀)	Primary and secondary	24-hour	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Lead	Primary and secondary	Rolling 3-month average	0.15 µg/m ³	Not to be exceeded
Sulfur Dioxide	Primary	1-hour	75 ppb	99 th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

1 - Units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb) by volume, and micrograms per cubic meter of air (µg/m³)

4.6.3 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 regulate 188 HAPs based on available control technologies. The majority but not all HAPs are Volatile Organic Compounds (VOCs) (USEPA 2020). Sources of HAP emission at FMMD include stationary, mobile, and fugitive emissions, none of which currently occur at the proposed project site. Stationary sources elsewhere at FMMD include boilers, generators, water heaters, incinerators, fuel storage tanks, fuel-dispensing facilities, vehicle maintenance shops, laboratories, degreasing units, and similar testing units. Mobile sources of emissions include private

and government-owned vehicles. Fugitive sources include dust generated from construction activities and roadway traffic.

4.6.4 Clean Air Act Conformity

State agencies (in Maryland, MDE) develop air quality plans, which are also referred to as State Implementation Plans (SIPs), designed to attain and maintain the NAAQS and to prevent significant deterioration of air quality in areas which demonstrate air that exceeds NAAQS standards. Maryland has individual SIPs for various pollutants, including NO₂, PM_{2.5}, 8-hour O₃, regional haze, lead, etc. Federal agencies must ensure that their actions conform to the SIP in a nonattainment area, and do not contribute to new violations of ambient air quality standards, or an increase in the frequency or severity of existing violations, or a delay in timely state and/or regional attainment standards. The 1990 amendments to the CAA require Federal agencies to ensure that their actions conform to the SIP in a nonattainment area. The purpose of the General Conformity Rule (GCR) is to:

- Ensure Federal activities do not interfere with the budgets in the SIPs
- Ensure the attainment and maintenance of NAAQS
- Ensure actions do not cause or contribute to new violations of NAAQS

USEPA has developed two distinctive sets of conformity regulations: one for transportation projects and one for non-transportation projects. Non-transportation projects are governed by general conformity regulations (40 CFR Part 93, Determining Conformity of Federal Actions to State or Federal Implementation Plans, dated November 24, 1993, hereinafter referred to as 40 CFR 93). The Proposed Action is a non-transportation project within a nonattainment area. Therefore, a general conformity analysis is required with respect to the 8-hour O₃ and the SO₂ NAAQS.

The GCR specifies threshold emissions levels by pollutant to determine the applicability of conformity requirements for a project. Due to the proximity to the urbanized east coast of the United States, Baltimore County is considered an Ozone Transport Region (OTR), as is Anne Arundel County. The OTR has a marginal 8-hour ozone (2015) and moderate 8-hour ozone (2008) nonattainment classification (USEPA 2020). Because ozone formation is driven by other direct emissions, the air quality analyses focus on ozone precursors that include VOCs and NO_x. In accordance with USEPA policy, precursors that form PM_{2.5} (NO_x and SO₂) have also been evaluated. The applicable emission *de minimis* thresholds established by USEPA are summarized in Table 4.

Regulated under 40 CFR 93(b), the GCR also prohibits any department, agency, or instrumentality of the Federal Government from engaging in, providing financial assistance for, approving, or supporting any activity that does not conform to applicable SIP designated for areas being in nonattainment of established NAAQS. A SIP is a compilation of a state's air quality control plans and rules, approved by the USEPA, in an effort to reduce or eliminate the severity and number of NAAQS violations and achieve expeditious attainment of these standards.

4.6.5 Emission Sources

Current emission sources at FMMD are associated with staff and visitor vehicles, building HVAC, generators, water heaters, and routine grounds maintenance activities. However, there are currently no emissions sources at the Proposed Action project areas where the proposed barracks would be constructed and where the stormwater management pond would be retrofitted.

Table 4. General Conformity de minimis Threshold Values

Criteria Pollutant	Tons/year
40 CFR 93.153(b)(1) – For purposes of paragraph (b) of this section the following rates apply in nonattainment areas (NAAs):	
<i>Ozone (VOCs or NOx):</i>	
Serious NAA's	50
Severe NAA's	25
Extreme NAAs	10
Other ozone NAA's outside ozone transport region:	100
<i>Other ozone NAA's inside an ozone transport region:</i>	
VOC	50
NOx	100
Carbon Monoxide: All maintenance areas	100
SO ₂ or NOx: All NAA's	100
<i>PM10:</i>	
Moderate NAA's	100
Serious NAA's	70
<i>PM2.5 (direct emissions, SO₂, NOx, VOC, and Ammonia):</i>	
Moderate NAA's	100
Serious NAA's	70
Pb: All NAA's	25
40 CFR 93.153(b)(2) – For purposes of paragraph (b) of this section the following rates apply in maintenance areas:	
<i>Ozone (NOx), SO₂ or NO₃</i>	
All maintenance areas	100
<i>Ozone (VOCs)</i>	
Maintenance areas inside an ozone transport region	50
Maintenance areas outside an ozone transport region	100
Carbon monoxide: All maintenance areas	100
PM10: All maintenance areas	100
PM2.5 (direct) emissions: SO ₂ , NOx, VOC, and ammonia	100
All maintenance areas	100
Pb: All maintenance areas	25

4.6.6 Sensitive Receptors

CEQ NEPA regulations require evaluation of the degree to which the Proposed Action affects public health (40 CFR 1508.27). Children, elderly people, and people with illnesses are especially sensitive to the effects of air pollutants; therefore, hospitals, schools, convalescent facilities, and residential areas are considered to be sensitive receptors for air quality impacts, particularly when located within one mile from the emissions source. FMMD houses religious institutions, residential areas, one ambulatory care center, seven schools, Child and Youth Services Centers and four Child Development Centers. There are several sensitive receptors, including other hospitals, schools, religious institutions, and elderly and childcare facilities within one mile of FMMD. Within the vicinity of the Proposed Action there is a chapel located nearby on 6th Armored Cavalry Road and the existing Freedom Barracks 200 feet to the north.

4.7 WATER RESOURCES

4.7.1 Surface Water

FMMD is located within the greater Chesapeake Bay watershed. The Chesapeake Bay is North America's largest and most biologically diverse estuary, home to more than 3,600 species of plants, fish, and animals (Chesapeake Bay Project, 2000). To protect and restore this valuable ecosystem, Maryland joined a consortium of state and federal agencies to establish the Chesapeake Bay Program partnership. The Army's conservation mission supports the Chesapeake Bay Programs, and FMMD is implementing Best Management Practices (BMPs) that support the guidelines established by the partnership.

FMMD lies almost entirely within the Little Patuxent River watershed (MD watershed code number 02131105) of the Patuxent River Basin. A very small area in the northeast corner of the Post drains to the Severn River. The Patuxent River is approximately two miles from FMMD and drains an area of 932 square miles before emptying into the Chesapeake Bay on the western shore and is designated a "scenic river" under the Maryland Scenic and Wild Rivers Act of 1968. The Act mandates the preservation and protection of natural values associated with each designated river, and state and local governments are required to take whatever actions necessary to 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. Impairments include sediments, metals (cadmium) and biological. As Total Maximum Daily Loads (TMDLs) for these impairments are developed, facilities could be impacted by requirements for reducing loads in the watershed.

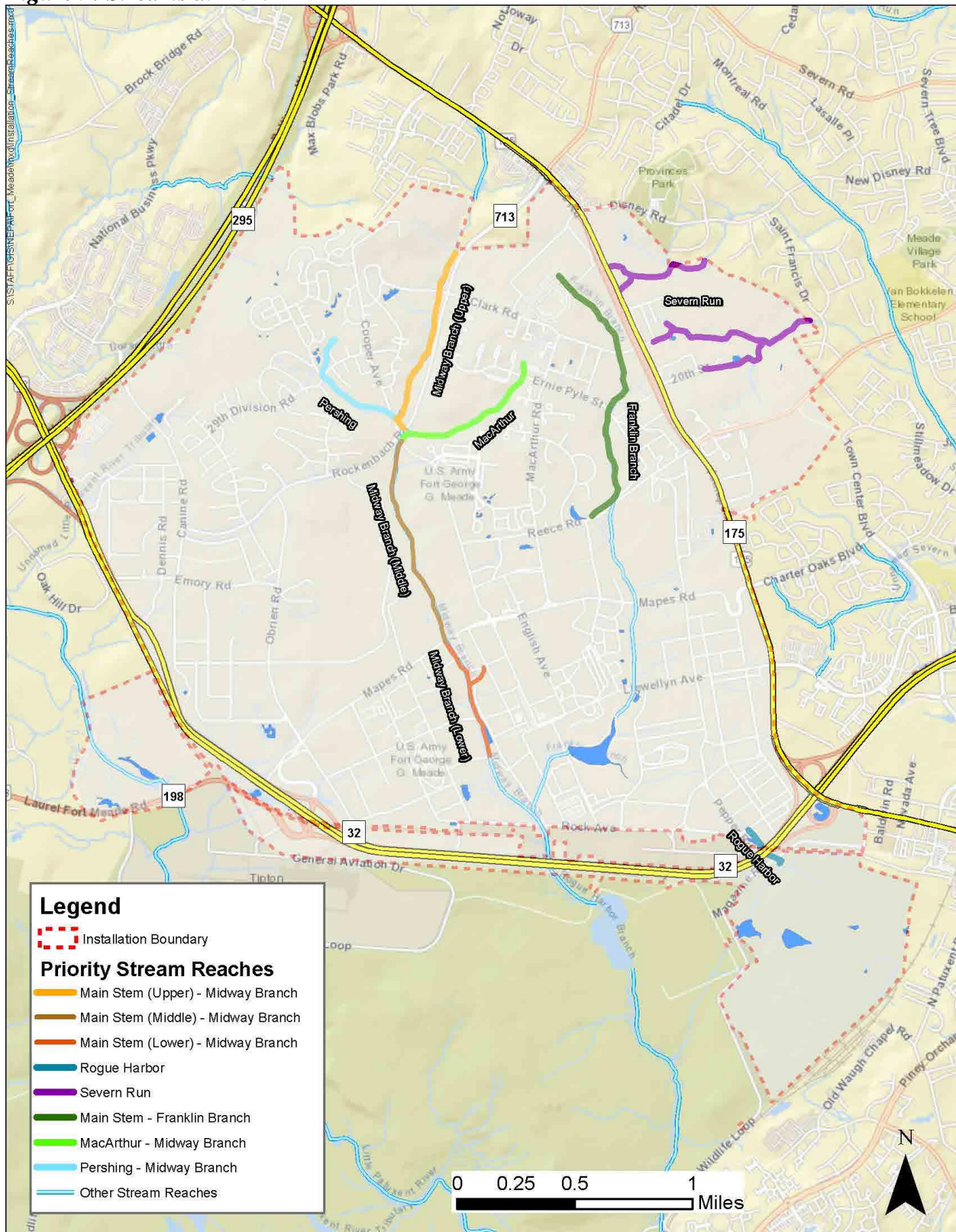
FMMD contains approximately 7.2 miles of perennial streams as well as other intermittent and ephemeral channels. The major water resources on FMMD are Burba Lake and the Midway Stream Branch along with its primary tributary, the Franklin Branch, both of which are tributaries of the Little Patuxent River (*Figure 9*). The majority of FMMD is drained by Midway Branch, which flows for the entire length of Fort Meade from the northern end to the southern end, then confluences with the Little Patuxent River off-site. Franklin Branch flows onto the post from the northern end, continues through Burba Lake (an 8.2-acre man-made lake), and confluences with Midway Branch. The nearest portion of the Proposed Action Phase I site area (the intersection of Dutt and Taylor Roads) is approximately 850 feet to the west of the southern portion of Midway Branch. The eastern berm of the SWM pond is approximately 525 feet west from Midway Branch.

Riparian buffers were incorporated into the FMMD Comprehensive Expansion Management Plan and subsequent Base Realignment and Closure (BRAC) projects to minimize impacts and degradation to waterbodies leading to the Chesapeake Bay. FMMD maintains a voluntary 100-foot riparian forest buffer along streams and abutting wetlands to the maximum extent practical.

FMMD has approximately 217 acres of wetlands, most of which occur along the Little Patuxent River floodplain in the southwestern portion of the post and along Midway Branch, Franklin Branch, and their tributaries. There are also several stormwater management features, particularly ponds, throughout FMMD. The SWM pond to be retrofit under the Proposed Action is located to the east of the intersection at Dutt Road and Taylor Avenue. (The SWM pond is identified as the oblong feature outlined to the east of the Phase I barracks site on *Figure 10*.) Wetland resources at FMMD are described in Section 4.7.6.

The USACE Clean Water Act implementing regulations, at 33 CFR Section 328.3 (b)(6), state that the following are not "waters of the United States" even where they otherwise meet the terms of paragraphs (a)(4) through (8) of this section: "stormwater control features constructed to convey, treat, or store stormwater that are created in dry land." The SWM pond appears to fall under this exemption, however, FMMD would be required to consult with USACE to verify the jurisdiction of the wetlands and waters and to determine whether or not a Department of the Army (DA) permit is necessary.

Figure 9: Streams at FMMD



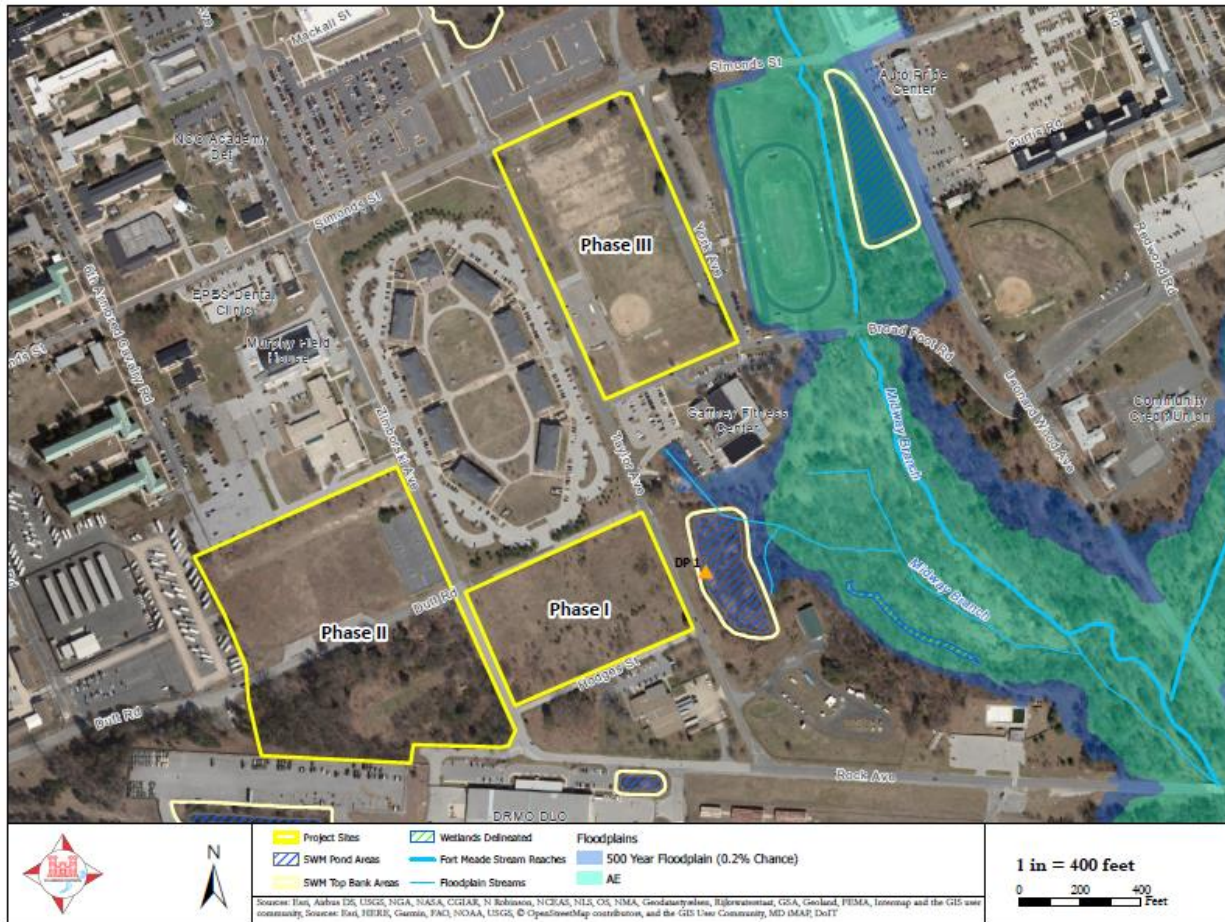
4.7.2 Floodplains

EO 11988, *Floodplain Management*, requires federal agencies to determine whether a Proposed Action would occur within a floodplain. The determination of whether a Proposed Action occurs within a floodplain typically involves consultation of appropriate Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), which contain enough general information to determine the relationship of the project area to nearby floodplains. EO 11988 directs federal agencies to avoid floodplains unless the agency determines that there is no practicable alternative to undertaking the action in a floodplain. Where the only practicable alternative is to site in a floodplain, a specific step-by-step process must be followed to comply with EO 11988. President Obama issued an EO entitled *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input* on January 30, 2015. This new EO was issued "... to improve the resilience of communities and federal assets against the impact of flooding" and includes amendments to EO 11988. One of the amendments regards the definition of a floodplain. Instead of establishing the floodplain based on the area subjected to a one percent or greater chance in any given year, the floodplain shall be:

- the elevation and flood hazard area that result from using a climate-informed science approach that uses the best-available, actionable hydrologic and hydraulic data and methods that integrate current and future changes in flooding based on climate science. This approach would also include an emphasis on whether the action is a critical action as one of the factors to be considered when conducting the analysis;
- the elevation and flood hazard area that result from using the freeboard value, reached by adding an additional two feet to the base flood elevation for non-critical actions and by adding an additional three feet to the base flood elevation for critical actions;
- the area subject to flooding by the 0.2% annual chance flood; or
- the elevation and flood hazard area that result from using any other method identified in an update to the Federal Flood Risk Management Standard.

A flood zone area is an area that FEMA has defined according to varying levels of flood risk. These zones are depicted on a community's or county's FIRM or Flood Hazard Boundary Map. Each zone reflects the severity or type of flooding in the area. Examples of flood zones include the 1-percent-annual-chance flood hazard area (this is also known as a 100-year flood event) and the 0.2-percent-annual-chance flood hazard area (this is also known as a 500-year flood event). The U.S. Army Corps of Engineers (USACE) conducted a floodplain study in 2008 to map areas along the streams on FMMD. For this investigation, areas with a drainage area of greater than 1-square mile within the FMMD boundaries were included in the hydrologic, hydraulic, and digital floodplain mapping efforts. This included all of Midway Branch within the FMMD boundaries and the majority of Franklin Branch. Locations on Franklin Branch with drainage areas less than 1-square mile were included in this investigation because of the amount of development along this flooding source (USACE 2008). Floodplains at the Proposed Action area are depicted in **Figure 10**.

Figure 10. Floodplains at the Project Area



4.7.3 Groundwater

The Patuxent, Upper Patapsco, and Lower Patapsco aquifers lie under the FMMD property (FMMD 2004). 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 feet thick and is the deepest of the three aquifers beneath FMMD. The Upper Patapsco Aquifer is unconfined and is considered the water table aquifer. FMMD is served by a potable water utility that holds a Water Appropriation and Use Permit from MDE for extraction of groundwater.

4.7.4 Coastal Zone Management

The Coastal Zone Management Act (CZMA) of 1972 (16 USC §1451, et seq., as amended) provides assistance to states in cooperation with federal and local agencies, for developing land and water use programs in the coastal zone. CZMA policy is implemented through state coastal zone management programs. Federal lands are excluded from the jurisdiction of these state programs. However, activities on federal lands are subject to CZMA federal consistency requirements if the federal activity would affect any land or water or natural resource of the coastal zone, including reasonably foreseeable effects. Specifically, in accordance with Section 307 of the CZMA and 15 CFR 930 subpart C, federal agency activities affecting a land or water use or natural resource of a State's coastal zone must be consistent to the maximum extent practicable with the enforceable policies of the State's coastal management program.

According to 15 CFR 930.41, the reviewing state has 60 days from receipt of the Consistency Determination to “concur” or “object.” States are not required to concur with a Negative Determination. However, if a response from the state is not received by the 60th day of submittal (unless a one-time extension was requested), the federal agency may presume state agency concurrence. Additionally, 15 CFR 930.43 provides that should a state object to a Consistency Determination, the state and federal agencies should attempt to resolve their differences. However, if no resolution can be met, the federal agency may proceed if federal law prohibits the agency from being fully consistent or if that federal agency has concluded that its Proposed Action is fully consistent with the enforceable policies of the management program, though the state agency objects. If a federal agency decides to proceed with a federal agency activity that is objected to by a state agency, or to follow an alternative suggested by the state agency, the federal agency shall notify the state agency of its decision to proceed before the project commences.

All of FMMD is located within Maryland’s Coastal Zone, and therefore subject to regulations pursuant to Maryland’s Coastal Zone Management (CZM) Program. This includes the Chesapeake Bay, into which water from streams and their tributaries on FMMD flow. MDE regulates activities that are proposed within the CZM Program through federal consistency requirements. Under these requirements, applicants for federal and state licenses or permits must certify their proposed activity will be conducted in a manner consistent with the State’s CZM Program. A Coastal Zone Consistency determination has been prepared for this project. If a state permit is not required for a project, MDE has the authority to “concur” or “object” to the federal consistency determination.

4.7.5 Stormwater

Stormwater run-off at FMMD is conveyed to the three primary drainages, with the majority of stormwater run-off carried by Midway and Franklin Branches. All the natural drainages discharge into the Little Patuxent River, which ultimately drains into Chesapeake Bay. Run-off from developed areas at FMMD is conveyed through an extensive network of drainpipes and associated drainage structures, supplemented by swales, ditches, other drains, and retention ponds (FMMD 2005). In recent years, FMMD has followed federal and MDE environmental site design standards for development. Additionally, FMMD has a Stormwater Management Plan and employs a number of stormwater management initiatives, including low impact development, to manage stormwater. Some examples of these include creating rain gardens, replacing concrete storm drains with grass swales, installing tree box filters, and creating stormwater retention ponds.

The SWM pond that would be retrofitted under this Proposed Action was designed in the mid-1990s. Historical aerial photos indicate that the SWM area was constructed in uplands. This is further supported by the soil mapping of the area, which shows Patapsco-Fort Mott-Urban land complex (non-hydric soil) within the majority of the SWM footprint, with a section mapped as Zekiah and Issue soils in the northeastern portion of the SWM. Additionally, a 2019 bathymetry survey of SWM facilities throughout FMMD indicate that there is excess siltation within the SWM pond resulting from a lack of routine maintenance.

The SWM pond area is separated from the Midway Branch floodplains by a constructed berm with steep slopes dominated by upland vegetation. An outfall on the eastern side of the SWM pond, which drains stormwater from the SWM into the adjacent floodplain, has shown evidence of beaver activity (as seen in **Figure 13**), which may be impacting outfall flow and subsequent siltation of the SWM pond area. Felled trees in the area of the SWM pond are also indicative of beaver activity.

Figure 11. View of SWM Area



Figure 12. Aerial View of SWM East of Taylor Avenue

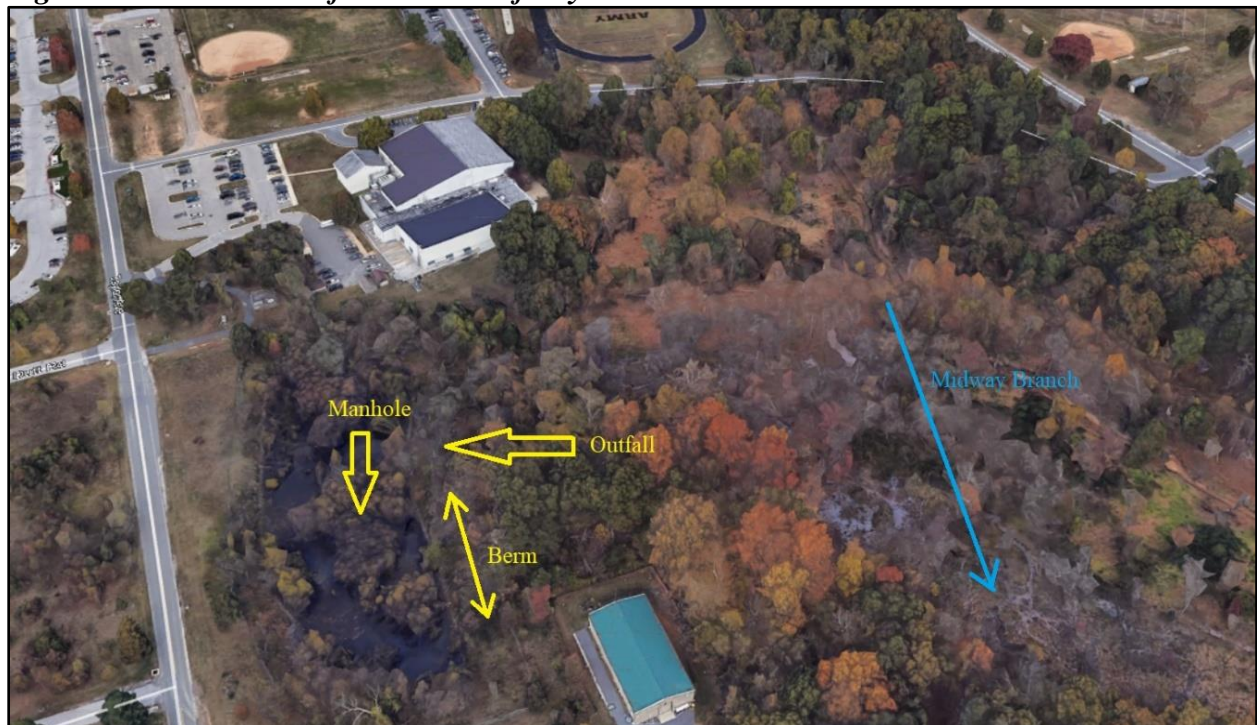


Figure 13. Evidence of Beaver Activity within the SWM Outfall Structure



4.7.5.1 Code of Maryland Stormwater Regulations

Provisions of Code of Maryland Regulations (COMAR) 26.17.02.01 (*Maryland Department of the Environment, Water Management, Purpose and Scope*) require that all jurisdictions in Maryland implement a stormwater management program to control the quality and quantity of stormwater run-off resulting from new development. The regulations state:

The primary goals of the State and local stormwater management programs are to maintain after development, as nearly as possible, the predevelopment run-off 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 best management practices only when necessary.

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. These provisions specify 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.

These provisions apply to all new development and redevelopment projects that do not have final approval for erosion and sediment control and stormwater management plans by May 4, 2010.

COMAR Title 26.17.02.05 (*When Stormwater Management is Required*) exempts any developments that do not disturb over 5,000 square feet of land area or 100 Cubic Yard (CY) of earth. Conversely,

developments disturbing over 5,000 square feet of land or 100 CY of earth require stormwater management. The Stormwater Management Plan requirements are outlined in COMAR 26.17.02.09 and all three phases of the project, individually, are expected to exceed 5,000 square feet (SF) in size.

Environmental Site Design (ESD) requires a developer to demonstrate that all reasonable opportunities for meeting stormwater requirements using ESD have been exhausted. This is achieved by using natural areas and landscape features to manage run-off from impervious surfaces, and that structural BMPs have been used only where absolutely necessary. The 2015 Stormwater Management Guidelines for State and Federal Projects would be implemented to the maximum extent technically feasible for the Proposed Action.

FMMD maintains a Stormwater Pollution Prevention Plan that provides BMPs for controlling and preventing siltation and contaminants associated with construction and industrial activity sites from reaching area surface waters.

4.7.5.2 Energy Independence and Security Act of 2007

Section 438 of EISA instructs federal agencies to "use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate," for any project with a footprint that exceeds 5,000 square feet. All three phases of the project, individually, are expected to exceed 5,000 square feet (SF) in size. However, the COMAR stormwater management regulations are more stringent and therefore supersede Section 438 of EISA.

4.7.5.3 Municipal Separate Storm Sewer System (MS4) Phase II

The FMMD, Environmental Division, Stormwater Program is required to meet the Municipal Separate Storm Sewer System (MS4) Phase II permit requirements for the treatment of approximately 200 acres of impervious surface. FMMD would also comply with the MS4 Phase II State and Federal permit which obligates minimum control measures for construction and post-construction run-off control.

The FMMD Stormwater Program's goal is to meet MS4 permit requirements by using stream restoration for TMDL wasteload reductions that result in impervious surface acreage equivalent credits. Projects are designed to improve degraded urban stream systems by providing for functional (stream mechanics) and biological lift (abundance/diversity of organisms).

The FMMD Environmental Division is currently planning the restoration of eight priority stream reaches on the post. New BMPs and BMP retrofits are all part of the restoration plan. The Stormwater and Natural Resource Programs have shared interest for meeting regulatory requirements and providing ecosystem benefits. The approach has been to assess the restoration potential for select streams and apply means and methods to the maximum ecological extent practical to meet programmatic goals. The Stream Functions Pyramid Framework and the USEPA Chesapeake Bay – Stream Restoration Expert Panel Protocols are used to accomplish this goal.

4.7.6 Wetlands

Wetlands are protected under the Clean Water Act (CWA). Jurisdictional wetlands are those wetlands subject to regulatory protection under Section 404 of the CWA and EO 11990 for Protection of Wetlands.

USACE defines wetlands as "those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (33 CFR Part 328). Important wetland functions include water quality improvement, groundwater recharge and discharge, pollution mitigation, storm water attenuation and storage, sediment detention, and erosion protection.

FMMD has approximately 217 acres of wetlands, most of which occur along the Little Patuxent River floodplain in the southwestern portion of FMMD and along Midway Branch, Franklin Branch, and their tributaries, as depicted in Figure 10.

Most of the wetlands on FMMD are palustrine forested (typically includes sweetgum, red maple, white oak, tulip tree, loblolly pine, tupelo, blueberry) along the Little Patuxent River and in the northwestern portion of FMMD. Smaller areas of wetland within FMMD include palustrine emergent and palustrine scrub shrub.

Consultation with the USFWS was initiated on November 13, 2020. USFWS requested that wetlands, if any, be identified at the Proposed Action site. Accordingly, USACE Baltimore District performed a survey for wetlands at the site. The findings, presented in internal project site reports, indicate that there are no wetlands on any of the proposed barracks building sites (a copy of the site report is provided in Appendix A). However, there are wetlands located east of the SWM pond area (see Figure 5). Further east of the SWM pond area is the 100- and 500-year floodplain. There is a stormwater discharge outfall from the SWM to the wetlands (FMMD 2020). There are no other wetland areas classified by the National Wetlands Inventory or Maryland Department of Natural Resources within the Proposed Action area.

4.8 BIOLOGICAL RESOURCES

Biological resources include native or naturalized plants and animals and the habitats (e.g., wetlands, forests, and grasslands) in which they live. Protected biological resources include plant and animal species listed by the State of Maryland as rare, threatened, or endangered or by the USFWS as threatened or endangered. Special concern species are not afforded the same level of protection, but their presence is taken into consideration by resource agency biologists involved in reviewing projects and permit applications.

4.8.1 Vegetation

Vegetative cover at FMMD consists of forestland, open land/meadow, and developed areas with maintained turf and street trees. These components constitute FMMD's green infrastructure. Maryland's green infrastructure was mapped into hubs and corridors using satellite imagery, road and stream locations, biological data, and other information. Hubs are typically unfragmented forest areas hundreds or thousands of acres in size and are vital to maintaining the state's ecological health. They provide habitat for native plants and animals, protect water quality and soils, regulate climate, and perform other critical functions. Corridors are linear remnants of natural land such as stream valleys and mountain ridges that allow animals, seeds, and pollen to move from one area to another. They also protect the health of streams and wetlands by maintaining adjacent vegetation. Preserving linkages (corridors) between the remaining blocks of habitat (hubs) would ensure the long-term survival and continued diversity of Maryland's plants, wildlife, and environment. FMMD maintains both green infrastructure hubs and corridors.

Less than one-third, or approximately 1,500 acres, of the FMMD property is forested. Many native forests were cleared prior to the formation of FMMD for agriculture. Larger remaining forested tracts are located towards the perimeter of FMMD. Many of these larger tracts are connected by riparian forest corridors. Larger tracts are around 70 years old, but some stands predate the post. Development at FMMD has resulted in forest fragments and recently reforested areas.

As described in the Integrated Natural Resources Management Plan (INRMP), extensive development has resulted in the retention of few areas of native vegetation at FMMD, most of which are associated with stream corridors (FMMD 2004). The largest wooded area at FMMD is in the southwest corner and is associated with the Little Patuxent River. The dominant vegetation in this area is red maple (*Acer rubrum*), sweet gum (*Liquidambar styraciflua*), black gum (*Nyssa sylvatica*), northern arrowwood (*Viburnum recognitum*), Japanese honeysuckle (*Lonicera japonica*), greenbriar (*Smilax rotundifolia*), and poison ivy (*Toxicodendron radicans*).

As stated in the INRMP, smaller wooded areas are scattered throughout FMMD in the uplands (FMMD 2004). They are dominated by white, red, and chestnut oak (*Quercus alba*, *Q. rubra*, *Q. prinus*); mockernut and pignut hickory (*Carya tomentosa* and *C. glabra*); flowering dogwood (*Cornus florida*); blueberry (*Vaccinium corymbosum*); greenbriar; loblolly and pitch pine (*Pinus taeda* and *P. rigida*); and poison ivy.

Most of the developed portions of FMMD have been landscaped using a combination of turf grasses interspersed with native and exotic trees and shrubs, including elm (*Ulmus* sp.), maple (*Acer* sp.), flowering cherry (*Prunus* sp.), black willow (*Salix nigra*), flowering dogwood, and an assortment of holly cultivars (*Ilex* sp.) (FMMD 2004).

A tree survey of the project sites was conducted by USACE Baltimore District in October 2020 in which a study area of approximately 7 acres in size was identified south of Dutt Road. A specimen tree is defined as greater than 30-inches diameter at breast height (dbh) for hardwoods, and 25-inches dbh for conifers. Thirty-one (31) specimen trees were documented during the survey, with two large, but non-specimen-sized pin oaks (*Quercus palustris*) within the boundary of Phase I, twenty-six (26) trees within the boundary of Phase II, and three (3) trees within close proximity to the western boundary of Phase II (Enclosure 2). A total of eight species of specimen trees were observed, which, in order of dominance, included southern red oak (*Quercus falcata*), white oak (*Q. alba*), black oak (*Q. velutina*), American beech (*Fagus grandifolia*), chestnut oak (*Q. montana*), pin oak (*Q. palustris*), Virginia pine (*Pinus virginiana*), and loblolly pine (*P. taeda*) (Table 5).

Although the distribution of specimen trees in the Phase II lot was somewhat random, the majority occurred in the northern and eastern sections of the forested areas. Oak species were the predominant species of specimen tree upon entering the eastern gate, with two beech trees in the northwest corner of the forested area. Two Virginia pines were also found in the northern section of Phase II as well. The three trees adjacent to the western boundary of Phase II were loblolly pine, white oak, and American beech.

The understory consisted of dense brackets of poison ivy (*Toxicodendron radicans*) and the invasive multiflora rose (*Rosa multiflora*), particularly in the northeastern sections of the forested area. There was also an abundance of oak and beech saplings, as well as American sweetgum saplings (*Liquidambar styraciflua*). Several individuals of Virginia pine, sweetgum, and chestnut oak were also close to specimen size (i.e. > 24 inches). Other invasive species observed were Bradford pear (*Pyrus calleryana*) and oriental bittersweet (*Celastrus orbiculatus*). The obstacle course equipment was installed in the mid-2000s, and the forested areas around the equipment have grown dense with saplings and invasive species.

Figure 14. Wetlands Mapped at FMMD

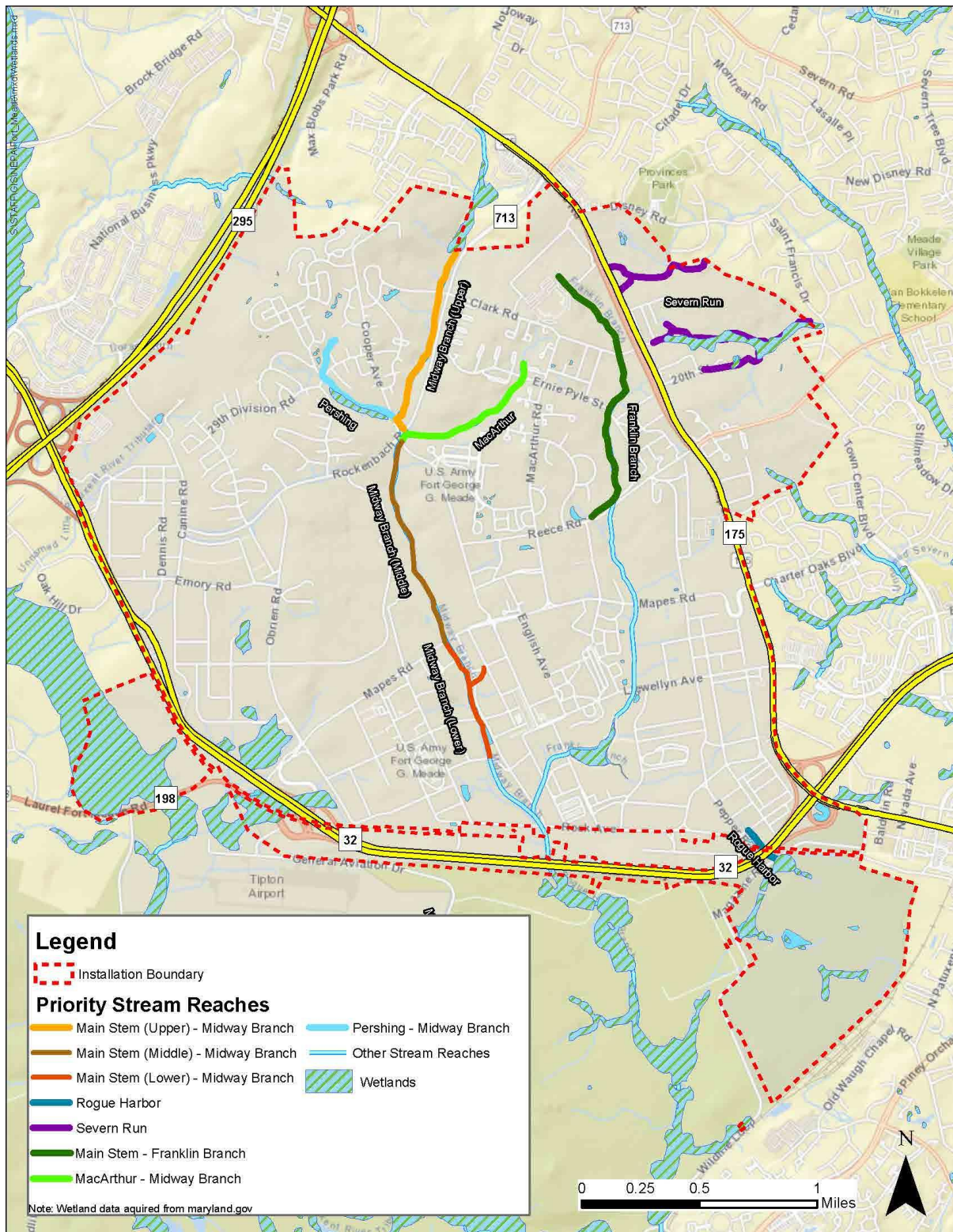


Table 5. FMMD Barracks Phase I, II, and III Site Investigation: Specimen Trees

Specimen ID	Scientific Name	Common Name	Diameter (inches)	Condition	Notes
ST-01	<i>Quercus palustris</i>	Pin oak	26	Very good	
ST-02	<i>Quercus palustris</i>	Pin oak	25	Good	Mild basal damage, one weep hole
ST-03	<i>Quercus falcata</i>	Southern red oak	33	Fair	Double trunk, one leader dead, #2538
ST-04	<i>Fagus grandifolia</i>	American beech	36	Poor	Double trunk, basal damage, good crown, included bark
ST-05	<i>Fagus grandifolia</i>	American beech	43	Very poor	Hazard tree, imminent to fall on fence/Zimborski Rd.
ST-06	<i>Quercus alba</i>	White oak	38	Good	
ST-07	<i>Quercus falcata</i>	Southern red oak	40	Good	
ST-08	<i>Quercus falcata</i>	Southern red oak	35	Good	Double trunk, few dead laterals
ST-09	<i>Quercus velutina</i>	Black oak	34	Good	Double trunk, canopy leans to the south
ST-10	<i>Quercus falcata</i>	Southern red oak	41	Very good	
ST-11	<i>Pinus virginiana</i>	Virginia pine	25	Good	Slight lean to south, very tall
ST-12	<i>Fagus grandifolia</i>	American beech	33	Fair	Branch/trunk unions odd, basal damage, large crown, leaning with cracks, #2555
ST-13	<i>Quercus alba</i>	White oak	35	Good	Huge canopy
ST-14	<i>Quercus alba</i>	White oak	31	Very good	
ST-15	<i>Pinus virginiana</i>	Virginia pine	25	Good	Straight, slight lean
ST-16	<i>Quercus montana (prinus)</i>	Chestnut oak	32	Good	
ST-17	<i>Quercus velutina</i>	Black oak	32	Good	
ST-18	<i>Quercus alba</i>	White oak	32	Good	#2565
ST-19	<i>Quercus montana (prinus)</i>	Chestnut oak	36	Good/fair	
ST-20	<i>Quercus velutina</i>	Black oak	35	Fair/poor	Leaning, large split in upper trunk
ST-21	<i>Quercus falcata</i>	Southern red oak	30	Good	
ST-22	<i>Quercus montana (prinus)</i>	Chestnut oak	38	Fair	Double trunk, crown thin, few dead scaffold
ST-23	<i>Quercus alba</i>	White oak	34	Good	Double trunk
ST-24	<i>Quercus velutina</i>	Black oak	36	Fair	Double trunk, second trunk has fungus, covered in vines

Specimen ID	Scientific Name	Common Name	Diameter (inches)	Condition	Notes
ST-25	<i>Quercus falcata</i>	Southern red oak	33	Good	
ST-26	<i>Quercus falcata</i>	Southern red oak	31	Good	
ST-27	<i>Quercus velutina</i>	Black oak	35	Good	Large dead scaffold
ST-28	<i>Quercus falcata</i>	Southern red oak	40	Fair	Double trunk, 3rd large trunk broken off and hollow inside
ST-29	<i>Quercus alba</i>	White oak	30	Good	
ST-30	<i>Fagus grandifolia</i>	American beech	30	Poor	
ST-31	<i>Pinus taeda</i>	Loblolly pine	26	Good	Lean to south

4.8.1.1 Forest Conservation Act

It is the intent of FMMD to maintain a campus-like environment and conserve forested areas to the maximum extent practical in accordance with the Maryland Forest Conservation Act (FCA), while continuing to sustain and support current and future missions. This includes managing the FMMD forest conservation program in accordance with the 2013 Memorandum of Understanding (MOU) between the State of Maryland and the DoD concerning federal consistency requirements of the Coastal Zone Management Act.

Development and construction projects are required to follow the current FMMD FCA and Tree Management Policy. FMMD requires that the equivalent of 20% of a project area be forested. All projects of 40,000 square feet or larger, such as the Proposed Action, must comply with the FMMD policy. Other projects are evaluated on a case-by-case basis. Site developments must preserve or establish 20% forest cover, regardless of whether the site was forested before the construction. Generally, linear utility and road projects are only required to preserve or establish 20% of the forest cover removed for the actual project. Should existing forest mitigation areas require disturbance, the project proponent shall replace the existing mitigation area at a two to one (2:1) ratio above the required 20%. 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. Forestry practices that cannot feasibly be performed within the project area shall be performed on other designated land areas within FMMD.

FMMD participates in the Army's conservation reimbursable and fee collection program for forestry. This program exists to provide ecosystem-level management that supports and enhances the land's ability to support each post's respective military missionscape, while simultaneously obtaining ecologically responsible results that satisfy all federally mandated requirements for natural resources. Program revenues are generated through the sale of forest products. The fair market value of all forest products removed due to the Proposed Action shall be deposited into the Army's Reimbursable Forestry Account to be utilized for natural resource activities and ecosystem management at Army post.

4.8.2 Terrestrial Wildlife Resources

In 2013, Environmental Systems Analysis, Inc. (ESA 2014) conducted a study for fauna and wildlife populations, including breeding amphibians and a Burba Lake fisheries study. Most of the observed animal species are common to Anne Arundel County and the Central Maryland area. During the fauna study, a total of 13 bird and 11 mammal species were identified (**Table 6**). During the amphibian breeding study, 11 reptile and amphibian species were identified (**Table 7**). The species observed during the 2013 survey were very similar to those found during the 2009 flora and fauna survey performed by USACE (USACE 2009).

Table 6. Mammals and Birds Present at FMMD in 2013

Scientific Name	Common Name
<i>Odocoileus virginianus</i>	White-tailed deer
<i>Procyon lotor</i>	Raccoon
<i>Sciurus carolinensis</i>	Eastern gray squirrel
<i>Urocyon cinereoargenteus</i>	Gray fox
<i>Homo sapiens</i>	Human
<i>Didelphimorphia</i>	Opossum
<i>Lepus curpaeus</i>	Eastern cottontail
<i>Zenaida macroura</i>	Mourning dove
<i>Vulpes</i>	Red fox
<i>Anas platyrhynchos</i>	Mallard
<i>Butorides virescens</i>	Green heron
<i>Cardinalis</i>	Northern cardinal
<i>Agelaius phoeniceus</i>	Redwing blackbird
<i>Felis catus</i>	Domestic cat
<i>Cyanocitta cristata</i>	Eastern blue jay
<i>Quiscalus quiscula</i>	Common grackle
<i>Passeridae sp.</i>	Sparrow
<i>Fringillidae sp.</i>	Finch
<i>Branta canadensis</i>	Canada goose
<i>Corvus brachyrhynchos</i>	American crow
<i>Marmota monax</i>	Groundhog
<i>Species unknown</i>	Mouse
<i>Dumetella carolinensis</i>	Gray catbird
<i>Turdus migratorius</i>	American robin

Table 7. Reptiles and Amphibians Present at FMMD in 2013

Scientific Name	Common Name
<i>Pseudacris crucifer</i> (frog)	Spring peeper
<i>Lithobates clamitans</i> (frog)	Green frog
<i>Lithobates sylvatica</i> (frog)	Wood frog
<i>Acris crepitans</i> (frog)	Eastern cricket frog
<i>Lithobates sphenoccephalus</i> (frog)	Southern leopard frog
<i>Anaxyrus americanus</i> (toad)	American toad
<i>Ambystoma opacum</i> (salamander)	Marbled salamander
<i>Ambystoma maculatum</i> (salamander)	Spotted salamander
<i>Terrapene carolina</i> (turtle)	Eastern box turtle
<i>Chelydra serpentina</i> (turtle)	Common snapping turtle
<i>Plestiodon fasciatus</i> (lizard)	Common five-lined skink

4.8.3 Rare, Threatened, or Endangered (RTE) Species

Under the Endangered Species Act (ESA), an “endangered species” is defined as any species in danger of extinction throughout all or a significant portion of its range. A “threatened species” is defined as any species likely to become an endangered species in the foreseeable future. The ESA also provides for recovery plans to be developed describing the steps needed to restore a species population. Critical habitat for federally listed species includes “geographic areas on which are found those physical or biological

features essential to the conservation of the species and which may require special management considerations or protection.” Critical habitat can include areas not occupied by the species at the time of the listing but that are essential to the conservation of the species. The Sikes Act provides for cooperation by the Department of the Interior and DoD with State agencies in planning, development, and maintenance of fish and wildlife resources on military reservations throughout the United States.

On FMMD there are 8 species listed as either endangered, threatened or candidate species under the auspices of the ESA (*Table 8*).

Table 8. Federally Listed Species that Occur or May Occur on FMMD

Common Name	Scientific Name	Federal listing	Maryland State listing	Installation Presence
Northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened	Threatened S1	Present, but Transient (Acoustic only)
Indiana bat	<i>Myotis sodalis</i>	Endangered	Endangered S1	Present, but Transient (Acoustic only)
Tricolored Bat	<i>Perimyotis subflavus</i>	Under Review (Candidate)	Endangered S1	Present, but Transient (Acoustic only)
Wood Turtle	<i>Glyptemys insculpta</i>	Under Review (Candidate)	Vulnerable S3	Known presence ¹
Spotted Turtle	<i>Clemmys guttata</i>	Under Review (Candidate)	Vulnerable S3	None known, Occurs on a neighboring parcel
Rusty Patch Bumble Bee	<i>Bombus affinis</i>	Endangered	SH	Historic-locally extirpated
Little Brown Bat	<i>Myotis lucifugus</i>	Under Review (Candidate)	Critically imperiled S1	Known presence
Monarch	<i>Danaus plexippus</i>	Under Review (Candidate)	Secure S5B	Present

Notes:

1 - A single individual was found near Burba Lake that may have been a pet release. Surveys are ongoing to determine if a population exists at FMMD.

The presence of one threatened species (Northern Long-eared Bat (NLEB)) and one endangered species (Indiana Bat) have been acoustically detected on FMMD. No hibernaculum or summer roost trees have been identified on FMMD or in Anne Arundel County, MD. Tree clearing for this project may be coordinated with USFWS through the FMMD Department of Public Works (DPW) Environmental Division and may be subject to restrictions during the NLEB pup season (1 June to 31 July).

As of April 2, 2015, the NLEB was listed as a federally threatened species under the ESA, due largely to the impacts of white-nose syndrome. FMMD lies within the eastern range of the NLEB and contains suitable habitat, mixed hardwood forests over three inches diameter at breast height, for summer roost trees. USFWS signed a Programmatic Biological Opinion (BO) 5 January 2016 on the Final 4(d) Rule that addresses effects to the NLEB by federal actions and provides for a streamlined Section 7 consultation. USFWS has not yet designated critical habitat for NLEB.

Indiana bats (*Myotis sodalist*) were listed for protection under the ESA in 1967 and are currently listed as endangered. Indiana bats live in the forests and caves of the Northeast and Southeast, but primarily in the Midwest. The bats congregate in winter and summer colonies, migrating between the two sites in the spring and fall. These bats live in wooded or semi-wooded areas during the summer and form maternity colonies

and roosts in dead standing trees. Indiana bats forage along river and lake shorelines, in the crowns of trees in floodplains, and in upland forests consuming primarily flying insects.

An RTE plant species survey was performed at FMMD in 2013 by EEE Consulting, Inc. (EEE Consulting, Inc. 2014). No federally-listed plants were documented on FMMD.

4.8.4 State-Listed Species

State-listed species are not protected under the ESA; however, whenever feasible, FMMD cooperates with State authorities in an effort to identify and conserve state-listed species. The state-listed faunal species that have been detected on FMMD include the glassy darter (*Etheostoma vitreum*), American brook lamprey (*Lethenteron appendix*), coastal plain swamp sparrow (*Melospiza georgiana nigrescens*) and Northern waterthrush (*Parkesia noveboracensis*). Findings from a 2013 study for fauna and wildlife populations (ESA 2014) provided updates on the glassy darter (*Etheostoma vitreum*). The glassy darter was observed and documented in previous fish surveys conducted on FMMD, from 1992 through 2004. The glassy darter has been identified as occurring at FMMD, within the 9500 Tract of the Little Patuxent River, and immediately downstream and off-site of FMMD.

Three state-listed floral species have been detected on FMMD. These include blunt-lobe grapefern (*Sceptridium oneidense*), Torrey's rush (*Juncus torreyi*), and partridge pea (*Chamaecrista fasciculata* var. *macrosperma*), and one state-wide extirpated species, spotted Joe-pye-weed (*Eutrochium maculatum*). During the 2013 RTE plant species survey, two of the previously identified state-listed RTE species were found: American chestnut (*Castanea dentata*) and dwarf azalea (*Rhododendron atlanticum*) (EEE Consulting, Inc. 2014). One Maryland Watch List plant, pearly everlasting (*Anaphalis margaritacea*), was found within the Firing Range Powerline and the Range Road Corridor; and one Maryland State Rare/Watch List plant, tall swamp marigold (*Bidens coronata*), was found within the Firing Range Powerline.

4.8.5 Aquatic Habitat

Water bodies that flow through FMMD provide habitat for several aquatic organisms (USACE, 2007). Over two dozen species of fish are known to occur on FMMD, including, but not limited to, the creek chubsucker (*Erimyzon oblongus*), eastern mudminnow (*Umbra pygmaea*), tessellated darter (*Etheostoma olmstedii*), American brook lamprey (*Lampetra appendix*), American eel (*Anguilla rostrata*), smallmouth bass (*Micropterus dolomieu*), largemouth bass (*Micropterus salmoides*), glassy darter (*Etheostoma vitreum*), redbreast sunfish (*Lepomis auritus*), bluegill (*Lepomis macrochirus*), and pumpkinseed (*Lepomis gibbosus*).

A total of five species and 422 fish were collected as part of the 2013 Burba Lake survey effort (ESA 2014). The most abundant species collected was bluegill (*Lepomis macrochirus*), followed by green sunfish (*Lepomis cyanellus*), red ear sunfish (*L. microlophus*), mosquito fish (*Gambusia affinis*), and largemouth bass (*Micropterus salmoides*), in descending order of abundance.

Currently there is no aquatic organism connectivity at the lower reach of Franklin Branch due to sediment aggregation and blockages.

4.9 CULTURAL RESOURCES

Cultural resources can include prehistoric and historic sites, structures, districts, or any other physical evidence of human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or any other reason. Depending on their condition and use, these resources can provide insight into the living conditions of previous existing civilizations, or retain cultural and religious significance to modern groups, referred to as Traditional Cultural Properties.

Archaeological resources are locations where prehistoric or historic activity measurably altered the earth or produced deposits of physical remains. Architectural resources include standing buildings, districts,

bridges, dams, and other structures of historic significance. Traditional cultural properties include locations of historic occupations and events, historic and contemporary sacred and ceremonial areas, prominent topographical areas that have cultural significance, traditional hunting and gathering areas, and other resources that Native Americans or other groups consider essential for the persistence of their traditional culture.

Several federal laws and regulations have been established to manage cultural resources. Cultural resources are “historic properties” as defined by the National Historic Preservation Act (NHPA) of 1966, “cultural items” as defined by the Native American Graves Protection and Repatriation Act of 1979 (NAGPRA), “archaeological resources” as defined by ARPA, “sacred sites” as defined by EO 13007 to which access is afforded under the American Indian Religious Freedom Act of 1987 (AIRFA), and collections and associated records as defined in 36 CFR 79. In order for a cultural resource to be considered significant, it must meet one or more of the following criteria for inclusion on the National Register of Historic Places (NRHP):

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and: 1) that are associated with events that have made a significant contribution to the broad patterns of our history; or 2) that are associated with the lives or persons significant in our past; or 3) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or 4) that have yielded, or may be likely to yield, information important in prehistory or history.

The NHPA, as amended, as well as Federal legislation, and Department of Defense regulations (particularly Army Regulation 200-1, *Environmental Protection and Enhancement*), requires the Army and other Federal agencies to locate, identify, evaluate, and treat cultural resources under their ownership, administration, and control in a manner that fosters the preservation of the resources.

The most recent Integrated Cultural Resources Management Plan (ICRMP) for FMMD was preliminarily finalized in March 2020 by USACE, Baltimore District (USACE 2020) as an update to the existing 2011 ICRMP and is currently undergoing revision. The new ICRMP covers the period from 2018 through 2022 and provides guidelines and procedures to enable FMMD to meet its legal responsibilities related to historic preservation and cultural resources management at FMMD.

The entirety of FMMD has undergone Phase I-level archaeological investigations for the presence of archaeological resources, therefore no new archaeological fieldwork was completed for the 2020 ICRMP which is currently being updated.

4.9.1 Buildings

Previous investigations identified and evaluated all buildings located on FMMD that were built prior to 1960 for NRHP eligibility. The Base Realignment and Closure Act of 2005 led to a variety of construction actions, which required cultural resource reviews and some field investigations; however, no new cultural resources were identified during these projects.

Twenty-four buildings were evaluated for NRHP eligibility from 2015 to 2018 and draft forms submitted to the Maryland Historical Trust (MHT) for their concurrence. The Maintenance Guidelines for the Historic District were updated in 2018. FMMD also did an exhaustive review of their complete building inventory from 2017 to 2018 to confirm which buildings had been evaluated for the NRHP and found ineligible, with clear concurrence from the MHT. Twenty-three buildings were then evaluated in 2019 as part of the effort to clear up any discrepancies between MHT and FMMD’s records.

4.9.2 Historic Properties

There are no buildings on FMMD that are listed in the NRHP. FMMD has five historic properties that have been determined eligible for listing in the NRHP. The historic architectural properties are the Fort Meade Historic District, three bridges/culverts built by German POWs during WWII, and the water treatment plant (Building 8688). There are 13 contributing buildings in the Fort Meade Historic District, none of which are near the Proposed Action. In 2003, ownership and management of 113 historic family housing units were transferred to a private, non-Federal entity, as part of the 1996 Military Housing Privatization Initiative.

4.9.3 Culverts

A portion of the southwestern area of FMMD was utilized as a POW camp during WWII. The first group of POWs, consisting of 1,632 Italian and 58 German soldiers, arrived at FMMD in September of 1943. In May 1944, the FMMD POW camp was expanded to house 2,000 German POWs. In 1944, the German POWs began operating the laundry at FMMD and may have been involved in conducting maintenance and repair work in the military family housing residences on FMMD. Additionally, German POWs constructed three culverts at FMMD, all of which were designed by the USACE. The culverts are located at stream crossings on Llewellyn, Redwood, and Leonard Wood Avenues where they cross over Franklin Branch Creek. These culverts are among the few tangible reminders of the POW presence at FMMD and in Maryland during WWII. None are in the Proposed Action area.

4.9.4 Archaeological Sites

There are 41 known archaeological sites on FMMD, but none are listed in the NRHP. All the sites have been evaluated for NRHP eligibility and only one site, 18AN1240, was found to be eligible. Thirty-three other sites have been evaluated for NRHP eligibility and were found ineligible. The remaining seven sites are historic cemeteries, which were evaluated in the 2007 ICRMP update and found to be ineligible for the NRHP, although they will be maintained due to the presence of buried human remains and recommended for avoidance. None of these sites are in the area of the Proposed Action.

4.10 HAZARDOUS, TOXIC, AND RADIOACTIVE SUBSTANCES

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 U.S. 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 CAA.

The promulgation of TSCA (40 CFR Parts 700 to 766) represented an effort by the federal government to address those chemical substances and mixtures for which it was recognized that the manufacture, processing, distribution, use, or disposal may present unreasonable risk of personal injury or health of the environment, and to effectively regulate these substances and mixtures in interstate commerce. The TSCA Chemical Substances Inventory lists information on more than 62,000 chemicals and substances. Toxic chemical substances regulated by USEPA under TSCA include asbestos and lead, which for the purposes of this EA, are evaluated in the most common forms found in buildings, namely asbestos-containing materials (ACM) and lead-based paint (LBP). ACM includes materials that contain more than 1% asbestos and is categorized as either friable or non-friable. LBP includes paint having lead levels equal to or exceeding 0.5% by weight. In addition to asbestos and lead, renovation/demolition activities have the

potential to disturb mercury and poly-chlorinated biphenyl (PCBs). These materials are also regulated under TSCA as RCRA Universal Waste. Buildings may contain liquid mercury in thermostats and thermometers, and fluorescent lighting fixtures typically contain elemental mercury in the fluorescent light bulb; compact fluorescent lamps also contain mercury. In addition, fluorescent lighting fixtures have potential to contain ballasts containing PCBs. None of the proposed barracks project phases involve demolition of buildings. Therefore, analysis of ACM, LBP, PCBs, radon, or mercury is excluded from further analysis in this EA.

RCRA defines hazardous waste as wastes or combination of wastes that, because of quantity, concentration, or physical, chemical, or infectious characteristics, may either cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of or otherwise managed. All hazardous wastes are classified as solid wastes. A solid waste is any material that is disposed, incinerated, treated, or recycled except those exempted under 40 CFR 261.4.

FMMD's Directorate of Public Works Environmental Division is responsible for managing hazardous materials and waste. FMMD operates under a Spill Prevention Control and Countermeasures Plan (SPCCP)/Installation Spill Contingency Plan (ISCP) for all facilities where hazardous materials are stored. The SPCCP/ISCP Plan delineates measures and practices that require implementation to prevent and/or minimize spill/release from storage and handling of hazardous materials to protect ground and water surfaces. The ISCP provides emergency response instructions for spills and uncontrolled releases of hazardous materials. Instructions include notification, probable spill routes, control measures, exposure limits and evacuation guidelines. Material Safety Data Sheets that provide information about health hazards and first-aid procedures are included in the ISCP.

4.10.1 Installation Hazardous Waste Management

FMMD also has an Installation Hazardous Waste Management Plan (FMMD 2011). Those who handle or manage hazardous materials or hazardous waste are trained in accordance with federal, state, local and Army requirements. Each facility has appointed an emergency management coordinator who is responsible for emergency response actions until relieved by hazardous materials spill response personnel.

4.10.2 Pesticides and Herbicides

The Integrated Pest Management Plan provides a framework through which pest problems can be effectively addressed at FMMD. The latest plan was prepared in 2017 and is a five-year plan valid for 2017-2022. Elements of the program, including health and environmental safety, pest identification, pest management, pesticide storage, transportation, use, and disposal are defined within the plan. Used as a tool, this plan reduces reliance on pesticides, enhances environmental protection, and maximizes the use of integrated pest management techniques. Pesticides are stored at the entomology building and used on FMMD in accordance with all applicable federal, state, and post guidelines. Insect infestation is not a problem for this project, therefore pesticides and herbicides will not be analyzed further in this EA.

4.10.3 National Priorities List

USEPA placed FMMD on the National Priorities List (NPL) in 1998 after an evaluation of contamination due to past storage and disposal of hazardous substances at the Defense Reutilization and Marketing Office, Closed Sanitary Landfill, Clean Fill Dump, and Post Laundry Facility. Contaminants at these sites included solvents, pesticides, polychlorinated biphenyls (PCBs), heavy metals, waste fuels, and waste oils. Based on the Army's conclusion that all actions necessary to protect human health and the environment have been conducted for the Tipton parcel, USEPA removed the Tipton parcel from the FMMD NPL listing on 1 November 1999. The FMMD NPL includes the entire current post, from fence line to fence line, inclusive of the Proposed Action area (USACE 2020).

4.10.4 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 posts. The fundamental goal of the FMMD IRP is to protect human health, safety, and the environment. The IRP 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, FMMD signed a Federal Facility Agreement with the EPA, U.S. Department of the Interior and U.S. Architect of the Capitol. This document establishes the role that FMMD and USEPA each play in the restoration of the post and the formal mechanisms of this process. The IRP's staff works closely with the EPA, MDE, and local government agencies to ensure that cleanup processes are conducted properly and efficiently. The staff also receives input from community groups and nearby residential areas.

According to the Final Site Management Plan for FMMD (Stell, 2020), several IRP Preliminary Assessment/Site Inspection sites are near proposed project locations Phase I and Phase II as follows:

- Motor Pool 5 (FMMD 96/OU46) MP-5 – located adjacent to the east of the proposed project site Phase I – approved Closed / No Further Action (NFA) by USEPA;
- Motor Pool 4 (FMMD 96/OU46) MP-4 – located within the proposed project site Phase II– Closed /NFA;
- FMMD-004-R-01 (OU41) Grenade and Bayonet Range A- located within or adjacent to the north of the proposed project site Phase II - Closed /NFA;
- Solid Waste Management Unit (SWMU) 141 & 142 (FMMD 96/OU46) Wash Rack – located adjacent to the west of the proposed project site Phase II - Closed /NFA;
- SWMU 110 & 111 (FMMD 96/OU46) Wash Rack Oil Water Separator – located adjacent to the north of the proposed project site Phase II– Closed /NFA.

4.10.5 Military Munitions Response Areas

In addition, the DoD developed the Military Munitions Response Program (MMRP) in 2001 to address munitions-related concerns, including explosive safety, environmental, and health hazards from releases of unexploded ordnance, discarded military munitions, and munitions constituents (MC) found at locations other than operational ranges on active BRAC Installations and Formerly Used Defense Sites properties. The MMRP addresses non-operational range lands with suspected or known hazards from munitions and explosives of concern (MEC) which occurred prior to September 2002 but are not already included with an IRP site cleanup activity.

FMMD maintains an active MMRP, which includes two Munitions Response Areas (MRAs): Inactive Landfill No. 2 and the Former Mortar Range. As part of the mission for training of Service members, the 291-acre Former Mortar Range was reportedly used as a training mortar range and maneuver area from the 1920s until the 1940s. The majority of the former range and training area has been used as a golf course since 1956. The northwestern portion of the MRA is DoD property and is developed with buildings and associated paved surfaces (i.e., roadways, parking lots, and walkways). The golf course was closed in 2012 and construction of additional DoD buildings began onsite.

Phases I and III are not located within areas of military munitions or explosives of concern or historic range areas. However, although historic range areas have been identified and studied, old ammunition and ordnance items may still be found elsewhere on the post. A 16-acre former grenade and bayonet range did exist in the vicinity of Phase II and was believed to have been used from 1924 until the late 1930s. It is assumed that hand grenades were used on site and could have included fragmentation and practice hand grenades. No explosives were detected in soil samples, and there is no physical evidence of MEC or munitions debris. USEPA approved or concurred that No Further Action was required on 13 June 2007.

4.11 TRAFFIC AND ROADWAYS

Existing roads are important man-made constraints. Depending on their efficiency and quality, they should be maintained to maximize past investments. Built elements of the pedestrian scale such as sidewalks play an important role in shaping how personnel view and experience a post's outdoor space. Built constraints are elements that a post is responsible for. They should support a larger vision while facilitating mission readiness. FMMD is located in Anne Arundel County and is served by the surrounding roadway network:

- Baltimore-Washington Parkway (Maryland [MD] Route 295).
- MD Route 175 (Annapolis Road).
- MD Route 32.
- MD Route 198.

FMMD is accessible from the following five access control gates:

- Gate 1: Mapes Road and MD Route 32,
- Gate 2: Mapes Road and MD Route 175
- Gate 3: Rockenbach Road and MD Route 175, and
- Gate 7: Reece Road and MD Route 175 (Demps Visitor Control Center).

The project sites are accessible from Zimborski Avenue, Taylor Avenue, Dutt Road, or Hodges Street. These roadways also bound the project sites. Currently, there are no improved paved parking areas at any of the project sites.

4.12 INFRASTRUCTURE AND UTILITIES

The location of existing utility lines influences development. Using existing infrastructure is cost-effective, efficient, and encourages more compact development. The post has a well-connected grid of utilities that encompasses the whole post and is supplied by several different entities. This coverage provides flexibility in locating facilities. Utilities would be upgraded to accommodate the needs of the Proposed Action; a summary of these utilities is provided in the following sections. The nighttime lighting profile on-post, including the lighting for parking areas, mimics any off-post type of housing and is being modified wherever possible to diminish light pollution.

4.12.1 Potable Water

FMMD is served by a potable water utility that holds a Water Appropriation and Use Permit from MDE for extraction of groundwater.

4.12.2 Domestic and Industrial Wastewater

FMMD is served by a wastewater utility responsible for operating and maintaining the sanitary sewer system that collects effluent through a network of gravity sewers, force mains and pump stations to then be processed at a treatment plant.

4.12.3 Electric and Gas

Electrical power is supplied to FMMD by Baltimore Gas and Electric (BG&E). Emergency generators are maintained across the installation in the event of a power outage.

Natural gas for FMMD is also supplied by BG&E.

4.12.4 Telecommunications

The communication system at FMMD includes fiber-optic cable.

4.12.5 Solid Waste Management

No active landfills are located at FMMD; all solid waste is transported to a permitted facility located off site.

4.13 SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND PROTECTION OF CHILDREN

The Region of Influence (ROI) for socioeconomic impacts is Anne Arundel County, Maryland. This ROI was selected because it represents the geographic area that is most directly and indirectly impacted by major activities occurring at FMMD. Socioeconomic data is provided in this section to establish baseline conditions. Data consists primarily of publicly available information for Anne Arundel County and provides perspective with regard to the State of Maryland.

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* was signed in 1994, declaring that each federal agency make environmental justice part of its mission. Environmental justice focuses on the protection for racial and ethnic minorities and/or low-income populations to be disproportionately affected by project-related impacts. Analysis of environmental justice is initiated by determining the presence and proximity of these segments of the population relative to the specific locations that would experience adverse impacts to the environment. As defined for the purposes of identifying relevant populations, minority areas are census block groups with a 50% or greater proportion of the population consisting of racial minorities, including those of Hispanic origin. Poverty areas are defined as census block groups where 20% or more of the population lives in households with incomes below the poverty line.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, requires federal agencies to identify, assess, and address disproportionate environmental health and safety risks to children from federal actions.

4.13.1 Demographics

Based on data from the 2018 American Community Survey, the total populations for Anne Arundel County are compared with Maryland and the United States (USCB 2020). As shown in **Table 9**, Anne Arundel County had an estimated population of 567,696. Anne Arundel County has a lower minority population than Maryland, and generally similar to that of the nation as a whole.

Table 9. Demographic Data

Geographic Area	Population	Ethnicity						
		White	Black	Asian	Indian	Islander	Other	Two or More
FMMD, Maryland	9,327	5,876 63.1%	1,772 18.7%	560 6.0%	28 0.3%	0 0.0%	0 0.0%	895 9.6%
Anne Arundel County, Maryland	567,696	416,185 73.3%	93,526 16.5%	21,314 3.8%	997 0.2%	369 0.1%	13,315 2.3%	21,990 3.9%
Maryland	6,003,435	3,373,181 56.2%	1,788,090 29.8%	374,277 6.2%	15,644 0.3%	3,059 0.1%	249,815 4.2%	199,369 3.3%
United States	322,903,030	234,904,818 72.7%	40,916,113 12.7%	17,574,550 5.4%	2,699,073 0.8%	582,718 0.2%	15,789,961 4.9%	10,435,797 3.2%

4.13.2 Socioeconomic Conditions

FMMD is the Army's second largest post by population with more than 60,000 employees that represent the Army, Navy, Air Force, Marines and Coast Guard (FMMD Alliance 2020).

FMMD and its tenant organizations together generate a total of \$17.8 billion in economic activity in Maryland, or 49.4% of the total \$36 billion in economic impact from all the military posts (FMMD Alliance 2020). It is the largest level of employment, payrolls and purchases in Maryland. FMMD creates or supports 125,729 jobs earning an estimated \$9.2 billion in employee compensation. The direct FMMD employment of 48,389 accounts for 1.4% of all employment in Maryland and when multiplier impacts are included, the 125,729 jobs created or supported by FMMD account for 3.6% of all employment in Maryland.

Median household income in Anne Arundel County, MD is \$97,814 (USCB 2020). Males in Anne Arundel County, MD have an average income that is 1.27 times higher than the average income of females, which is \$64,257. Median household income in FMMD, MD is \$71,045 (USCB 2020). Males in FMMD, MD have an average income that is 1.26 times higher than the average income of females, which is \$61,332. The income inequality in FMMD, MD (measured using the Gini index) is 0.461, which is lower than the national average.

The median property value in FMMD, MD is \$218,000, and the homeownership rate is 2.32% as the majority of FMMD housing is not owned by occupants but rather managed by the Army through privatized housing agreements. The median property value in Anne Arundel County, MD is \$371,400, and the homeownership rate is 73.9%.

Based on the 2018 American Community Survey, the poverty rate was 6.9% within FMMD, 7.0% in Anne Arundel County, 9.0% in Maryland, and 11.8% in the U.S. (USCB 2020), the number of children (under age 18) accounts for the highest percentage of people (15.7%) in Anne Arundel County, which is similar to the State of Maryland (15.4%) (USCB 2020). There are no designated play/recreation areas within the vicinity of any of the phases of the proposed new barracks project.

5 ENVIRONMENTAL CONSEQUENCES

The US Army is committed to fostering responsible stewardship of the natural resources held in its trust and has decreed to be a leader in the field of environmental stewardship. Conservation is a pillar of the Army's environmental mission to ensure the future, including the recognition that the ecological approach to management of natural habitats will yield comprehensive benefits, promote best management practices, and promote beneficial impacts within and beyond the geographic boundaries of FMMD.

This section identifies and evaluates the anticipated programmatic environmental impacts associated with implementing the proposed barracks construction projects on FMMD.

This section also analyzes impacts associated with the No Action Alternative in accordance with CEQ guidelines at 40 CFR Part 1508.8. Under the No Action Alternative, FMMD would not undertake any of the barracks construction projects. The No Action Alternative would continue housing Soldiers in antiquated barracks that do not meet current Army standards for unaccompanied enlisted personnel and to continue use of CNAs to house Soldiers off-post. Funds would continue to be spent on maintenance and repairs of antiquated barracks that have long surpassed their usable life, as well as funds that would continue to be spent on off-post housing allowances. This alternative continues the current noncompliance with Army policy of housing lower enlisted ranks on-post where command presence can ensure Soldier safety, welfare, and morale for young Soldiers.

The specific criteria for evaluating the potential environmental impacts of the Proposed Action and the No Action alternative are described in the following sections. The significance of an action is also measured in terms of its context and intensity. The context and intensity of potential environmental impacts are described in terms of their duration, magnitude, whether they are direct or indirect, and whether they are adverse or beneficial, as summarized in the following paragraphs:

- **Short-term or long-term.** In general, short-term impacts are those that would occur only for a limited, finite time with respect to a particular activity and only during the time required for construction or on-post activities. Long-term impacts are those that are more likely to be persistent and chronic.
- **Less-than-significant (negligible, minor, moderate), or significant.** These relative terms are used to characterize the magnitude or intensity of an impact. Negligible impacts are generally those that might be perceptible but are at the lower level of detection. A minor impact is slight, but detectable. A moderate impact is readily apparent. Significant impacts are those that, in their context and due to their magnitude (severity), have the potential to meet the thresholds for significance set forth in CEQ regulations (40 CFR Part 1508.27) and, thus, warrant heightened attention and examination for potential means for mitigation to fulfill the policies set forth in NEPA. Significance criteria by resource area are presented in the following sections.
- **Direct or indirect.** A direct impact is caused by an action and occurs around the same time at or near the location of the action. An indirect impact is caused by an action and might occur later in time or be farther removed in distance but will still be a reasonably foreseeable outcome of the action and, thus, warrant heightened attention and examination for potential means for mitigation to fulfill the policies set forth in NEPA.
- **Adverse or beneficial.** An adverse impact is one having unfavorable or undesirable outcomes on the man-made or natural environment. A beneficial impact is one having positive outcomes on the man-made or natural environment.

This section is organized by resource area following the same sequence as in the preceding Section 4.0. However, this section also includes a discussion of other environmental effects, including cumulative impacts and irretrievable commitments of resources.

Phases II and III are currently largely conceptual and there will not be any formal designs available for this EA, with the exception that Phases II and III would generally have a similar design and function as the Phase I barracks. Thus, some general/broad statements may be made when describing the Phase II and III barracks details. The FMMD Master Plan mentions Barracks Phases I, II, and III. The total occupants proposed for Phase I (in two buildings) is now 380 personnel (it was originally 576). The total proposed occupancy may range from approximately 1,600 to 1,800 personnel. Existing barracks would be used until new ones are available.

5.1 LAND USE

Land use impacts are based on the level of land use sensitivity in areas affected by a Proposed Action and compatibility of Proposed Actions with existing conditions. Factors considered in evaluating land use impacts include the potential for the Proposed Action to be incompatible with surrounding land uses; result in a change of land use that would degrade mission-essential activities; or be inconsistent or in conflict with the environmental goals, objectives, or guidelines of a community or county comprehensive plan for the affected area.

5.1.1 Impacts from Construction of the Proposed Action

The Proposed Action would have short-term, negligible, direct, adverse impacts on land use as associated with the temporary presence of construction equipment. These impacts would occur entirely within the boundary of FMMD; therefore, the construction phase has no reasonable mechanism to impact or induce changes in regional land use outside of FMMD. Additionally, construction would not reasonably impact or prevent existing or planned activities from occurring within FMMD and is compatible with existing land use in the project area. Any minor, short-term, direct, adverse impacts on land uses as associated with the presence of construction equipment within FMMD would cease once the construction phase has concluded.

5.1.2 Impacts from Operation of the Proposed Action

The Proposed Action would have long-term, minor, direct, and indirect, beneficial impacts to land use where improvements are planned to the existing outdated barracks in keeping with the existing nature of land use in the area.

5.1.3 No Action

The No Action Alternative would have no changes on land use at FMMD. No new barracks would be constructed. The vacant parcels would remain in their current condition for the foreseeable future.

5.2 VISUAL RESOURCES

Visual resources include the natural and human-made physical features that give a particular landscape its aesthetic character and value. An adverse impact would be considered significant if changes to the physical features diminish the aesthetic character and value of the landscape or public viewing opportunities are eliminated. Changes to a viewshed or landscape's visual character could include altering or damaging scenic resources or otherwise degrading the existing visual character of the site and its surroundings or creating a new source of glare or substantial light that would affect the view of a visual resource during the time available for observation.

Impacts that enhance the existing quality of a viewshed or landscape are beneficial. Beneficial impacts would occur if a Proposed Action improved the visual character of an existing visual resource, increases the opportunity for viewers to see desirable resources, or decreases views of objectionable visual resources. The significance of impacts on viewers is based on the sensitivity of the observer to the alteration of the existing impact.

5.2.1 Impacts from Construction of the Proposed Action

Short-term, moderate, direct, adverse impacts on visual aesthetics would be expected during the construction period due to the presence of construction vehicles and other associated disturbances related to construction activities. Specifically, construction is likely to require minor site clearing of brush and trees in preparation for new building footprints. Any loss of trees would ultimately be offset through tree replacement in accordance with the FMMD FCA and Tree Management Policy.

The visual impacts associated with the presence of construction equipment would be temporary, lasting only as long as each construction phase occurs. For Phase I, construction is anticipated to last approximately six months.

The receptors to the visual impacts would be limited to FMMD residents, visitors, and staff whose offices have a direct view of the locale undergoing construction. However, construction activities regularly occur throughout FMMD, therefore, activities associated with these barracks projects are not likely to be considered a nuisance or have a significant, long-term, adverse impact on the aesthetic conditions at FMMD. The new barracks would have a long-term, significant, direct, beneficial impact on the viewshed for residents and visitors to that area of FMMD.

5.2.2 Impacts from Operation of the Proposed Action

Implementation of the Proposed Action would have long-term, moderate, direct, beneficial impacts on the visual characteristics of FMMD as a result of the improvements to the barracks and surrounding landscape. The current on-post barracks are dilapidated, unhealthy, and unsightly. Mold and mildew from failing air conditioning systems and leaking roofs has caused these structures to be unsafe. The FMMD Draft Area Development Plan assessed the durability of building materials, potential adaptability, and the layout of all facility buildings and concluded that of the 1,299 buildings on FMMD, 427 were categorized as “should be demolished” and another 57 as “may be demolished” in the next 20 years.

The Proposed Action would encourage a healthier living environment for all its inhabitants. Any vegetation disturbed during construction and subsequently restored would also be maintained during the operational phase. Views of FMMD are limited to personnel, contractors, and civilians within the property. Therefore, long-term impacts to visual resources from the implementation of the Proposed Action would be significantly beneficial for FMMD, its workers, and its residents, but not likely to impact receptors outside of FMMD.

5.2.3 No Action

Implementation of the No Action Alternative would not alter the existing visual or aesthetic conditions of the barracks complex. The Proposed Action sites would remain in their current undeveloped, unmanaged condition for the foreseeable future. Therefore, the No Action Alternative would result in no changes to visual resources at FMMD.

5.3 TOPOGRAPHY AND GEOLOGY

Impacts to topography would be considered significant if the altered topography from the Proposed Action does not comply with the overall topography of adjacent land. Impacts to geology would be considered significant if the Proposed Action removes or alters bedrock in such a way as to cause structural instability to surrounding buildings or infrastructure. Under the Proposed Action, construction and operation activities related to the implementation of the new barracks projects would have no reasonable mechanism for impacting the geology or topography at FMMD. There would be no bedrock blasting or impacts to bedrock outcrops during either the construction, operation, or the No Action Alternative. Therefore, this resource will not be evaluated any further in this EA.

5.4 SOILS

Impacts to soils would be considered significant if the Proposed Action would cause substantial soil erosion or loss of topsoil, which would result in damage to waterways, ground instability, or impact to animal or human habitats.

5.4.1 Impacts from Construction of the Proposed Action

The Proposed Action construction activities would have short-term, minor, direct, adverse impacts on soils in the immediate area of the new barracks sites. Early consultation was initiated with the USDA NRCS and their reply received on November 23, 2020, acknowledging that the Proposed Project area is not “Farmland,” as “Farmland” does not include land already in or committed to urban development or water storage, and therefore, the Farmland Protection Policy Act does not apply to this project. USDA NRCS also stated that *“In general, the soils that would be encountered during construction pose little or no limitation. However, all the soil on site has a high potential for cut banks caving. Please follow proper Occupational Safety and Health Administration (OSHA) guidance for shoring-up excavations.”* A copy of the correspondence is provided in Appendix B.

Early consultation was also initiated with MDE, who advised that there is a potential for encountering soil contamination during the duration of the construction as soil excavation/grading/site work would be performed. If soil contamination is present, a permit for soil remediation would be required and obtained from MDE. A copy of this correspondence is provided in Appendix B.

The Phase I site is 6 acres, Phase II is 10 acres, and Phase III is 5 acres. An estimated total of 10.5 acres of new impervious surface area is anticipated in the sum of all three project phases, but this is expected to be offset by an equivalent acreage which would be restored as part of the project. Soil disturbances in the form of excavations, grading, earthmoving, and compaction would result from construction 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. Soil productivity (i.e., the capacity of the soil to produce vegetative biomass) would decline in disturbed areas and be eliminated for those areas within the footprint of building structures, road widenings, and structures included in the Proposed Action. Exposed soils would be more susceptible to erosion by wind and surface run-off, leading to a minor loss.

Adverse impacts to soils from construction activities would be minimized by proper construction management and planning and the use of appropriate site BMPs for controlling run-off, erosion, and sedimentation during construction activities. Appropriate erosion and sediment controls, such as synthetic hay bales and silt fencing, would be installed during construction. The construction would be phased such that areas that are disturbed are stabilized before moving to the next construction area. Areas disturbed outside of the footprints of the new construction would be reseeded, replanted, and/or re-sodded following construction activities, which would decrease the overall erosion potential of the site and improve soil productivity.

Additionally, because the proposed construction would disturb more than one acre of ground surface, FMMD (via the selected construction contractor) would apply to MDE for either a General or Individual Permit for Stormwater Associated with Construction Activity. As part of the permit application, an Erosion and Sediment Control Plan (ESCP) and Stormwater Pollution Prevention Plan (SWPPP) would be required as all three phases of the project, individually, are expected to exceed 5,000 square feet (SF) in size. These erosion and sedimentation plans would be prepared and submitted by FMMD to the MDE, Water Management Administration for review and approval prior to the start of any construction activities. Areas disturbed within the equipment staging area would be reseeded, replanted, and/or re-sodded following construction activities, which would decrease the overall erosion potential of the site and improve soil productivity.

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, requires that all new construction comply with the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings (Guiding Principles). This includes employing design and construction strategies that reduce stormwater run-off. Furthermore, Section 438 of the EISA requires that any development or redevelopment project involving a federal facility with a footprint exceeding 5,000-square feet shall use site planning, design, construction, and maintenance strategies in order to maintain or restore the predevelopment hydrology of the property with regard to temperature, rate, volume and duration of flow. All three phases of the project, individually, are expected to exceed 5,000 square feet (SF) in size. Therefore, compliance with this requirement will be required and can be met through the implementation of low-impact development (LID) technologies, which would strive to maintain or restore natural hydrologic functions of a site and achieve natural resource protection. Examples include, but are not limited to, minimizing total site impervious areas, direct building drainage to vegetative buffers, use permeable pavements where practical, and break up flow directions from large, paved surfaces. Additionally, compliance with Section 438 of the EISA is expected to be superseded by the more stringent requirements of COMAR.

5.4.2 Impacts from Operation of the Proposed Action

Operation of the Proposed Action would have a long-term, minor, direct, adverse impact on soil quality due to reworking the soil structure and covering soils with impervious surfaces at the Proposed Action sites.

5.4.3 No Action

Under the No Action Alternative, existing conditions would remain unchanged. The lots would remain vegetated and unmaintained, and there would be no mechanisms or activities to impact soil quality. Thus, the No Action alternative would have no impact on soils.

5.5 NOISE

Noise impacts would be significant if the Proposed Action creates appreciable long-term noise increases in areas of incompatible land use. Additionally, continuous construction noises above 60 dBA may be considered to have a significant adverse effect if audible at residential properties or other sensitive receptors during daytime hours, or results in excessive ground-borne vibration to persons or property.

5.5.1 Impacts from Construction of the Proposed Action

The Proposed Action construction activities would have short-term, minor, direct, adverse impacts on noise in the immediate area of the new barracks sites, primarily due to site preparation and construction activities. The area is proximate to Hwy 32 but there is a buffer of trees and other vegetation between the barracks construction site and Hwy 32 which would help mitigate noise. Phase II would be the closest to the highway and is approximately 700 feet away. Construction equipment is expected to include gas and/or diesel-powered equipment such as excavators, cranes, backhoe-loaders, welders, aerial lifts, graders, pavers/paving equipment, rollers, and concrete mixing trucks. Once mobilized to the site, the majority of construction equipment would remain within the proposed construction boundary until the phase of construction for which the equipment was needed is complete. Within the proposed construction area, noise from construction activities would vary depending on the type of equipment being used at the time.

Any of the Proposed Action phases may generate noise levels during the earth moving phase (site clearing activities involving pieces of equipment) that could range from 72 to 98 dBA when measured 50 feet from the respective piece of equipment. The impact from this noise on a receptor depends on the distance between the noise source and receptor. Generally, noise levels decrease by approximately 6 dBA for every doubling of distance for point sources (such as a single piece of construction equipment), and approximately 3 dBA for every doubling of distance for line sources (such as a stream of motor vehicles on a busy road at a distance). The nearest noise receptor would be the Freedom Barracks, approximately 200-feet north, and a chapel on 6th Armored Cavalry Road. Construction activities would take place during daylight hours and

during weekdays and noise impacts would be further minimized by equipping construction equipment with appropriate sound-muffling devices (i.e., from the original equipment manufacturer or better), and limiting engine idling to less than 5 minutes. Examples of expected construction noise during daytime hours at specified distances are shown in **Table 10**.

Table 10. Estimated Noise Levels from Construction Activities

Distance from Noise Source in feet (meters)	Estimated Noise Level in dBA
50 (15.2)	90–94
100 (30.5)	84–88
150 (45.7)	81–85
200 (61.0)	78–82
400 (121.9)	72–76
800 (243.8)	66–70
1,200 (365.8)	< 64

Construction workers would be working in close proximity to construction equipment and could be exposed to noise levels above 90 dBA. This is above the permissible noise exposure level defined by OSHA. These levels would be reduced to permissible levels through feasible administrative or engineering controls, and/or the use of BMPs such as the use of hearing protection equipment to ensure compliance with applicable OSHA standards.

5.5.2 Impacts from Operation of the Proposed Action

The Proposed Action would result in long term, direct, negligible, adverse impacts resulting from the increased population of up to 1,600-1,800 new residents and the noise associated with maintenance activities and traffic in the project vicinity. Noise levels would likely be comparable to the existing Freedom Barracks Complex just north of the proposed barracks site, but the decision whether to install noise barriers or some other noise insulation measures would likely not be made until the design phase of later projects, as determined by the FMMD DPW. The noise levels generated by ongoing operational activities would be similar to the existing “active campus” nature of the area. To ensure operational maintenance noises do not become a nuisance, maintenance equipment would be maintained in good working order. Additionally, maintenance equipment would be operated during daylight working hours.

5.5.3 No Action

Under the No Action Alternative, the barracks construction project would not occur, and no additional noise impacts would result. Therefore, the No Action Alternative would result in no changes to noise conditions at FMMD.

5.6 AIR QUALITY

Emission thresholds associated with federal CAA conformity requirements are the primary means of assessing the significance of potential air quality impacts associated with implementation of a Proposed Action under NEPA. A formal conformity determination is required for federal actions occurring in nonattainment or maintenance areas when the total direct and indirect stationary and mobile source emissions of nonattainment pollutants or their precursors exceed *de minimis* thresholds. Significant air quality impacts would occur if implementation of an action alternative would directly or indirectly:

- Expose people to localized (as opposed to regional) air pollutant concentrations that violate state or federal ambient air quality standards;
- Cause a net increase in pollutant or pollutant precursor emissions that exceeds relevant emission significance thresholds (such as CAA conformity *de minimis* levels or the numerical values of major source thresholds for nonattainment pollutants); or,
- Conflict with adopted air quality management plan policies or programs.

Federal, state, and local air pollution standards and regulations set the criteria for determining the significance of air quality impacts. Impacts would also be potentially significant if estimated emissions would exceed the thresholds that trigger a conformity determination under Section 176(c) of the CAA of 1990.

Table 11 presents a summary of the estimated construction and operational emissions due to implementation of the Proposed Action. Estimated annual emissions are projected to be below the *de minimis* levels for CAA conformity; therefore, a formal conformity determination under Section 176(c) of the CAA would not be required. The U.S. Army has prepared a Record of Non-Applicability (RONA) for CAA conformity (refer to Appendix C of this EA).

Table 11. Estimated Annual Construction and Operational Emissions

Emission Source:	Emissions (tons/year)					
	VOC ²	CO	NO _x ¹	SO ₂ ²	PM ₁₀ ¹	PM _{2.5} ¹
Proposed Action Construction Emissions	0.368	3.224	2.164	0.006	0.002	0.002
Proposed Action Operation Emissions	0.0217	0.1146	0.3226	0.0020	0.0381	0.0001
Total Proposed Action Emissions	0.3897	3.3386	2.4866	0.008	0.0401	
General Conformity <i>de minimis</i> threshold	50	--	--	--	--	100
New Source Review threshold	--	250	250	250	250	--
Exceeds <i>de minimis</i> or NSR threshold?	No	No	No	No	No	No

Note:

1 - *De minimis* thresholds are not applicable to pollutants for which the area is in attainment for the NAAQS. New Source Review (NSR) thresholds are 250 tons per year of any pollutant.

2 - Not in attainment

Annual emissions resulting from project activities have been conservatively estimated using data presented in Appendix C, general air quality assumptions, and published emission factors.

5.6.1 Impacts from Construction of the Proposed Action

The Proposed Action would result in temporary, minor, direct, adverse impacts to air quality, primarily due to construction equipment and activities. Under the Proposed Action, potential air quality impacts from construction activities would occur from: 1) combustion emissions due to the use of fossil fuel-powered equipment and vehicles, and 2) particulate emissions during earth-moving activities.

5.6.1.1 Fugitive Dust

Particulates are the main air pollutant of concern from construction projects. Construction activities would generate both coarse and fine particulate emissions which would temporarily affect local air quality. The number of particulate emissions can be estimated from the amount of ground surface exposed, the type and intensity of activity, soil type and conditions, wind speed, and dust control measures used. To limit these emissions, construction BMPs, generally including water- or chemical-based dust suppression, would be implemented to reduce fugitive dust generation and further prevent it from becoming airborne.

No long-term increases in fugitive dust are expected to occur, because this source of emissions is limited and would cease upon completion of the Proposed Action. Particulate matter emissions would be moderated through dust reduction measures (e.g. watering of exposed soils) as needed, thereby minimizing the total quantity of fugitive dust emitted during construction activities. In addition, project construction equipment would emit minor amounts of HAPs. The main sources of HAPs would occur from the combustion of diesel fuel. Construction would be temporary and minor HAPs emissions could be further moderated through implementation of BMPs such as restricting excessive idling, adherence to equipment maintenance programs, use of particulate filters, and use of ultra-low sulfur diesel fuel if applicable.

Total suspended particulates were calculated using the emission factor for heavy construction activity operations from “AP-42, Compilation for Air Pollutant Emission Factors” (USEPA, 1995), to provide a conservative estimate of PM emissions. Estimates are shown in *Table 12*.

Table 12. Total Suspended Particulate Emissions during Construction of the Proposed Action

Total Area (acres)	Exposed Area (acres)	Construction Duration (months)	Emission Factor (tons/acre/month) ¹	Control Efficiency (%)	PM (tons/year)
6	6	6	80	50	0.067

5.6.1.2 Off-Road Heavy Construction Equipment

Non-road construction vehicles (backhoes, loaders) would emit criteria pollutants during construction. Criteria pollution emissions from construction equipment were calculated assuming the use of two backhoe loaders and smaller support equipment, operating for approximately eight hours per day for a total of 130 weekdays (approximately 6 months). Emissions were estimated using “Off-Road – Model Mobile Source Emission Factors” from the California South Coast Air Quality Management District (SCAQMD, 2020) because the State of Maryland has not published its own emission factors. Emission factors for year 2022 were used in these calculations, though it is understood that construction activities for Phases II and III would occur farther into the future; emission factors typically decrease over time as new and more efficient equipment is brought to market. Therefore, using year 2022 factors represents a conservative estimate of potential emissions. Table 13 shows projected equipment operating hours. Table 14 summarizes equipment emission factors. Table 15 summarizes the total annual emissions during the six-month construction period. Lead has been removed as a diesel and gasoline additive; therefore, lead is excluded from combustion engine emission estimates.

Table 13. Schedule of Construction Equipment Use at FMMD

Equipment Type	Number of Units	Hours Used /Day	Total Days	Total Hours
Grading/Site Preparation				
Tractors/Loaders/Backhoes	1	4	256	1024
Graders	1	4	10	40
Building Construction				
Cranes	1	4	30	120
Excavators	1	4	126	504
Welders	4	8	42	1,344
Aerial Lifts	2	8	256	4,096
Generator sets	4	8	256	8,192
Cement and Mortar Mixers Composite	1	8	180	1,440

Equipment Type	Number of Units	Hours Used /Day	Total Days	Total Hours
Paving				
Pavers	1	8	15	120
Paving Equipment	1	8	10	80
Rollers	1	8	5	40
Architectural Coatings (painting)				
Air Compressor	1	8	180	1,440

Table 14. Emission Factors for Off-Road Heavy Construction Equipment

2022 Equipment/ Emission Factors ⁽¹⁾	CO (lbs/hr)	NOx (lbs/hr)	PM ⁽²⁾ (lbs/hr)	SO ₂ (lbs/hr)	VOC ⁽³⁾ (lbs/hr)
Grading/Site Preparation					
Tractors/Loaders/Backhoes	0.3599	0.2302	0.0218	0.0007	--
Graders	0.5732	0.4657	0.0218	0.0015	0.0474
Building Construction					
Cranes	0.3822	0.5505	0.0203	0.0014	0.0798
Excavators	0.5104	0.3171	0.0136	0.0013	0.0648
Welders	0.1773	0.1557	0.0078	0.0003	0.0260
Aerial Lifts	0.1667	0.1619	0.0071	0.0004	0.0222
Generator sets	0.2694	0.2783	0.0117	0.0007	0.0340
Cement and Mortar Mixers Composite	0.0414	0.0535	0.0021	0.0001	0.0085
Paving					
Pavers	0.4840	0.4750	0.0296	0.0009	0.0870
Paving Equipment	0.4042	0.4137	0.0261	0.0008	0.0666
Rollers	0.3799	0.3198	0.0181	0.0008	0.0500
Architectural Coatings (painting)					
Air Compressor	0.3041	0.2677	0.0138	0.0007	0.0414

Notes:

1 – South Coast Air Basin (SCAB), emission factor year 2022. Composite emission factors used.

2 - PM emissions represent combined PM₁₀ and PM_{2.5} estimates.

3 - VOCs are considered equivalent to ROGs for calculating non-road construction equipment emissions.

Table 15. Annual Off-Road Construction Equipment Emissions

Criteria Pollutant ¹	CO	NOx	PM ²	SO ₂	VOCs ³
Grading/Site Preparation					
Tractors/Loaders/Backhoes	0.184250	0.117849	0.004884	0.0003968	0.019648
Graders	0.011463	0.009315	0.0004357	2.992E-05	0.0016135
Building Construction					
Cranes	0.022930	0.033032	0.00122092	8.261E-05	0.0047861
Excavators	0.128619	0.079905	0.00343946	0.0003315	0.0163404
Welders	0.119144	0.104653	0.005214158	0.0002133	0.0174750

Criteria Pollutant ¹	CO	NO _x	PM ²	SO ₂	VOCs ³
Aerial Lifts	0.341301	0.331619	0.01444232	0.0008176	0.0454404
Generator sets	1.10357	1.13998	0.04772	0.002858	0.139378
Cement and Mortar Mixers Composite	0.029840	0.038515	0.00151184	7.821E-05	0.0061543
Paving					
Pavers	0.029037	0.028499	0.00177728	5.369E-05	0.0052186
Paving Equipment	0.016169	0.016548 2	0.001045909	3.172E-05	0.0026645
Rollers	0.007598	0.006396	0.000361783	1.539E-05	0.0009999
Total Off-Road Heavy Construction Equipment Emissions (tons per year [tpy])	1.299283	1.267144	0.05303967	0.0032847	0.1606395

Notes:

1 - PM emissions from non-road construction vehicles are included in the general construction emissions factor applied in the estimates in Table 17, and therefore non-road emissions of PM are not included in this table.

2 - PM emissions represent combined PM₁₀ and PM_{2.5} estimates.

3 - Calculated using "Off-road Mobile Source Emission Factors (Scenario Year 2022) (SCAQMD, 2020).

Based on these estimates, the annual emissions emitted during construction would not exceed the USEPA NAAQS *de minimis* thresholds and a General Conformity determination is not required. Therefore, construction would have a short-term, direct, negligible adverse impact on air quality. A Record of Non-Applicability is provided in Appendix C.

5.6.1.3 On-Road Heavy and Light Duty Trucks and Construction Worker Vehicle Emissions

Emissions from on-road heavy and light duty diesel-fueled trucks associated with the delivery and distribution of construction materials and general on-site construction support, as well as those from construction workers' passenger vehicles, were included in this analysis. Emission factors specific to Maryland for emission year 2022 (published by the US Air Force) were used for on-road heavy and light duty diesel-fueled trucks, and for gasoline-fueled passenger vehicles (USAF, 2020). Assumptions of travel distance incorporated in the calculations for the different vehicle categories were as follows:

- For on-road light duty diesel-fueled trucks, it was assumed there would be 10 trucks operating, each operating for 60 days (not necessarily contiguous), and each traveling 30 miles per day. This is equivalent to a total of 18,000-miles traveled per year (10 trucks * 60 days * 30 miles).
- For on-road heavy duty diesel-fueled trucks, it was assumed there would be 1 truck operating, each operating for 30 days (not necessarily contiguous), and each traveling 50 miles per trip. This is equivalent to a total of 1,500-miles traveled per year (1 trucks * 30 days * 50 miles).
- For construction workers' gasoline-fueled passenger vehicles, it was assumed there would be 50 vehicles operating, each traveling a total of 40 miles per day, for 260 days (6 months, weekdays), at an average speed of 30 miles per hour. This is equivalent to a total of 312,000 -miles traveled per year (50 vehicles * 260 days * 40 miles).

Table 16 details the emission factors used in this analysis. **Table 17** summarizes the annual on-road construction-vehicle emissions.

Table 16. On-Road Heavy and Light Duty Trucks and Construction Worker's Vehicle Emission Factors

On-Road Vehicle Category	2022 Emissions Factors, lbs/mile					
	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC
Heavy-Duty Diesel-Fueled Truck (8,501 + lbs)	0.002923	0.000666	0.0080755	0.0000265	0.0002712	0.0002491
Light-Duty Diesel-Fueled Truck (0-8,500 lbs)	0.008490	0.000436	0.0006680	0.0000066	0.0000154	0.0000132
Light-Duty Gasoline-Fueled Vehicles (passenger cars)	0.005997	0.000476	0.0003417	0.0000044	0.0000132	0.0000132

Table 17. Estimated Annual Vehicle Emissions from On-Road Heavy and Light Duty Trucks and Construction Workers' Vehicles

On-Road Vehicle Category	Construction Emissions (tpy)					
	CO	NO _x	PM ₁₀	PM _{2.5}	SO ₂	VOC
Heavy Duty Diesel Truck Construction Equipment Emissions	0.002	0.006	0.000203	0.000187	0.000002	0.0005
Light Duty Diesel Trucks Construction	0.076	0.006	0.00014	0.00012	0.00006	0.004
Construction Worker Vehicle Emissions	0.933	0.053	0.002	0.002	0.001	0.074
On-Road Construction Support and Worker's Vehicles Emissions (tpy)	1.011	0.078	0.065	0.001	0.002	0.002

5.6.2 Impacts from Operation of the Proposed Action

The Proposed Action would result in long-term, direct, negligible adverse impacts from the additional buildings, residents, and associated maintenance activities. As noted above, operational emissions would be generated from landscaping and boiler emissions. Due to the fact that landscaping already occurs at FMMD, additional landscaping emissions resulting from the operation of the Proposed Action would be negligible.

During construction of Phase I, two new barracks would be constructed within the proposed site area. USACE provided emission estimates in tons per year for one KN-16 natural gas boiler operating for one year for a total of 2,000 hours. Because there would be two gas boilers, the emissions were doubled. **Table 18** details the emission factors used in this analysis. FMMD would be required to demonstrate compliance with the EPA's New Source Standards of Performance for boilers of over 10 MMBtu/hour of fuel.

Table 18. Natural Gas Boiler Operational Emissions

Actual tons per year						
NAAQS:	CO	VOC	NO _x	SO _x	PM ₁₀	Pb
1 Boiler	0.034	0.009	0.16	0.001	0.019	0
2 Boilers	0.068	0.018	0.32	0.002	0.038	0

It is also likely that there would be a decrease in air emissions due to the anticipated decrease of commuter traffic currently experienced by Service members housed off-post due to the housing shortage. Operation and maintenance equipment could include small-engine equipment used for vegetation control such as lawnmowers, weedwhackers, leaf blowers, and chainsaws. These would make a *de minimis* contribution to overall emissions; therefore, operation of the Proposed Action would result in a negligible increase in annual emissions at FMMD.

5.6.3 No Action

Under the No-Action Alternative, the Proposed Action would not be constructed, and existing conditions would remain unchanged. However, due to the anticipated increase of Service members living off-post, vehicular traffic would also increase to and from FMMD. This increased travel could also result in an increase in emission levels over current conditions. Thus, the No Action Alternative could have a long-term, minor adverse impact on air quality due to increased vehicles accessing FMMD each day.

5.7 WATER RESOURCES

Impacts to water resources would be considered significant if impacts (1) substantially deplete groundwater supplies or interfere with groundwater recharge, (2) result in a violation of federal and/or state water quality standards, (3) cause an unpermitted direct impact on a water of the United States or (4) alter existing drainage patterns. The project site reports indicate that there are no surface waters, floodplains, wetlands, or coastal waters on the Proposed Action site. There is an existing stormwater retention pond that lies within the 500-year floodplain.

5.7.1 Surface Water

5.7.1.1 Impacts from Construction of the Proposed Action.

Construction of the Proposed Action could result in short-term, negligible, direct, adverse impacts to surface water. The impact could occur if sediment-laden stormwater run-off from the construction site migrated to Midway Branch. During the design of each separate project, appropriate Soil Erosion and Sediment Control Plans would be developed and necessary permits obtained by FMMD or the construction contractor. Where possible, the designs would be developed to avoid or minimize impacts to surface water resources.

Provided that a construction general permit for stormwater has been approved and implemented, run-off of stormwater and pollutants from a construction site is considered to be in compliance with regulatory requirements and would not cause an impairment of surface waters. FMMD would also maintain the voluntary 100-foot riparian forest buffer along streams and abutting wetlands to the maximum extent practical.

With the implementation of permit-related construction BMPs, no construction-related stormwater run-off is expected to intersect with Midway Branch at any time during construction or operation of the Proposed Action.

5.7.1.2 Impacts from Operation of the Proposed Action

Operation of the Proposed Action would result in no adverse impacts to surface water in the vicinity of the barracks projects. The estimated additional impervious surfaces per phase is expected to be 3 acres for Phase I, 5 acres for Phase II, and 2.5 acres for Phase III, for a total of 10.5 acres upon completion of all three phases. These new impervious surfaces would mostly be in the form of rooftops, parking lots, sidewalks, curbs, gutters, and a basketball court. FMMD would comply with COMAR, which is more stringent than Section 438 of EISA, to ensure that both pre-and post-hydrology remain the same with no additional stormwater run-off with the utilization of green parking lots, tree boxes, and similar stormwater control measures. Additionally, the existing SWM pond would be retrofitted to accommodate any additional stormwater run-off.

5.7.1.3 No Action

Implementation of the No Action Alternative would result in no impact to surface waters. Existing conditions would remain unchanged.

5.7.2 Floodplains

The project site reports indicate that there are no floodplains on any of the Proposed Action sites. However, the SWM pond is located within the 500-year-floodplain associated with Midway Branch. Retrofits to the SWM pond would be permitted and implemented as part of Phase I of the Proposed Action to ensure its functional sufficiency. The improvement to the SWM pond would not modify the existing floodplain or induce flooding elsewhere at FMMD or off-site. Thus, the Proposed Action would have no impact on floodplains.

However, any future design or construction that may impact the floodplain of Midway Branch would require coordination with the USACE-Regulatory Branch, the Baltimore District, and MDE, specifically in regard to potential permitting actions within Section 404 jurisdictional waters of the United States. FMMD would be required to consult with MDE, which also regulates wetlands in Maryland, to determine whether or not any state or regional permits for any associated impacts may also be required.

5.7.3 Groundwater

Impacts to groundwater would be considered significant if a project (1) reduces water availability or supply to existing users, (2) overdrafts groundwater basins, or (3) endangers public health by creating or worsening health hazard conditions.

5.7.3.1 Impacts from Construction of the Proposed Action

The Proposed Action construction activities could have a short-term, indirect, negligible, adverse impact on groundwater quality. Construction would have no mechanism to directly impact or come into contact with groundwater resources. However, during construction, accidental releases of petroleum-based fluids from construction equipment could occur and, if not immediately remediated, could adversely impact groundwater quality. To avoid such potential releases and impacts, construction equipment would be properly maintained in good working order and equipped with emergency spill kits, with workers trained

in proper deployment and use of these kits. This would ensure that construction contractors are prepared to respond to an emergency release of petroleum-based fluids, contain the release, and prevent adverse impacts to groundwater from occurring. Additionally, construction equipment would be refueled in a designated area equipped with impervious surfaces to avoid potential releases to pervious surfaces and the underlying groundwater.

5.7.3.2 Impacts from Operation of the Proposed Action

Operation of the Proposed Action would have a long-term, indirect, negligible, adverse impact on groundwater quality, due to the new impervious surfaces and reduced groundwater recharge volume. Operational activities would not come into contact with groundwater resources and thus would have no additional adverse impact.

5.7.3.3 No Action

Under the No Action Alternative, the Proposed Action would not be implemented, and existing groundwater resources and conditions would remain unchanged.

5.7.4 Coastal Zone Management

Factors considered in evaluating coastal zone management impacts include the potential for the Proposed Action to be inconsistent with the federal and state enforceable policies. The Proposed Action would be considered to have a significant effect on the coastal zone if the Proposed Action was inconsistent with enforceable policies under the Maryland CZMP, and permits and mitigation, if required for construction within the coastal zone, were not obtained.

As part of compliance with the federal CZMA, Maryland's CZMP and Maryland's Chesapeake Bay Critical Area Protection Act, consideration of the location of coastal zones and critical areas is incorporated into the design of the barracks would be taken to avoid these areas or minimize adverse impacts wherever possible.

5.7.4.1 Impacts from Construction and Operation of the Proposed Action

Construction and operation of the Proposed Action are not anticipated to impact resources of the Maryland coastal zone because none of the activities would adversely impact surface waters or wetlands (with the exception of MDE-permitted wetland impacts associated with retrofitting the SWM pond) at or beyond FMMD. A letter of authorization from the MD DOE, Water and Science Administration received on October 25, 2021, constitutes the State's concurrence that the activities authorized for the Proposed Action are consistent with the Maryland Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act of 1972, as amended (see Appendix D).

5.7.4.2 No Action

Under the No Action Alternative, the Proposed Action would not be implemented. Thus, existing conditions at FMMD would remain unchanged and there would be no impacts to coastal zone resources.

5.7.5 Wetlands

5.7.5.1 Impacts from Construction and Operation of the Proposed Action

Construction and operation of the Proposed Action would have long-term, minor, direct, adverse impacts to wetlands that would be impacted during retrofitting of the SWM pond. As previously described in Section 3.1 and depicted on Figure 5, the Proposed Action would result in permanent impacts to 1,112 square feet of emergent non-tidal wetlands and 3,607 square feet of the 25-foot non-tidal wetland buffer. In accordance with COMAR, the FMMD DPW received a 5-year letter of authorization on October 25, 2021, from the State of Maryland to conduct a regulated activity in a non-tidal wetland for the Proposed Action; regulated

activities include clearing, grading, and filling for the repair and retrofitting of the SWM pond stormwater management system (see Appendix B).

5.7.5.1 No Action

Under the No Action Alternative, the Proposed Action would not be implemented. Thus, existing conditions at FMMD would remain unchanged and there would be no impacts to wetlands.

5.7.6 Stormwater

5.7.6.1 Impacts from Construction of the Proposed Action

Construction of the Proposed Action would increase of impervious surfaces and increase the volume of stormwater run-off to be managed. As previously described, the SWM pond would be retrofitted to manage the additional stormwater run-off volume. The SWM pond would continue to function during construction of the retrofit. Additionally, the current beaver dams near the SWM pond outfall would be removed as part of the retrofit.

As previously described, prior to construction all necessary stormwater-management permits would be obtained, and permit-required BMPs would be implemented and maintained throughout the construction period to minimize sedimentation of stormwater run-off generated at the construction site. These measures would ensure that construction-related impacts to stormwater quality remain at a short-term, direct, negligible adverse level.

The Proposed Action would impact up to two existing tree box filters (TMDL facilities) that were installed in 2018 and 2019. The project proponent would be required to obtain a stormwater management permit from MDE and provide a replacement plan for the 0.5 TMDL credit assigned to the tree box filters. The SWM pond and a concrete-lined stormwater conveyance ditch leading to it located east of Taylor Road is available for modification to meet stormwater management requirements and is included in the limits of disturbance of the Proposed Action (Houtchins 2020). As previously described, the Proposed Action final design would also require FMMD to comply to the maximum extent technically feasible with the COMAR and Section 438 of the EISA to ensure that pre- and post-hydrology remain the same, with no additional discharge for stormwater.

5.7.6.2 Impacts from Operation of the Proposed Action

Operation of the Proposed Action would have a long-term, moderate, direct, beneficial impact on stormwater quality and management capacity due to the retrofit and improved maintenance of the SWM pond. The retrofit would ensure that the SWP becomes compliant with MDE small pond regulations. Thus, operation of the Proposed Action would improve the water quality benefit which the pond provides.

5.7.6.3 No Action

Implementation of the No Action alternative would have no impact on stormwater management facilities. Maintenance of the existing SWM would continue, including removal of the beaver damage, siltation of the pond, and associated blockages of the outfall pipe.

5.8 BIOLOGICAL RESOURCES

Factors considered in the analysis of potential impacts to biological resources include any anticipated adverse impacts to fish and wildlife as well as to habitat and compliance with FMMD's obligations as outlined in both the FMMD INRMP and FMMD FCA and Tree Management Policy.

5.8.1 Vegetation

Substantial impacts to vegetation would occur if the Proposed Action (1) would result in a permanent net loss of habitat at a landscape scale or (2) could result in a long-term loss or impairment of a substantial portion of local habitat on which native species depend.

5.8.1.1 Impacts from Construction of the Proposed Action

The Proposed Action would result in permanent, minor, direct, adverse impacts on vegetation. Removal of grasses, landscaping, brush, and trees during the staging and construction of the Proposed Action would be expected. At full build-out, the Proposed Action is anticipated to disturb and/or permanently remove approximately 21 acres of partially vegetated habitat. The Phase I site has two large trees on the southwest corner of the Phase I site. These two non-specimen-sized pin oaks are located on the southwestern corner of the Phase I site, near Zimborski Avenue. FMMD DPW requested that the project designers avoid removal of these two trees, if possible, as they are on the periphery of the site and could be incorporated into the street tree layout for the final design. The Phase II site has specimen trees; most of the specimen tree removal would occur with Phase II in the area south of Dutt Road and mitigation would be required for any impacted trees and/or forested areas. A replacement area has yet to be identified for specimen trees removed from the Phase II site, but the project proponent would work with FMMD's DPW to comply with the FMMD FCA and Tree Management Policy. Currently, the Phase III site has no specimen trees.

As previously described, the Proposed Action would be designed to comply with the current FMMD FCA and Tree Management Policy. FMMD requires that the equivalent of 20% of a project area be forested. All projects of 40,000 square feet or larger must comply with the FMMD policy, for which all of three project phases qualify. Therefore, each phase of the barracks project would be required to meet FMMD FCA and Tree Management Policy requirements. Trees can be replanted elsewhere on FMMD, if necessary, for mitigation. Removing the nuisance Bradford pear is a benefit. Mitigation would be required for impacted trees and/or forested areas for all three project phases. In addition, upon completion of construction for all three sites, trees would be planted with the goal that 70% of parking would be shaded within 15 years (FMMD 2020). FMMD uses Anne Arundel County parking lot interior tree requirements as guidance and will incorporate these trees to the maximum extent practical. The Proposed Action would also include 1:1 street tree replacement for street trees removed by the project and require, to the maximum extent practical, planting of street trees on streets around the perimeter of each phase of the barracks projects.

5.8.1.2 Impacts from Operation of the Proposed Action

The Proposed Action would result in long-term, minor, direct, beneficial impacts on vegetation due to the planting of new and replacement trees and restoration and maintenance of vegetation following construction. This would be considered an improvement to the current conditions of sparsely vegetated lots with extensive growth of invasive species. The landscaped grounds would not be considered to provide suitable habitat for RTE species due to the presence of residential activities and routine maintenance but may provide limited new habitat and shade to common wildlife species.

5.8.1.3 No Action

Under the No Action alternative, existing conditions within each lot would remain unchanged for the foreseeable future. This would lead to a long-term, minor, direct, adverse impact, because there would be a continued spreading of nuisance species such as the Bradford pear (*Pyrus calleryana*) and oriental bittersweet (*Celastrus orbiculatus*) at the existing lots. Common wildlife species would continue to utilize the lots.

5.8.2 Terrestrial Wildlife Resources

Substantial impacts to terrestrial wildlife resources would occur if the Proposed Action (1) would result in a permanent net loss of habitat at a landscape scale or (2) could result in a long-term loss or impairment of a substantial portion of local habitat on which native species depend.

5.8.2.1 Impacts from Construction of the Proposed Action

The Proposed Action would result in negligible, permanent, direct, adverse impacts to any terrestrial species inhabiting the three sites.

Given the nature of the habitat, a wide variety of terrestrial species have not been found to inhabit the proposed sites. The presence of the Freedom Barracks and the active US Marine Corps obstacle course are likely deterrents to wildlife. Therefore, conversion of these three sites is not expected to be a significant disruption for wildlife. A recent investigation of the stormwater management pond indicated some beaver activity, as shown in Figure 13. Error! Reference source not found.. FMMD would remove beaver or any other nuisance species as a routine component of maintaining post infrastructure, independent of the Proposed Action, if they are found to be impacting the function of the stormwater management pond.

5.8.2.2 Impacts from Operation of the Proposed Action

The Proposed Action would result in permanent, minor, direct, adverse impacts to any terrestrial species as the project sites are converted to residential use with subsequent maintenance and landscaping.

5.8.2.3 No Action

Under the No Action alternative, the lots would remain unmaintained and unimproved. As such, there would be no changes to habitat for terrestrial wildlife. Existing conditions would remain unchanged.

5.8.3 Rare, Threatened, or Endangered Species

5.8.3.1 Impacts from the Proposed Action

Significant adverse impacts to RTE species would occur if the Proposed Action would (1) jeopardize the continued existence of any federally-listed threatened or endangered species or result in destruction of critical habitat or (2) eliminate a sensitive habitat such as breeding areas, habitats of local significance, or rare or state-designated significant natural communities needed for the survival of a species. All three phases of the project were included as part of a post-wide survey during which the presence of one threatened species (Northern long-eared bat) and one endangered species (Indiana bat) were acoustically detected. However, no hibernaculum or summer roost trees have been identified at FMMD or in Anne Arundel County, MD. Consultation was initiated with the USFWS on November 13, 2020, and their response stated that the Proposed Action would have “no effect” on endangered, threatened, or candidate species. While the project is within the range of the species, they have determined that less than 15 acres of trees would be cleared, and it is unlikely that these bat species would occur within the project area. Therefore, a Biological Assessment would not be necessary and further Section 7 Consultation with USFWS would not be required. A copy of this correspondence is provided in Appendix B.

Additionally, the MD Department of Natural Resources Wildlife and Heritage Service determined that there are no official State or Federal records for listed plant or animal species within the project area and, therefore, no specific concerns regarding potential impacts or recommendations for protection measures unless the project area changes. Therefore, the Proposed Action would have no adverse impact on rare, threatened, or endangered species.

5.8.3.2 No Action

Under the No Action alternative, there would be no changes to existing habitat. Thus, there would be no impact to rare, threatened, or endangered species.

5.8.4 Aquatic Habitat

Significant adverse impacts to aquatic species and habitat would occur if the Proposed Action would (1) cause an exceedance of a Total Maximum Daily Load, (2) cause a change in impairment status of a surface water or (3) cause an unpermitted direct impact on a water of the US.

5.8.4.1 Impacts from the Proposed Action

The Proposed Action would improve the SWM facility by increasing its size to account for additional increases in stormwater volume associated with the new barracks. However, the improvements would not

cause an exceedance of the TMDLs, change the impairment status, or create an unpermitted impact on waters of the US. Thus, the Proposed Action would have no impact on these specific factors as they relate to aquatic habitat.

5.8.4.2 No Action

Under the No Action alternative, there would be no changes to existing conditions. Planned maintenance of the SWM pond could occur. This maintenance would not cause an exceedance of the TMDLs, change the impairment status, or create an unpermitted impact on waters of the US. Thus, the Proposed Action would have no impact on these specific factors as they relate to aquatic habitat.

5.9 CULTURAL RESOURCES

Adverse effects on historic properties as a result of the Proposed Action include the following:

- Physical destruction of or damage to all or part of the property.
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous substance remediation, and provision of handicapped access, which is not consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR Part 68) and applicable guidelines.
- Removal of the property from its historic location.
- Change of the character of the property's use or of physical features within its setting that contribute to its historic significance.
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

5.9.1 Impacts from Construction and Operation of Proposed Action

No historic properties have been identified within the three project sites. However, there is the potential for adverse impacts to cultural resources in the event of an inadvertent discovery during construction work that requires vegetation removal or causes subsurface disturbance. To ensure potential impacts to historical and archaeological sites are avoided, FMMD initiated Section 106 consultation with the Maryland State Historic Preservation Officer (SHPO) to ascertain potential impacts of the Proposed Action to historical and archaeological sites prior to implementing the Proposed Action. On December 28, 2020, the Maryland Historical Trust issued a letter of determination stating that the project would have “no effect” on historic properties and that the federal and/or State historic preservation requirements have been met. A copy of the letter is included in Appendix B.

Additionally, to minimize the potential impact to previously unknown cultural resources during subsurface work, FMMD would implement an “Accidental Discovery” plan to comply with the NHPA, Archaeological Resources Protection Act of 1979, NAGPRA, American Indian Religious Freedom Act, 36 CFR Part 79, and Executive Order 13007: Indian Sacred Sites. Under this plan, if prehistoric or historic artifacts that could be associated with Native American, early European, or American settlement are encountered at any time during construction or operation of the expansion areas, FMMD would cease all activities involving subsurface disturbance in the vicinity of the discovery. Should human remains or other cultural items, as defined by NAGPRA, be discovered during project construction, construction work would immediately cease until the FMMD Cultural Resources Manager, Maryland SHPO, and selected Native American Tribes are contacted to properly identify and appropriately treat discovered items in accordance with applicable state and federal law(s). Implementation of these measures would ensure that the Proposed Action would have “No Adverse Effect” on historic properties or cultural resources.

No additional impacts are anticipated from operation and maintenance of the Proposed Action.

5.9.2 No Action

Under the No Action alternative, existing conditions would remain unchanged for the foreseeable future. There would be no intentional ground disturbances that could impact archaeological, architectural, or Native American resources. Thus, the No Action alternative would have no impact on cultural resources.

5.10 HAZARDOUS, TOXIC, AND RADIOACTIVE SUBSTANCES

The significance of potential impacts associated with hazardous materials and wastes is based on the toxicity, transportation, storage, and disposal of these substances. Hazardous materials and waste impacts would be considered significant if the storage, use, transportation, or disposal of these substances substantially increases the human health risk or environmental exposure.

5.10.1 Impacts from Construction of Proposed Action

Hazardous, toxic, or radioactive substances would not be used during the construction of the proposed barracks projects, therefore the Proposed Action would not have any mechanism for impact from these resources. To minimize the potential for a release of petroleum-based fluids (i.e., diesel fuel, hydraulic fluid) from construction equipment to the environment, all construction equipment would be maintained in good working order by the contractor daily. Should an accidental release of a hazardous material occur, construction equipment would be equipped with an emergency spill kit and workers would be trained on how to properly deploy the equipment to respond to a release. Additionally, all construction equipment would be refueled in a designated impervious area and away from pervious grounds.

An action that resulted in a new accidental release or spill resulting from construction, depending on the type and severity, could be subject to state, federal, and FMMD guidelines including DPW's Spill Prevention Control Countermeasure Plan/Installation Spill Contingency Plan, Hazardous Waste Management Plan, or Oil Control Program as previously detailed in Section 4.10. An action that resulted in a discovery of previous contamination may have to be added to the IRP and could be subject to the CERCLA process. Although there is no known contamination present that would impact construction of the Proposed Action, should any unusual odor, soil condition or waste/storage tank/buried debris of any kind be encountered during site work activities, a "stop work" would be executed and the condition would be immediately reported to the DPW Environmental Division (DPW-ED) to get further instructions.

Any solid waste, including excess vegetation or sediment debris, would be properly composted, reused, or disposed of at a permitted facility. Additionally, all contractors involved in the construction of the barracks would be responsible for adhering to FMMD's policies and procedures, as well as state and federal regulations for storage, handling, and disposal of non-hazardous wastes.

Thus, construction of the Proposed Action would have no impact on hazardous, toxic, and radioactive resources.

5.10.2 Impacts from the Operation of the Proposed Action

The Proposed Action would have no impact on hazardous, toxic, and radioactive resources. Operational maintenance activities would include the use of household cleaners, landscaping equipment, and similar conventional non-hazardous, non-toxic, and non-radioactive supplies.

5.10.3 No Action

Under the No Action Alternative, the Proposed Action would not be implemented. Existing conditions would remain unchanged for the foreseeable future. Repeated treatments of chlorine wash to the antiquated barracks would be continued to suppress the growth of mold and mildew resulting from failing roofs. Thus, there would be no new impacts to hazardous, toxic, and radioactive resources at FMMD.

5.11 TRAFFIC AND ROADWAYS

A project is considered to have a significant effect on traffic and roadways if the additional traffic caused by the Proposed Action results in a decrease in Level of Service (LOS). In addition, a project may contribute toward a substantial cumulative effect if its traffic, when taken together with traffic from past, present, and reasonably foreseeable future projects, causes intersection LOS to decline.

5.11.1 Impacts from Construction of the Proposed Action

The Proposed Action would have a temporary, negligible, direct, adverse impact on traffic and roadways in the form of construction traffic within the boundaries of the post. Construction of the barracks would not impact any transportation infrastructure outside of FMMD and therefore have no impact on LOS.

The roadway network within FMMD provides sufficient access for any heavy equipment that may be required for the construction phase of the Proposed Action, therefore none of the equipment used to construct the barracks or transport materials to the proposed sites would require modifications to transportation infrastructure or traffic patterns. The number of construction workers associated with the project would add a negligible increase (less than 1% increase) in overall traffic volume within FMMD daily.

To ensure that construction vehicles do not degrade the quality of the roadways within FMMD, gravel construction pads would be installed at the construction site exit to ensure dirt would be physically removed (including using brushes and/or water) from construction equipment before the equipment travels on FMMD roadways.

The FMMD Draft Area Development Plan includes the goal of improving the transportation network for motorists and pedestrians by constructing sidewalks on Rockenbach and O'Brien roads, upgrading the Access Control Point on Mapes Road, and widening Mapes Road for better traffic circulation, pedestrian use, and safety. Housing Service members on-post would increase the opportunity for greater usage of these sidewalks by pedestrians and making roads safer for bicyclists.

The Proposed Action could require the decommissioning of a portion of Dutt Road, which is a secondary road. The removal of this road within FMMD is not expected to impact the FMMD transportation network.

5.11.2 Impacts from Operation of the Proposed Action

The Proposed Action would have a long-term, minor, direct, beneficial impact on traffic and roadways as the housing of 1,600-1,800 Service members on base would reduce commuter traffic associated with Service members who currently live off-post and who travel to and from FMMD daily. The current plan for Phase I would accommodate 266 parking spaces, which meets the requirement to provide parking for 70% of the 380 total occupants for this phase. Once all three phases are complete, total parking for all three phases would thereby equal 1,260 parking spaces for the upward limit of 1,800 residents. . The operational phase would not require modifications to traffic or roadway conditions at FMMD.

5.11.3 No Action

The No Action Alternative would have a long-term, direct, minor, adverse impact on traffic and roadway conditions at FMMD. As existing barracks continue to degrade, there would be an anticipated increase of Service members living off-post, resulting in an increase in vehicular traffic to and from FMMD and in the demand for parking at FMMD. FMMD roadway and parking areas would continue to be subject to daily commuter traffic from Service members housed off-post.

5.12 INFRASTRUCTURE AND UTILITIES

The Proposed Action would result in significant adverse impacts to infrastructure and utilities if it:

- (1) reduces water availability or supply to existing users,
- (2) results in noncompliance with the existing FMMD solid waste management plan,
- (3) overdrafts ground water basins, or
- (4) exceeds safe annual yield of water or energy supply sources.

5.12.1 Impacts from Construction of the Proposed Action

The Proposed Action is anticipated to have short-term, negligible, direct, adverse impacts to potable water, wastewater, solid waste, electrical, and communication utilities during the period of construction of up to nine new buildings. During construction, existing power lines would be accessed for connecting new service lines or temporarily moved. Construction activities could also result in localized short-term disruptions to water service as existing buried water lines are accessed for connecting new water service lines to the new barracks. Possible localized short-term disruptions to sanitary sewage service could also result from construction activities due to accessing the existing underground sanitary sewer lines for connecting new lines. Construction would generate debris which would then need to be disposed of in accordance with relevant federal, state, local, and post regulations. Construction material would be recycled or reused to the greatest extent possible. Debris that cannot be recycled or reused would be taken off-post by the contractor to an approved landfill. These temporary impacts would cease with the completion of construction activities.

5.12.2 Impacts from Operation of the Proposed Action

The Proposed Action would result in both long-term, direct, negligible adverse and beneficial impacts on infrastructure and utilities. The adverse impact would result from the additional demands created by up to 1,600-1,800 new residents in nine new barracks on utilities including potable water, wastewater, solid waste, electrical, and communication distribution and supply. However, the new barracks would utilize efficient building construction technology and operational systems. Heating and air conditioning would be by a dedicated HVAC system with improvements in energy efficiency, resulting in relatively lower energy consumption than older systems. Electrical power requirements would be provided by BG&E and would not increase over current usage. Additionally, the electrical distribution system would be relocated underground in keeping with current standards of the Installation Design Guidelines. The distribution system is currently operating below capacity. However, the design of the new barracks would be designed to meet any new capacity. The new buildings would be designed to meet applicable Army energy conservation standards and practices and would consider the use alternative fuel systems including solar energy. Water consumption at FMMD would increase, but low-flow fixtures would be installed to minimize demand requirements. Additional demand would be placed on the existing sewer system, but it is adequate to support the new demand.

5.12.3 No Action

Under the No Action Alternative existing conditions at the lots would remain unchanged for the foreseeable future, resulting in no impacts to infrastructure or utilities.

5.13 SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND PROTECTION OF CHILDREN

Impacts to socioeconomic, environmental justice and the protection of children would be considered significant if they were to cause substantial change to the sales volume, income, employment, or population in the ROI. For this Proposed Action and resource, the ROI is defined as FMMD. This ROI was selected because it best represents the geographic area where impacts could occur. Due to large scale developments

in the region, the Proposed Action is not likely to impact socioeconomic conditions on a regional basis; the Proposed Action is far too small in terms of population served and economic activity.

Socioeconomic considerations typically include construction costs and the local economic benefits consequent to increases in personnel. Economic impacts are defined to include direct effects, such as changes to employment and expenditures that affect the flow of dollars into the local economy and indirect effects, which result from the “ripple effect” of spending and re-spending in response to the direct effects. Induced impacts are the result of spending of the wages and salaries of the direct and indirect employees on items such as food, housing, transportation, and medical services. This spending creates induced employment in nearly all sectors of the economy, especially service sectors, and can flow outside of the ROI.

This analysis also addresses potential disproportionately high and adverse impacts to minority and/or low-income populations consistent with EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, and environmental health and safety risks to children consistent with EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*.

5.13.1 Socioeconomics

5.13.1.1 Impacts from Construction of the Proposed Action

Short-term, minor, direct, beneficial impacts to socioeconomics are expected from the Proposed Action during the construction period, as jobs created from the construction of the Proposed Action would generally stimulate economic activity within the ROI, such as spending at restaurants within FMMD. An indirect benefit outside the ROI would also occur due to wages and spending on building materials. The Rough Order of Magnitude cost of the project is estimated to be \$81 million and would be implemented in three phases at \$26 million per phase (FMMD 2020).

Phase I is currently at 100% design and is under review. An engineering firm was contracted to prepare construction design plan options for two (2), four-story barracks, approximately 80,000 square feet each, to house 190 Service members each for a total of 380 Service members. Following design approval, FMMD would hire a qualified firm to construct the selected barracks design. The construction process is slated to take place in FY 22/23 and would take approximately two years. Also included in Phase I is the redesign of the current stormwater infrastructure and existing stormwater management pond, which serves the Freedom Barracks, to accommodate the additional discharges anticipated from the Proposed Action. Phase II and III construction activities are estimated to occur in FY 24/25. A Phase IIb construction is estimated in FY31 for a third barracks-to replace the barrack excluded from the preliminary Phase I design-to be constructed within one of the three project sites.

Therefore, while the economic benefits would be beneficial to the employees of the firms selected to implement the barracks construction work, the overall impact on socioeconomic conditions at FMMD and within Anne Arundel County would be minor. Additionally, neither the design work nor construction activities would induce changes in employment, housing, or demands on education or community resources within the community because the time frame of the work is of a short duration, such that temporary or permanent relocation of families would not be reasonably anticipated to occur as a result of the Proposed Action.

5.13.1.2 Impacts from Operation of the Proposed Action

Long-term, indirect, minor adverse and long-term significant beneficial impacts may result from the Operations of the Proposed Action. There would be a significant beneficial impact to the Army, as the need for housing Service members off-post would be eliminated, at a cost of approximately \$60M annually. The Proposed Action would improve cohesiveness for the E1-E6 ranks (Service members) by providing modern, co-located housing on-post. These Service members are required by regulation to live on-post to promote improved morale and increase human health & safety. There would be a minor adverse impact to the private off-site housing market from the loss of tenants and revenue; this impact would persist until new

tenants are secured. However, long-term, significant, direct, beneficial impacts to the Army would result as the provision of a new, modern, well-designed facility would be a significant improvement for the Army's investment, materially reducing operating costs. These savings in costs and improved investments to the Army would increase with each succeeding phase of replacement.

5.13.1.3 No Action

Under the No Action Alternative, existing conditions would remain unchanged. Existing rental market conditions in Anne Arundel County would be unchanged. However, long-term, direct, significant adverse impacts to the Army's cost expenditures to fund off-site housing allowances would continue for the foreseeable future. Personnel would continue to either live off-post or on-post in sub-standard, antiquated barracks which are dilapidated. The interior of the barracks and the antiquated systems would continue to deteriorate, requiring increased maintenance over time. This scenario would continue the current noncompliance with the Army policy of housing lower enlisted ranks on-post where command presence can ensure Soldier safety, welfare, and morale, particularly for young Soldiers.

5.13.2 Environmental Justice

This EA has identified no environmental or health effects that would disproportionately affect minority or low-income populations. Therefore, there is no mechanism for impact to environmental justice that would occur as a result of either construction or operation of the Proposed Action.

5.13.3 Protection of Children

This EA has identified no environmental health and safety risks that would disproportionately affect children. All proposed construction and operations would be carried out in areas where few or no children reside or visit. Temporary construction safety fencing would be erected around the construction area, preventing unauthorized access to the site by any age group, including children. During operation, access into the building would be restricted to authorized personnel, none of whom would be children. Therefore, there is no mechanism for impact to children that would occur as a result of either construction or operation of the Proposed Action.

5.14 CUMULATIVE IMPACTS

5.14.1 Definition of Cumulative Impacts

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

Cumulative impacts are most likely to arise when a relationship or synergism exists between a Proposed Action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in close proximity to the Proposed Action would be expected to have more potential for a relationship than those more geographically separated. Similarly, actions that coincide, even partially, in time would tend to offer a higher potential for cumulative impacts.

To identify cumulative impacts the analysis needs to address three fundamental questions:

- Does a relationship exist such that affected resource areas of the Proposed Action might interact with the affected resource areas of past, present, or reasonably foreseeable actions?

- If one or more of the affected resource areas of the Proposed Action and another action could be expected to interact, would the Proposed Action affect or be affected by impacts of the other action?
- If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the Proposed Action is considered alone?

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. For this EA, the geographic extent of the cumulative effects analysis is the FMMD property. **Table 19** identifies projects occurring within the same general time frame at FMMD and whose effects, when added to those of the Proposed Action, may result in cumulative effects. The following subsections include a discussion of potential cumulative impacts by environmental resource area.

Table 19. Actions at FMMD Potentially Causing Cumulative Effects of Importance

Project	Description
FMMD Stream Improvements Project	Restoration of eight impaired stream reaches in Midway Branch, Franklin Branch, Rogue Harbor, and Severn Run watersheds at FMMD to improve water quality, reduce flooding, enhance fish habitat, prevent further stream degradation, and provide numerous co-benefits for FMMD and neighboring communities, while also helping FMMD maintain compliance with federal and state water quality requirements. Total combined design and construction costs are expected to be approximately \$1.57 million for the Severn Run reach.
Operations Facility	Construct a new two-story operational building with associated parking on available space within the southeast portion of Meade and is disconnected from the nearest Proposed Action location.
Programmatic EIS for a Tenant Organization at FMMD	Final Environmental Impact Statement (EIS) completed in 2017 for a new operational complex. The analysis included the demolition of antiquated barracks, thus spurring the need for the Proposed Action.
Proposed Road Improvements at FMMD	November 2017 EA completed for eleven road improvement projects within FMMD. Projects include the widening of Cooper Avenue and Rose Street from two to four lanes to increase safety, efficiency, and traffic flow and connect primary roads and widening of Reece Road where the new four lane road ends. Sidewalks would be rebuilt to regulation and design standards. All projects would include stormwater management (SWM), Low-Impact Development (LID), and landscaping (including street trees, lighting, and street furniture) would be added in accordance with Maryland state law, Army and Installation Design Guidelines, policy and regulations.

5.14.2 Potential Cumulative Impacts by Environmental Resource Area

The following analysis examines the potential cumulative impacts on the natural and human-made environment that would result from the cumulative impact of the Proposed Action, in combination with the other actions described above. Based on the assessment of past, present, and reasonably foreseeable future actions at and in the vicinity of the proposed barracks projects at FMMD, a limited number of resource

topics analyzed in this EA would be reasonably expected to experience cumulative impacts: these are land use and stormwater at FMMD.

The cumulative impacts on these resources are expected to be beneficial on a long-term basis. Impacts on all other resources would be temporary and confined to the construction phases of the projects. Thus, all other environmental resource topics were omitted from impact analysis because temporary, negligible, or no environmental impacts would occur when considered on a cumulative basis.

5.14.2.1 Land Use

Together, the Proposed Action, in combination with the other construction projects listed in Table 19, could cumulatively result in the loss of open space at FMMD. However, implementation of the Proposed Action would be consistent with existing designated land uses and policies. The projects are converting underutilized vacant lots to more productive use in keeping with the nature of the surrounding areas. The buildings are considered improvements as well as replacements for outdated and dilapidated structures located elsewhere on the campus, making way for more beneficial uses. As such, no adverse cumulative impacts to land use are expected.

5.14.2.2 Stormwater

Development projects at FMMD that individually or collectively increase stormwater volume beyond the capacity of the existing facilities for stormwater retention would be considered a detriment. This would occur due to increased impervious surfaces, leading to the impairment of the existing stormwater pond. The renovation of the existing stormwater retention pond (as part of the Proposed Action) would benefit the management of stormwater from the proposed barracks area and other areas of FMMD. Thus, considered from a cumulative basis, the Proposed Action would result in a long-term, beneficial impact for this area of FMMD.

5.14.3 No Action

The No Action Alternative would result in increasingly significant adverse cumulative environmental impacts occurring to land use and stormwater. As development within FMMD continues, there is likely to be an increase in impervious surfaces and stormwater run-off requiring management. Improvements to the stormwater retention pond would therefore be of benefit whenever they occur, as would improvements to the landscape including the removal of nuisance plant and tree species.

6 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

As described throughout Section 5 of this EA, the construction and operation of the Proposed Action would not generate any significant adverse impacts, while significant beneficial impacts would be achieved during operation of the Proposed Action. Therefore, an Environmental Impact Statement is not warranted.

As detailed in this EA, less-than-significant adverse impacts would result from construction activities associated with the Proposed Action. Impacts would be temporary, lasting approximately six months during the construction phase for each phase of the project. The intensity of the adverse impacts would be limited to the area immediately surrounding the three building sites. Additionally, the number of receptors would be limited to a relatively small number of Service members, staff, and personnel within FMMD. These adverse impacts would end once the construction phases are completed.

During operation, long-term, significant, beneficial impacts would be realized because of the efficient functioning of the new residential buildings and facilities. On a cumulative basis, the three building phases would require minor, routine operational building and grounds maintenance and would improve the visual landscape. Additionally, the restoration of the stormwater run-off facility would enhance the FMMD watershed functions and values beyond the Proposed Action area. **Table 20** summarizes the potential consequences the Proposed Action and No Action Alternative would have on resources evaluated in the EA.

Table 20. Summary of Environmental Consequences

Resource	Construction	Operation	No Action
Land Use	Short-term, negligible, direct, adverse impact	Long-term, minor, direct, and indirect, beneficial impact	No impact
Visual Resources	Short-term, moderate, direct, adverse impact	Long-term, moderate, direct, beneficial impact	No impact
Soils	Short-term, minor, direct, adverse impact	Long-term, minor, direct, adverse impact	No impact
Noise	Short-term, minor, direct, adverse impact	Long term, negligible, direct, adverse impact	No impact
Air Quality	Temporary, minor, direct, adverse impact	Long-term, negligible, direct, adverse impact	Long-term, minor adverse impact
Water Resources	Short-term, negligible, direct, adverse impacts to surface water from sedimentation of stormwater run-off. No impact on floodplains. Short-term, indirect, negligible, adverse impact on groundwater from incidental spills. No impact on coastal zone resources. Long-term, moderate, direct, adverse impact on	No adverse impacts to surface water. No impact on floodplains. Long-term, indirect, negligible, adverse impact on groundwater from loss of recharge area. No impact on coastal zone resources or wetlands. Long-term, moderate, direct, beneficial impact on the improved SWM pond.	No impact

Resource	Construction	Operation	No Action
	wetlands impacted by SWM pond retrofit.		
Biological Resources	Permanent, minor, direct, adverse impact on vegetation and terrestrial species; No impact on RTE species or aquatic species and habitat	Long-term, minor, direct, beneficial impacts on vegetation, negligible, permanent, direct, adverse impacts on terrestrial wildlife, no impact on rare, threatened, or endangered species or aquatic species and habitat	Long-term, minor, direct, adverse impacts on vegetation; no impact on terrestrial species, RTE species, or aquatic species and habitat
Cultural Resources	No impact	No impact	No impact
Hazardous, Toxic, and Radioactive Resources	No impact	No impact	No impact
Traffic and Roadways	Temporary, negligible, direct, adverse impact	Long-term, minor, direct, beneficial impact	Long-term, direct, minor, adverse impact
Infrastructure and Utilities	Short-term, negligible, direct, adverse impact	Long-term, negligible, direct, adverse impact on selected utilities.	No impact
Socioeconomics, Environmental Justice, and Protection of Children	Short-term, minor, direct, beneficial impacts on Socioeconomics. No impact on Environmental Justice or Protection of Children	Long-term, minor, adverse impact on Socioeconomics to private housing market. Long-term, significant beneficial socioeconomic impact to Army in reduced off-site housing costs. No impact on Environmental Justice or Protection of Children.	Long-term, direct, significant, adverse impacts to the Army's cost expenditures for off-site housing allowances.

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8 ACRONYMS AND ABBREVIATIONS

Acronym	Definition
ACM	Asbestos Containing Materials
ACR	Armored Cavalry Regiment
AIRFA	American Indian Religious Freedom Act of 1987
ARPA	Archaeological Resource Protection Act of 1979
BG&E	Baltimore Gas and Electric
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environment Response, Compensation and Liability Act
CFR	Code of Federal Regulations
COMAR	Code of Maryland Regulations
CWA	Clean Water Act
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
DNL	Day night level
DPW	Department of Public Works
EA	Environmental Assessment
EISA	Energy Independence and Security Act
EO	Executive Order
ESA	Endangered Species Act
ESCP	Erosion and Sediment Control Plan
ESD	Environmental Site Design
FCA	Forest Conservation Act
FEMA	Federal Emergency Management Agency
FIRMs	Flood Insurance Rate Maps
FMMD	Fort George G. Meade
FNSI	Finding of No Significant Impact
FY	Fiscal Year
GCR	General Conformity Review
GPM	Gallons Per Minute
HAP	Hazardous Air Pollutants
HVAC	Heating, Ventilation, and Air Conditioning
ICRMP	Integrated Cultural Resources Management Plan
IMCOM	US Army Installation Management Command
INRMP	Integrated National Resource Management Plan
IRP	Installation Restoration Program
ISCP	Installation Spill Contingency Plan
LBP	Lead-based Paint
LID	Low-Impact Development
LOS	Level of Service
MD	Maryland
MDE	Maryland Department of the Environment
MEC	Munitions and Explosives of Concern
MGD	Million gallons per day

MHT	Maryland Historic Trust
MMRP	Military Munitions Response Program
MRA	Munitions Response Areas
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves and Repatriation Act of 1979
NEPA	National Environmental Policy Act
NFA	No further action
NHPA	National Historic Preservation Act
NLEB	Northern Long-eared Bat
NO _x	Nitrogen Oxides
NPL	National Priorities List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
OTR	Ozone Transport Region
PM	Particulate Matter
POW	Prisoner of War
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
RONA	Record of Non-Applicability
RTE	Rare, Threatened or Endangered
SCAB	South Coast Air Basin
SCAQMD	California South Coast Air Quality Management District
SF	Square Foot
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SPCCP	Spill Prevention Control and Countermeasures Plan
SWM	Stormwater Management
TMDL	Total Maximum Daily Load
TSCA	Toxic Substances Control Act
TSS	Total Suspended Solids
UEPH	Unaccompanied Enlisted Personnel Housing
US	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOC	Volatile Organic Compound
WWII	World War II
WWTP	Wastewater Treatment Plant

9 LIST OF PREPARERS

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APPENDICES

Appendix A

USACE Baltimore District Site Reports



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

IMME-PWE

24 June 2020

MEMORANDUM FOR U.S. Army Corps of Engineers, Programs and Project Management Division, Military Branch (Project Manager David Robbins), P.O. Box 1715 Baltimore, MD 21203-1715

SUBJECT: Identification of Site and Environmental Considerations for Unaccompanied Enlisted Personnel Housing Barracks, Phase 3a and Phase 3b, FY 2022, PN 87647.

1. The following information is provided in response to the U.S. Army Corps of Engineers (USACE) email dated 25 Mar 2020, requesting information for the above project.

2. In accordance with Army policy, the Installation is providing the following documentation in support of design of subject project:

- a. **Construction Site Categorization:** *Category I.* Design/ construct two, four-story barracks buildings at the parcel bordered by Zimborski Avenue, Dutt Road and Hodges Street, Fort Mead, MD. The site qualifies as *Category I* - There is no reason to expect contamination will be encountered during the construction.

There are no active Installation Restoration Sites within this area.

- b. **Wetland Verification:** There are no wetlands or wetland buffers on the site. Forested wetlands exist offsite, proximate to the existing stormwater pond.
- c. **Floodplain Verification:** There are no floodplains on site.
- d. **Historic/Cultural Preservation Requirements:** The proposed project will have no impact on historic or cultural resources.
- e. **National Environmental Policy Act (NEPA) Documentation:** The project proponent will be required to prepare an Environmental Assessment (EA) as defined in Subpart E, 32 CFR Part 651 "Environmental Analysis of Army Actions".
- f. **Site Plan** – The USACE has copies of the general site plan.
- g. **Munitions and Explosives of Concern (formerly Unexploded Ordnance):** The project site is not located within areas of military munitions or explosives of concern or historic range areas. However, although historic range areas have been identified and studied, old ammunition and ordnance items may still be found elsewhere on the installation.

IMME-PWE

SUBJECT: Identification of Site and Environmental Considerations for Unaccompanied Enlisted Personnel Housing Barracks, Phase 3a and Phase 3b, FY 2022, PN 87647

- h. **Threatened and Endangered Species:** The presence of one threatened species (Northern Long-eared Bat) and one endangered species (Indiana Bat) have been acoustically detected on Fort Meade. No hibernaculum or summer roost trees have been identified on Fort Meade or in Anne Arundel County, MD. Tree clearing for this project may be coordinated with US Fish and Wildlife through the DPW Environmental Division and may be subject to restrictions during the Northern Long Eared Bat pup season (1 June to 31 July).
 - i. **Stormwater Facilities:** The project would impact up to two existing tree box filter total maximum daily load (TMDL) facilities that were installed in 2018 and 2019. The project proponent will be required to obtain a stormwater management permit from the Maryland Department of the Environment (MDE) and provide a replacement plan for the 0.5 TMDL credit assigned to the tree box filters. The stormwater retention pond and the concrete ditch leading to it located east of Taylor Road is available for modification to meet stormwater management requirements and is included in the Limits of Disturbance of this project.
- 3. In addition, the following certifications were not applicable (NA) due to the project site being void of buildings and structures.
 - a. Asbestos-Containing Materials – NA
 - b. PCBs in transformer oils – NA
 - c. Lead Painting – NA
 - d. Insect Infestation – NA
 - e. Radon – NA
- 4. Mitigation will be required per the current Fort Meade Forest Conservation Act and Tree Mitigation Policy. The project proponent will be required to submit an Erosion and Sedimentation plan to MDE for approval. Impacts to regulated wetlands and/or buffers would require submitting a Joint Permit Application to MDE and USACE Regulatory for approval.
- 5. Point of Contact is the undersigned at (301) 677-9188.

John W. Houchins
Chief, Environmental Division
Directorate of Public Works



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

IMME-PWE

15 Apr 2020

MEMORANDUM FOR U.S. Army Corps of Engineers, Programs and Project Management Division, Military Branch (Project Manager David Robbins), P.O. Box 1715 Baltimore, MD 21203-1715

SUBJECT: Identification of Site and Environmental Considerations for Unaccompanied Enlisted Personnel Housing Barracks, Phase 3a and Phase 3b, FY 2021, PN 87647.

1. The following information is provided in response to the U.S. Army Corps of Engineers (USACE) email dated 25 Mar 2020, requesting information for the above project.

2. In accordance with Army policy, the Installation is providing the following documentation in support of design of subject project:

- a. **Construction Site Categorization:** *Category I.* Design/ construct three four-story barracks buildings at the parcel located at Simonds Street, Taylor Avenue and York Avenue, Fort Mead, MD. The site qualifies as *Category I* - There is no reason to expect contamination will be encountered during the construction.

There are no active Installation Restoration Sites within this area.

- b. **Wetland Verification:** There are no wetlands or wetland buffers on the site.
- c. **Floodplain Verification:** There are no floodplains on site.
- d. **Historic/Cultural Preservation Requirements:** The proposed project will have no impact on historic or cultural resources.
- e. **National Environmental Policy Act (NEPA) Documentation:** The project proponent will be required to prepare an Environmental Assessment (EA) as defined in Subpart E, 32 CFR Part 651 "Environmental Analysis of Army Actions".
- f. **Site Plan** – The USACE has copies of the general site plan.
- g. **Munitions and Explosives of Concern (formerly Unexploded Ordnance):** The project site is not located within areas of military munitions or explosives of concern or historic range areas. However, although historic range areas have

IMME-PWE

SUBJECT: Identification of Site and Environmental Considerations for Unaccompanied Enlisted Personnel Housing Barracks, Phase 3a and Phase 3b, FY 2021, PN 87647.

been identified and studied, old ammunition and ordnance items may still be found elsewhere on the installation.

- h. **Threatened and Endangered Species:** The presence of one threatened species (Northern Long-eared Bat) and one endangered species (Indiana Bat) have been acoustically detected on Fort Meade. No hibernaculum or summer roost trees have been identified on Fort Meade or in Anne Arundel County, MD. Tree clearing for this project may be coordinated with US Fish and Wildlife through the DPW Environmental Division and may be subject to restrictions during the Northern Long Eared Bat pup season (1 June to 31 July).
- i. **Stormwater Facilities:** There are no existing stormwater facilities on the site. The remnants of two former bioretention ponds are visible on the east and west side of the parcel. The ponds were installed when a number of modular buildings were placed on the parcel during the construction of offsite classrooms for DINFOS. The ponds were abandoned, dry and filled with vegetation. The project proponent will be required to obtain a stormwater management plan from the Maryland Department of the Environment (MDE).

3. In addition, the following certifications were not applicable (NA) due to the project site being void of buildings and structures.

- a. Asbestos-Containing Materials – NA
- b. PCBs in transformer oils – NA
- c. Lead Painting – NA
- d. Insect Infestation – NA
- e. Radon – NA

4. Mitigation will be required to impact trees and/or forested areas. The project proponent will be required to submit an Erosion and Sedimentation plan to MDE for approval.

5. Point of Contact is the undersigned at (301) 677-9188.

John W. Houchins
Chief, Environmental Division
Directorate of Public Works



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

IMME-PWE

10 Apr 2020

MEMORANDUM FOR U.S. Army Corps of Engineers, Programs and Project Management Division, Military Branch (Project Manager David Robbins), P.O. Box 1715 Baltimore, MD 21203-1715

SUBJECT: Identification of Site and Environmental Considerations for Unaccompanied Enlisted Personnel Housing Barracks, Phase II, FY 2025, PN60179.

1. The following information is provided in response to the U.S. Army Corps of Engineers (USACE) email dated 25 Mar 2020, requesting information for the above project.

2. In accordance with Army policy, the Installation is providing the following documentation in support of design of subject project:

- a. **Construction Site Categorization:** *Category I*. Design/ construct three, four-story barracks buildings at the parcel located at Zimborski Avenue and 6th Armored Cavalry Road, Fort Meade, MD. The site qualifies as *Category I* - There is no reason to expect contamination will be encountered during the construction.

There are no active Installation Restoration Sites within this area. There are two monitoring wells located on the southwest area of the site. These wells could be abandoned in place, subject to Maryland Department of the Environment (MDE) and U.S. Environmental Protection Agency approval.

- b. **Wetland Verification:** There are no wetlands or wetland buffers on the site.
- c. **Floodplain Verification:** There are no floodplains on site.
- d. **Historic/Cultural Preservation Requirements:** The proposed project will have no impact on historic or cultural resources.
- e. **National Environmental Policy Act (NEPA) Documentation:** The project proponent will be required to prepare an Environmental Assessment (EA) as defined in Subpart E, 32 CFR Part 651 "Environmental Analysis of Army Actions".
- f. **Site Plan:** The USACE has copies of the general site plan.

SUBJECT: Identification of Site and Environmental Considerations for Unaccompanied Enlisted Personnel Housing Barracks, Phase II, FY 2025, PN60179

g. **Munitions and Explosives of Concern (formerly Unexploded Ordnance):**

A 16-acre Former Grenade and Bayonet Range did exist in the vicinity and was believed to have been used from 1924 until the late 1930's. It is assumed that hand grenades were used on site and could have included fragmentation and practice hand grenades. No explosives were detected in soil samples, and there is no physical evidence of MEC or munitions debris. The EPA approved or concurred that No Further Action was required on 13 June 2007.

h. **Threatened and Endangered Species:** The presence of one threatened species (Northern Long-eared Bat) and one endangered species (Indiana Bat) have been acoustically detected on Fort Meade. No hibernaculum or summer roost trees have been identified on Fort Meade or in Anne Arundel County, MD. Tree clearing for this project may be coordinated with US Fish and Wildlife through the DPW Environmental Division and may be subject to restrictions during the Northern Long Eared Bat pup season (1 June to 31 July).

i. **Stormwater Facilities:** The project proponent will be required to obtain a stormwater management permit from the MDE.

j. **Other Facilities:** A washrack and oil separator are located off Dutt Road, outside the fence of the Marine Corps training course. Also located at the washrack is a fill station owned and operated by American Water.

3. In addition, the following certifications were not applicable (NA) due to the project site being void of buildings and structures.

- a. Asbestos-Containing Materials – NA
- b. PCBs in transformer oils – NA
- c. Lead Painting – NA
- d. Insect Infestation – NA
- e. Radon – NA

4. Mitigation will be required for impacted trees and/or forested areas. The project proponent will be required to submit a stormwater management and erosion and sedimentation plan to MDE for approval.

SUBJECT: Identification of Site and Environmental Considerations for Unaccompanied Enlisted Personnel Housing Barracks, Phase II, FY 2025, PN60179

5. Point of Contact is the undersigned at (301) 677-9188.

John W. Houchins
Chief, Environmental Division
Directorate of Public Works

Appendix B

Regulatory Correspondence

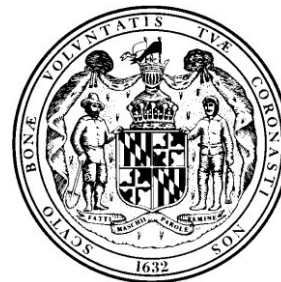
STATE OF MARYLAND
DEPARTMENT OF THE ENVIRONMENT
WATER AND SCIENCE ADMINISTRATION
LETTER OF AUTHORIZATION

AUTHORIZATION NUMBER: 21-NT-0390/202161088

EFFECTIVE DATE: October 25, 2021

EXPIRATION DATE: October 25, 2026

AUTHORIZED PERSON: Directorate of Public Works
4216 Roberts Avenue-STE 5115
Fort George G. Meade, MD 20755
Attn: Randy Williams



IN ACCORDANCE WITH ENVIRONMENT ARTICLE §5-503(a) AND §5-906(b), ANNOTATED CODE OF MARYLAND (2007 REPLACEMENT VOLUME), COMAR 26.17.04 AND 26.23.01, AND 26.08.02 AND THE ATTACHED CONDITIONS OF AUTHORIZATIONS, Directorate of Public Works (AUTHORIZED PERSON"), IS HEREBY AUTHORIZED BY THE WATER AND SCIENCE ADMINISTRATION ("ADMINISTRATION") TO CONDUCT A REGULATED ACTIVITY IN A NONTIDAL WETLAND, BUFFER, OR EXPANDED BUFFER, AND/OR TO CHANGE THE COURSE, CURRENT OR CROSS-SECTION OF WATERS OF THE STATE, IN ACCORDANCE WITH THE ATTACHED PLANS APPROVED BY THE ADMINISTRATION ON Whitman, Requardt & Associates LLP ("APPROVED PLAN") AND PREPARED BY October 12, 2021 AND INCORPORATED HEREIN, AS DESCRIBED BELOW:

For the demolition of Barracks IV and the construction of a new modern facility barrack facility including stormwater management facilities, road and parking and all attendant infrastructure. The work includes clearing, grading, filling. The work will result in permanent impacts to 1,112 square feet of emergent nontidal wetland and 3,607 square feet of 25-foot nontidal wetland buffer. The project is located on Taylor Avenue, between Dutt Road and Hodges Street at Fort Meade, Fort Meade in Anne Arundel County.

NOTE: No In-Stream work is authorized herein.

MD Grid Coordinates: N 158250 / E 421928

Heather L. Nelson
Program Manager
Wetlands and Waterways Program

Attachments: Conditions of Authorization

cc: MDE Compliance Program
US-ACOE-Section Northern
Ft Meade Env. Division-John Houchins

1. **Validity:** Authorization is valid only for use by Authorized Person. Authorization may be transferred only with prior written approval of the Administration. In the event of transfer, transferee agrees to comply with all terms and conditions of Authorization.
2. **Initiation of Work, Modifications and Extension of Term:** Authorized Person shall initiate authorized activities in waterways, including streams and the 100-year floodplain, within two (2) years of the Effective Date of this Authorization or the Authorization shall expire. [Annotated Code of Maryland, Environment Article 5-510(a)-(b) and Code of Maryland Regulations 26.17.04.12]. Authorized Person may submit written requests to the Administration for (a) extension of the period for initiation of work, (b) modification of Authorization, including the Approved Plan, or, (c) not later than 45 days prior to Expiration Date, an extension of term. Requests for modification shall be in accordance with applicable regulations and shall state reasons for changes, and shall indicate the impacts on nontidal wetlands, streams, and the floodplain, as applicable. The Administration may grant a request at its sole discretion. (Annotated Code of Maryland, Environment Article 5-510(c), and Code of Maryland Regulations 26.17.04.12, and Annotated Code of Maryland, Environment Article 5-907 and Code of Maryland Regulations 26.23.02.07).
3. **Responsibility and Compliance:** Authorized Person is fully responsible for all work performed and activities authorized by this Authorization shall be performed in compliance with this Authorization and Approved Plan. Authorized Person agrees that a copy of the Authorization and Approved Plan shall be kept at the construction site and provided to its employees, agents and contractors. A person (including Authorized Person, its employees, agents or contractors) who violates or fails to comply with the terms and conditions of this Authorization, Approved Plan or an administrative order may be subject to penalties in accordance with §5-514 and §5-911, Department of the Environment Article, Annotated Code of Maryland (2007 Replacement Volume).
4. **Failure to Comply:** If Authorized Person, its employees, agents or contractors fail to comply with this Authorization or Approved Plan, the Administration may, in its discretion, issue an administrative order requiring Authorized Person, its employees, agents and contractors to cease and desist any activities which violate this Authorization, or the Administration may take any other enforcement action available to it by law, including filing civil or criminal charges.
5. **Suspension or Revocation:** Authorization may be suspended or revoked by the Administration, after notice of opportunity for a hearing, if Authorized Person: (a) submits false or inaccurate information in Permit application or subsequently required submittals; (b) deviates from the Approved Plan, specifications, terms and conditions; (c) violates, or is about to violate terms and conditions of this Authorization; (d) violates, or is about to violate, any regulation promulgated pursuant to Title 5, Department of the Environment Article, Annotated Code of Maryland as amended; (e) fails to allow authorized representatives of the Administration to enter the site of authorized activities at any reasonable time to conduct inspections and evaluations; (f) fails to comply with the requirements of an administrative action or order issued by the Administration; or (g) does not have vested rights under this Authorization and new information, changes in site conditions, or amended regulatory requirements necessitate revocation or suspension.
6. **Other Approvals:** Authorization does not authorize any injury to private property, any invasion of rights, or any infringement of federal, State or local laws or regulations, nor does it obviate the need to obtain required authorizations or approvals from other State, federal or local agencies as required by law.
7. **Site Access:** Authorized Person shall allow authorized representatives of the Administration access to the site of authorized activities during normal business hours to conduct inspections and evaluations necessary to assure compliance with this Authorization. Authorized Person shall provide necessary assistance to effectively and safely conduct such inspections and evaluations.
8. **Inspection Notification:** Authorized Person shall notify the Administration's Compliance Program at least five (5) days before starting authorized activities and five (5) days after completion. For Allegany, Garrett, and Washington Counties, Authorized Person shall call 301-689-1480. For Carroll, Frederick, Howard, Montgomery and Prince George's Counties, Authorized Person shall call 301-665-2850. For Baltimore City, Anne Arundel, Baltimore, Calvert, Charles, Harford and St. Mary's Counties, Authorized Person shall call 410-537-3510. For Caroline, Cecil, Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico and Worcester Counties, Authorized Person shall call 410-901-4020. If Authorization is for a project that is part of a mining site, please contact the Land and Materials Administration's Mining Program at 410-537-3557 at least five (5) days before starting authorized activities and five (5) days after completion.
9. **Sediment Control:** Authorized Person shall obtain approval from the Maryland Department of the Environment for a grading and sediment control plan specifying soil erosion control measures. The approved grading and sediment control plan shall be included in the Approved Plan, and shall be available at the construction site.
10. **Best Management Practices During Construction:** Authorized Person, its employees, agents and contractors shall conduct authorized activities in a manner consistent with the Best Management Practices specified by the Administration.
11. **Disposal of Excess:** Unless otherwise shown on the Approved Plan, all excess fill, spoil material, debris, and construction material shall be disposed of outside of nontidal wetlands, nontidal wetlands buffers, and the 100-year floodplain, and in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands.
12. **Temporary Staging Areas:** Temporary construction trailers or structures, staging areas and stockpiles shall not be located within nontidal wetlands, nontidal wetlands buffers, or the 100-year floodplain unless specifically included on the Approved Plan.

13. **Temporary Stream Access Crossings:** Temporary stream access crossings shall not be constructed or utilized unless shown on the Approved Plan. If temporary stream access crossings are determined necessary prior to initiation of work or at any time during construction, Authorized Person, its employees, agents or contractors shall submit a written request to the Administration and secure the necessary permits or approvals for such crossings before installation of the crossings. Temporary stream access crossings shall be removed and the disturbance stabilized prior to completion of authorized activity or within one (1) year of installation.
14. **Discharge:** Runoff or accumulated water containing sediment or other suspended materials shall not be discharged into waters of the State unless treated by an approved sediment control device or structure.
15. **Instream Construction Prohibition:** To protect important aquatic species, motor driven construction equipment shall not be allowed within stream channels unless on authorized ford crossings. Activities within stream channels are prohibited as determined by the classification of the stream (COMAR 26.08.02.08): No In-Stream work is authorize herein.
16. **Instream Blasting:** Authorized Person shall obtain prior written approval from the Administration before blasting or using explosives in the stream channel.
17. **Minimum Disturbance:** Any disturbance of stream banks, channel bottom, wetlands, and wetlands buffer authorized by this Authorization or Approved Plan shall be the minimum necessary to conduct permitted activities. All disturbed areas shall be stabilized vegetatively no later than seven (7) days after construction is completed or in accordance with the approved grading or sediment and erosion control plan.
18. **Restoration of Construction Site:** Authorized Person shall restore the construction site upon completion of authorized activities. Undercutting, meandering or degradation of the stream banks or channel bottom, any deposition of sediment or other materials, and any alteration of wetland vegetation, soils, or hydrology, resulting directly or indirectly from construction or authorized activities, shall be corrected by Authorized Person as directed by the Administration.
19. **Mitigation:** Mitigation is not required for this activity.

FEDERALLY MANDATED STATE AUTHORIZATIONS

The State of Maryland issued a Water Quality Certification to the U.S. Army Corps of Engineers for projects receiving federal authorization under the Maryland State Programmatic General Permit, Regional General Permit for Chesapeake Bay Total Maximum Daily Load (TMDL) Activities and non-suspended Nationwide Permits. In addition, as applicable, this Authorization constitutes the State's concurrence with the Applicant's certification that the activities authorized herein are consistent with the Maryland Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act of 1972, as amended. Activities in the following counties are not subject to the Maryland Coastal Zone Management requirement: Allegany, Carroll, Frederick, Garrett, Howard, Montgomery, and Washington.

U.S. ARMY CORPS OF ENGINEERS AUTHORIZATION

The U.S. Army Corps of Engineers has reviewed this activity and has granted authorization under the Maryland State Programmatic General Permit (MDSPGP-6), as a Category A activity (A-e(9)). The terms and conditions of the MDSPGP-6 as outlined in the documents found on the U.S. Army Corps of Engineers, Baltimore District website, <https://www.nab.usace.army.mil/Missions/Regulatory/Permits-MD/>, should be followed when performing the authorized work.

**BEST MANAGEMENT PRACTICES FOR WORKING IN
NONTIDAL WETLANDS, WETLAND BUFFERS,
WATERWAYS AND 100-YEAR FLOODPLAINS**

- 1) No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- 2) Place materials in a location and manner which does not adversely impact surface or subsurface water flow into or out of nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- 3) Do not use the excavated material as backfill if it contains waste metal products, unsightly debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
- 4) Place heavy equipment on mats or suitably operate the equipment to prevent damage to nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.
- 5) Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands, nontidal wetland buffers, or waterways, or permanent modification of the 100-year floodplain in excess of that lost under the originally authorized structure or fill.
- 6) Rectify any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction.
- 7) All stabilization in the nontidal wetland and nontidal wetland buffer shall consist of the following species: Annual Ryegrass (*Lolium multiflorum*), Millet (*Setaria italica*), Barley (*Hordeum* sp.), Oats (*Uniola* sp.), and/or Rye (*Secale cereale*). These species will allow for the stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other non-persistent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division. **Kentucky 31 fescue shall not be utilized in wetland or buffer areas.** The area should be seeded and mulched to reduce erosion after construction activities have been completed.
- 8) After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.
- 9) To protect aquatic species, in-stream work is prohibited as determined by the classification of the stream:
 - Use I waters: In-stream work shall not be conducted during the period March 1 through June 15, inclusive, during any year.
 - Use III waters: In-stream work shall not be conducted during the period October 1 through April 30, inclusive, during any year.
 - Use IV waters: In-stream work shall not be conducted during the period March 1 through May 31, inclusive, during any year.
- 10) Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
- 11) Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is to impound water.

From: sylvia.mosser@maryland.gov
To: [Ramsey, Connie L CIV USARMY CENAB \(USA\)](#)
Cc: sylvia.mosser@maryland.gov
Subject: [Non-DoD Source] Review and Recommendation of Clearinghouse Project: MD20201120-0988
Date: Monday, December 28, 2020 10:51:17 AM

Hello Ms. Connie Ramsey,

The following link below includes the State Clearinghouse Review and Recommendation letter for your project, Pre-Environmental Assessment Request for Early Input: Proposed Action Includes Design and Construction of Adequate, Safe and Modern Housing on Fort George G. Meade for 1,600-1,800 Active Duty Enlisted Personnel (Ranks E1-E6) Assigned to Units at FMMD and the [REDACTED] at FMMD.

Click this link to view the letter,

https://apps.planning.maryland.gov/EMIRC_Files/MD20201120-0988.zip . This is a 854 KB file.

Thank you.

Sylvia Mosser, Planner
sylvia.mosser@maryland.gov
410-767-4487

Myra Barnes, Lead Clearinghouse Coordinator
myra.barnes@maryland.gov

[Please take our customer service survey.](#)



Maryland DEPARTMENT OF PLANNING

November 23, 2020

Ms. Connie Ramsey, Biologist, Planning
U.S. Army Corps of Engineers, Baltimore District
Installation Support Branch
2 Hopkins Plaza
Baltimore, MD 21201

STATE CLEARINGHOUSE REVIEW PROCESS

State Application Identifier: MD20201120-0988

Reviewer Comments Due By: December 20, 2020

Project Description: Pre-Environmental Assessment Request for Early Input: Proposed Action Includes Design and Construction of Adequate, Safe and Modern Housing on Fort George G. Meade (FMMD) for 1,600-1,800 Active Duty Enlisted Personnel (Ranks E1-E6) Assigned to Units at FMMD and the [REDACTED] at FMMD

Project Address: York Avenue, Taylor Avenue, and Dutt Road, Fort Meade, MD 20755

Project Location: Anne Arundel County

Clearinghouse Contact: Sylvia Mosser

Dear Ms. Ramsey:

Thank you for submitting your project for intergovernmental review. Participation in the Maryland Intergovernmental Review and Coordination (MIRC) process helps ensure project consistency with plans, programs, and objectives of State agencies and local governments. MIRC enhances opportunities for approval and/or funding and minimizes delays by resolving issues before project implementation.

Maryland Gubernatorial Executive Order 01.01.1998.04, Smart Growth and Neighborhood Conservation Policy, encourages federal agencies to adopt flexible standards that support "Smart Growth." In addition, Federal Executive Order 12072, Federal Space Management, directs federal agencies to locate facilities in urban areas. Consideration of these two Orders should be taken prior to making final site selections. A copy of Maryland Gubernatorial Executive Order 01.01.1998.04, Smart Growth and Neighborhood Conservation Policy is available upon request.

We have forwarded your project to the following agencies and/or jurisdictions for their review and comments: the Maryland Departments of Natural Resources, the Environment, Transportation, and General Services; the Maryland Military Department; Anne Arundel County; and the Maryland Department of Planning, including the Maryland Historical Trust. A composite review and recommendation letter will be sent to you by the reply due date. Your

Ms. Connie Ramsey

Page 2

State Application Identifier #: MD20201120-0988

project has been assigned a unique State Application Identifier that you should use on all documents and correspondence. Please be assured that we will expeditiously process your project.

If you need assistance or have questions, contact the State Clearinghouse staff noted above at 410-767-4490 or through e-mail at sylvia.mosser@maryland.gov. Thank you for your cooperation with the MIRC process.

Sincerely,

A handwritten signature in dark ink, appearing to read 'J Dubow', with a stylized flourish at the end.

Jason Dubow, Manager
Resource Conservation and Management

JD:SM

20-0988_NFP.NEW.docx



Maryland DEPARTMENT OF PLANNING

December 28, 2020

Ms. Connie Ramsey, Biologist, Planning
U.S. Army Corps of Engineers, Baltimore District
Installation Support Branch
2 Hopkins Plaza
Baltimore, MD 21201

STATE CLEARINGHOUSE RECOMMENDATION

State Application Identifier: MD20201120-0988

Applicant: U.S. Army Corps of Engineers, Baltimore District

Project Description: Pre-Environmental Assessment Request for Early Input: Proposed Action Includes Design and Construction of Adequate, Safe and Modern Housing on Fort George G. Meade (FMMD) for 1,600-1,800 Active Duty Enlisted Personnel (Ranks E1-E6) Assigned to Units at FMMD [REDACTED] at FMMD

Project Address: York Avenue, Taylor Avenue, and Dutt Road, Fort Meade, MD 20755

Project Location: Anne Arundel County

Recommendation: Consistent with Qualifying Comments

Dear Ms. Ramsey:

In accordance with Presidential Executive Order 12372 and Code of Maryland Regulation 34.02.02.04-.07, the State Clearinghouse has coordinated the intergovernmental review of the referenced project. This letter constitutes the State process review and recommendation.

Review comments were requested from the Maryland Departments of General Services, Natural Resources, Transportation, and the Environment; the Maryland Military Department; Anne Arundel County; and the Maryland Department of Planning, including the Maryland Historical Trust. The Maryland Military Department did not have comments; and Anne Arundel County did not provide comments.

The Maryland Departments of General Services, Natural Resources, and Transportation; and the Maryland Department of Planning, including the Maryland Historical Trust found this project to be consistent with their plans, programs, and objectives.

The Maryland Historical Trust has determined that the project will have “no effect” on historic properties and that the federal and/or State historic preservation requirements have been met.

The Maryland Department of the Environment (MDE) found this project to be generally consistent with their plans, programs, and objectives, but included certain qualifying comments summarized below.

1. "If the applicant suspects that asbestos is present in any portion of the structure that will be renovated/demolished, then the applicant should contact the Community Environmental Services Program at (410) 537-3215 to learn about the State's requirements.
2. Construction, renovation and/or demolition of buildings and roadways must be performed in conformance with State regulations pertaining to 'Particulate Matter from Materials Handling and Construction' requiring that during any construction and/or demolition work, reasonable precaution must be taken to prevent particulate matter, such as fugitive dust, from becoming airborne.
3. During the duration of the project, soil excavation/grading/site work will be performed; there is a potential for encountering soil contamination. If soil contamination is present, a permit for soil remediation is required from MDE. Please contact the New Source Permits Division at (410) 537-3230 to learn about the State's requirements.
4. Any above ground or underground petroleum storage tanks, which may be utilized, must be installed and maintained in accordance with applicable State and federal laws and regulations. Underground storage tanks must be registered and the installation must be conducted and performed by a contractor certified to install underground storage tanks by the Land Management Administration in accordance with COMAR 26.10. Contact the Oil Control Program at (410) 537-3442 for additional information.
5. If the proposed project involves demolition – Any above ground or underground petroleum storage tanks that may be on site must have contents and tanks along with any contamination removed. Please contact the Oil Control Program at (410) 537-3442 for additional information.
6. 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.
7. The Waste Diversion and Utilization Program should be contacted directly at (410) 537-3314 by those facilities which generate or propose to generate or handle hazardous wastes to ensure these activities are being conducted in compliance with applicable State and federal laws and regulations. The Program should also be contacted prior to construction activities to ensure that the treatment, storage or disposal of hazardous wastes and low-level radioactive wastes at the facility will be conducted in compliance with applicable State and federal laws and regulations.
8. Any contract specifying 'lead paint abatement' must comply with Code of Maryland Regulations. If a property was built before 1950 and will be used as rental housing, then compliance with COMAR 26.16.02 is required. Additional guidance regarding projects where lead paint may be encountered can be obtained by contacting the Environmental Lead Division at (410) 537-3825.
9. The proposed project may involve rehabilitation, redevelopment, revitalization, or property acquisition of commercial, industrial property. For specific information about these programs and eligibility, please contact the Land Restoration Program at (410) 537-3437.
10. Borrow areas used to provide clean earth back fill material may require a surface mine permit. Disposal of excess cut material at a surface mine may require site approval. Contact the Mining Program at (410) 537-3557 for further details."

The State Application Identifier Number must be placed on any correspondence pertaining to this project.

Please remember, you must comply with all applicable state and local laws and regulations. If you need assistance or have questions, contact the State Clearinghouse staff person noted above at 410-767-4490 or through e-mail at sylvia.mosser@maryland.gov.

Ms. Connie Ramsey

December 28, 2020

Page 3

State Application Identifier: **MD20201120-0988**

Thank you for your cooperation with the MIRC process.

Sincerely,

A handwritten signature in dark ink, appearing to read 'J Dubow', with a stylized flourish at the end.

Jason Dubow, Manager
Resource Conservation and Management

MB:SM

cc:

Tony Redman - DNR
Amanda Redmiles - MDE

Ian Beam - MDOT
Tanja Rucci - DGS

Kirk Yaukey - MILT
Samantha Harris - ANAR

Joseph Griffiths - MDPL
Beth Cole - MHT

20-0988_CRR.CLS.docx



Larry Hogan, Governor
Boyd Rutherford, Lt. Governor
Jeannie Haddaway-Riccio, Secretary
Charles Glass, Deputy Secretary

January 4, 2021

Ms. Connie Ramsey
Baltimore District USACE
2 Hopkins Plaza
Baltimore, MD 21201

RE: Environmental Review for Initial Agency Coordination for Fort Meade Design and Construction of Nine New Barracks Buildings, Anne Arundel County, Maryland

Dear Ms. Ramsey:

The Wildlife and Heritage Service has determined that there are no official State or Federal records for listed plant or animal species within the delineated area shown on the map provided. As a result, we have no specific concerns regarding potential impacts or recommendations for protection measures at this time. Please let us know however if the limits of proposed disturbance or overall site boundaries change and we will provide you with an updated evaluation.

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# 2020.1899.aa



Natural Resources
Conservation Service

November 23, 2020

Delaware State Office

1221 College Park
Drive, Suite 100
Dover, DE 19904
Voice 302.678-4160
Fax 855.389.3386

Connie Ramsey,
Biologist
Installation Support Branch
Planning Division
Baltimore District USACE
2 Hopkins Plaza
Baltimore, MD 21201

Subject: Fort Meade's Department of Public Works NEPA review

Reference: FMMD Barrack construction

Connie,

NRCS received your request to conduct a NEPA review for 9 barracks to be construction on Fort Meade MD.

Regarding prime farmland and farmland of statewide important, FPPA does not apply in this situation.

The area is question is not "Farmland".

"Farmland" does not include land already in or committed to urban development or water storage.

Therefore, FPPA does not apply to this project.

In general, the soil that will be encountered during construction pose little or no limitation. However, all the soil on site have a high potential for cut banks caving. Please follow proper OSHA guidance for shoring-up excavations.

If you have any questions, or need further assistance, please call.

Respectfully Submitted,

Phillip S. King
State Soil Scientist
DE/MD/DC

From: [Gillespie, Joy](#)
To: [Ramsey, Connie L CIV USARMY CENAB \(USA\)](#)
Cc: [Traver, Carrie](#); [Nevshehirlan, Stepan](#); [Paiste, Richard](#)
Subject: [Non-DoD Source] Fort Meade Barracks Project Environmental Assessment Scoping Comments
Date: Friday, December 18, 2020 10:42:37 AM

Dear Ms. Ramsey:

EPA has received your request for initial agency coordination for the Fort Meade Barracks Project Environmental Assessment received on November 18, 2020. The proposed project involves design and construction of up to nine (9) new barracks buildings that will house between 1,600 to 1,800 unaccompanied enlisted personnel on the Fort George G. Meade, Maryland (FMMD) site. The purpose of the project is to provide adequate, safe and modern housing on FMMD, that will be designed to meet Army Unaccompanied Enlisted Personnel Housing standards.

We understand that the study is being done in compliance with the National Environmental Policy Act (NEPA) of 1969, and the Council on Environmental Quality regulations implementing NEPA (40 CFR 1500-1508). Please find below recommendations for the scope of analysis for the proposed study.

- The Purpose and Need for this project is clear from the request for initial coordination sent to EPA.
- Alternatives analysis should include the suite of other activities or solutions that were considered and the rationale for not carrying these alternatives forward for detailed study as well as what is proposed in your letter.
- The document should describe potential impacts to the natural and human environment. Existing resources should be identified, and EPA encourages that adverse impacts to natural resources, especially wetlands and other aquatic resources, be avoided and minimized. There appears to be a stream, Midway Branch, and unnamed tributaries, within the potential study area as well as riparian wetlands. Midway Branch has a history of biological impairment.
- Some information on resources may be gained from public websites including:
 - Watershed Resource Registry¹: <https://watershedresourcesregistry.org>
 - NEPAassist²: <https://www.epa.gov/nepa/nepassist>
 - EnviroMapper³: <https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system>
 - Envirofacts⁴: <https://www3.epa.gov/enviro/>
 - 303(d) Listed Impaired Waters: <https://www.epa.gov/exposure-assessment-models/303d-listed-impaired-waters>
- Stormwater ponds, best management practices (BMPs) and construction staging areas should not be placed in wetlands and streams. Stormwater management alternatives (see below) that address the existing and new construction should be considered and are encouraged.
- We recommend the EA outline measures that will be taken to protect surface waters, including erosion and sedimentation control practices during construction and post-construction management and treatment of stormwater. It would be helpful to discuss how the proposed stormwater management facilities protect water quality by addressing pollutants such as runoff from impervious surfaces (including thermal impacts, heavy metals

and petroleum/oils) and landscape pollutants (such as fertilizers, pesticides, bacteria, and sediment) from entering surface waters. FMMD is in a Phase 1 municipal separate storm sewer system (MS4) and should be informed on the MS4 National Pollutant Discharge Elimination System (NPDES) permit requirements.

- To reduce post construction runoff volume and improve water quality, EPA recommends the incorporation of Low Impact Development (LID) design features where possible, for building design, parking, paving, landscaping, and stormwater management. Technical guidance in implementing green infrastructure (GI) practices and LID can be found at the following sites:
<https://19january2017snapshot.epa.gov/sites/production/files/2015-09/documents/eisa-438.pdf>
www.epa.gov/greeninfrastructure
www.epa.gov/nps/lid
www.epa.gov/smartgrowth
<http://www.bmpdatabase.org>
- We recommend minimizing the impacts of large roof areas where possible. For example, water collection and storage from roof areas can reduce runoff and facility water use. Green roof installation could also reduce stormwater runoff, provide a building amenity, and reduce visual impacts from the facility. Additionally, measures such as roof-installation of solar panels could generate energy for the facility, reducing dependency on the local utilities and reducing long-term energy costs.
- We recommend consideration of options to reduce impact and incorporate energy efficient features in the buildings. Please consider recommendations such as those included in the LEED (Leadership in Energy and Environmental Design) Green Building Rating System. LEED is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings.
- We also recommend the document include consideration of extreme weather events in association with resiliency design.
- Please discuss in the study, if applicable, tree removal and mitigation measures to be taken to replace the loss.
- An evaluation of air quality and community impacts during and after construction, including noise, light and possible traffic impacts, and impact to viewshed, should be included in the document. General conformity status should also be included in the document. It appears that the study area is within nonattainment for ozone 8-hour (2015 standard), SO₂ 1-hour (2010 standard), and nonattainment for ozone 1-hr (1979 standard-revoked).
- The NEPA document should also include an analysis of any hazardous sites or materials, and the status of any ongoing or past remediation efforts in the proposed study areas. This includes any groundwater contamination.
- We recommend the consultation with the State Historic Preservation Office (SHPO) be included in the EA. The EA should identify whether adverse impacts to historic resources may occur from the proposed activities and identify mitigative measures that may be taken to avoid or reduce such impacts.
- The NEPA document should address potential effects of other activities in or near the proposed project areas that are reasonably foreseeable and have a reasonable close causal relationship to the proposed project; analysis may aid in the identification of resources that are likely to be adversely affected by multiple projects, and sensitive resources that could

require additional avoidance or mitigation measures. It is suggested that these effects analysis begin with defining the geographic and temporal limits of the study; this is generally broader than the study area of the project. The impact analysis should evaluate impacts to environmental resources that have the potential to be impacted by the project (i.e. wetlands, surface water, etc).

- We suggest the NEPA document state the size of the area of disturbance, including staging areas and access routes with an emphasis on minimizing the area impacted.
- Please consider public outreach and participation as the project moves forward.

Thank you for coordinating with EPA on this project. We look forward to working with you as more information becomes available. Please let me or Carrie Traver know if you have any questions on the recommended topics above. Mrs. Traver will continue to be your primary point of contact.

Joy

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Request for Early Input

Environmental Assessment for the Proposed Construction and Operation of the Fort Meade Barracks Project Fort George G. Meade, Maryland

All Interested Parties: The U.S. Army Garrison, Fort George G. Meade, Maryland (FMMD) is preparing an Environmental Assessment (EA) pursuant to the National Environmental Policy Act of 1969 (42 United States Code Section 4321 *et seq.*), herein known as NEPA. The Council on Environmental Quality (CEQ) is responsible for issuing regulations (40 Code of Federal Regulations [CFR] 1500-1508) and implementing the provisions of NEPA. CEQ regulations, in turn, are supplemented by procedures adopted on an agency-specific basis. For the Department of the Army (DA), the pertinent regulations are contained in 32 CFR Part 651, Environmental Analysis of Army Actions, which specifically includes in its list of Army actions that normally require an EA [32 CFR 651.33 (c)] changes to established installation land use that generate impacts on the environment. An EA is intended to assist agency planning and decision-making. While required to assess environmental impacts and evaluate their significance, an EA is routinely used as a planning document to evaluate environmental impacts, develop alternatives and mitigation measures, and allow for agency and public participation (32 CFR 651.20). This EA will be developed pursuant to these laws and regulations. NEPA requires all Federal agencies to give appropriate consideration to potential environmental effects of proposed and alternative major actions in the planning and decision-making processes.

The purpose of the Proposed Action is to provide adequate, safe and modern housing on FMMD, that will be designed to meet Army Unaccompanied Enlisted Personnel Housing (UEPH) standards for approximately 1,600-1,800 active duty enlisted personnel (ranks E1-E6) assigned to units at FMMD and the [REDACTED] at FMMD.

The need for the Proposed Action is to improve cohesiveness for the E1-E6 ranks through modern, co-located housing that is also cost effective in the long term for FMMD. These Service members are required by regulation to live on-post to promote improved morale and increase human health and safety. Currently, personnel are living off-post or in sub-standard, antiquated barracks where the following conditions exist:

- The current Korean War-era on-post barracks constructed in 1954 are dilapidated and unhealthy. Mold and mildew from failing air conditioning systems and leaking roofs has caused these structures to be unsafe. Also, these barracks are located within [REDACTED] [REDACTED] (Error! Reference source not found.). Actions involving these barracks have been previously analyzed as part of the March 2017 Final Environmental Impact Statement (EIS) for the [REDACTED]

- The shortage of adequate on-post housing for Service members requires them to find housing off-post. This is more costly than on-post housing and does not foster unit cohesion.
- The newer [REDACTED], constructed in 2001, can only accommodate one-third of the necessary housing requirement for [REDACTED] and FMMD [REDACTED].

The Proposed Action includes design and construction of a total of up to nine (9) new barracks buildings to house a total of 1,600-1,800 unaccompanied enlisted personnel (E1-E6). The barracks would be constructed in three phases. Each phase would construct up to three barracks. All of the barracks in all phases would be constructed in close proximity to one another within the existing property boundary of FMMD (**Error! Reference source not found.**). Phase I would be funded by the Army [REDACTED].

The No Action Alternative is to continue housing Service members in antiquated barracks that do not meet current Army standards for unaccompanied enlisted personnel and to continue use of Certificates of Non-Availability (CNAs) to house Service members off-post. Funds will continue to be spent on maintenance and repairs of antiquated barracks that have long surpassed their usable life. The cost of funding CNAs will further increase [REDACTED] the land where barracks currently are located to meet their mission requirements. This alternative continues the current noncompliance with Army policy of housing lower enlisted ranks on post where command presence can ensure Soldier safety, welfare and morale for young Soldiers.

In accordance with 40 CFR 1500-1508, the Army invites you to provide early input on the Proposed Action that should be considered in our analysis of each alternative in the forthcoming EA. Due to the COVID-19 quarantine, this early agency correspondence notice is being provided via email instead of a mailed letter. This notice is also being distributed to other organizations known to have an interest in natural resource conditions at FMMD.

Additionally, once the draft EA is completed, your organization and the public will have an opportunity to review and provide comment during a 30-day review period, which will be announced in a notice published in local newspapers and on the FMMD website. All materials will be provided online on the FMMD website under Environmental Public Notices at the following link: <https://home.army.mil/meade/index.php/my-fort/all-services/environmental>. Additionally, printed copies of the draft EA will be made available at local libraries.

We appreciate your attention to this matter and request your review and written comment within 30 days of receipt of this letter. Should you require any additional information or have any questions, please contact the US Army Corps of Engineers, Baltimore District Project Manager, Ms. Connie Ramsey at Connie.L.Ramsey@usace.army.mil. Thank you for your patience and understanding during this unprecedented time.

Enclosure 1: Figures 1 and 2

Enclosure 2: Contact List

Enclosure 1

Figure 1 Proposed Barracks Locations on FMMD

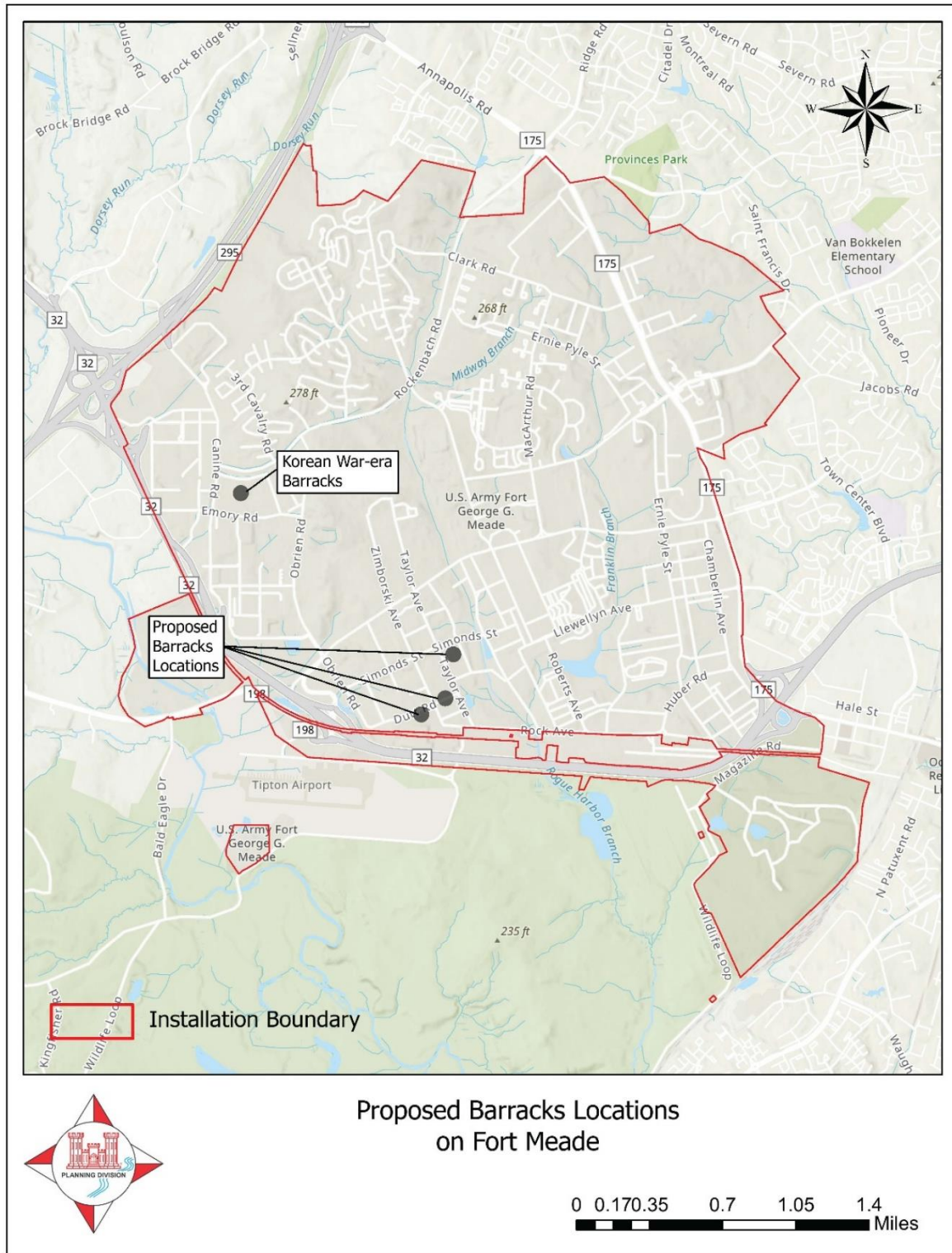
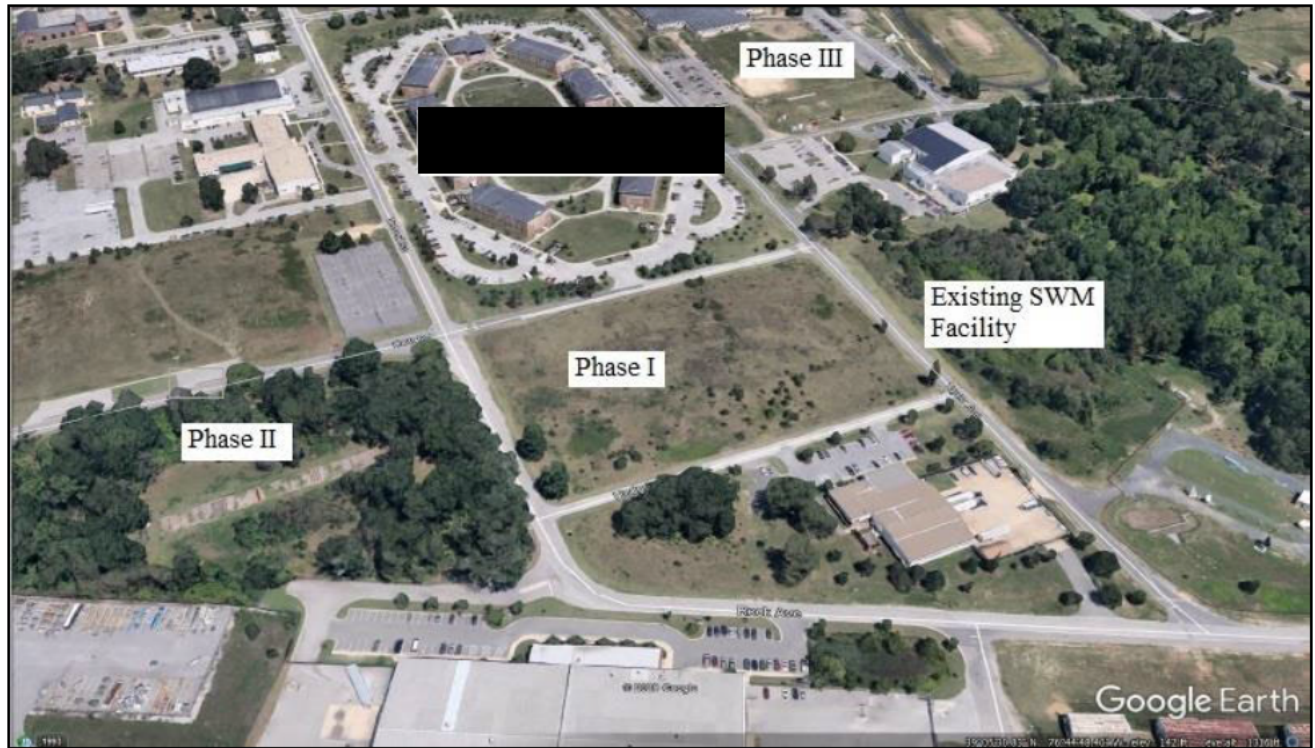


Figure 2 Proposed Barracks Locations by Phase



Enclosure 2 – Stakeholder Contact List

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Appendix C

Record of Non-Applicability

APPENDIX C

**Air Emissions Calculations and Record of Non-Applicability
for the
Environmental Assessment
of the
Fort Meade Barracks Complex
U.S. Army Garrison
Fort George G. Meade, Maryland**

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Emissions Estimations and Methodology

Fort George G. Meade (FMMD) has considered all reasonably foreseeable direct and indirect sources of air emissions associated with the Proposed Action. *Direct emissions* are emissions that are caused or initiated by a federal action and occur at the same time and place as the action. *Indirect emissions* are reasonably foreseeable emissions that are caused by the action but might occur later in time and/or be farther removed in distance from the action itself, and that the federal agency can practicably control. There are no indirect emissions anticipated with this action.

The Region of Influence (ROI) for air quality impacts is Anne Arundel County, Maryland. This ROI was selected because it represents the geographic area that would be impacted by major activities occurring at FMMD. The ROI is defined as a marginal nonattainment area for the 8-hour O₃ National Ambient Air Quality Standards (NAAQS), meaning the Anne Arundel County does not meet the national air quality standards for NAAQS per the EPA Greenbook (EPA, 2021). Anne Arundel County is also in attainment-maintenance of the PM-2.5 NAAQS.

The following sections describe the direct emissions anticipated from implementing the construction and operation of the Proposed Action.

Construction Emissions. The greatest amount of emissions would be generated during the construction phase of the Proposed Action. Under the Proposed Action, potential air quality impacts from construction activities would occur from: 1) combustion emissions due to the use of fossil fuel-powered equipment and vehicles, and 2) particulate emissions during earth-moving activities. Construction vehicles would consist of a mixture of land preparation equipment, vertical construction, paving, and interior finishing, including graders, tractors, cranes, excavators, generator sets, welders, aerial lifts, cement and mortar mixers, pavers, paving equipment, rollers. Other equipment includes generator sets and on-road vehicles that would be active during the construction phase, such as material delivery trucks, tractor trailers used for transporting off-road heavy equipment, and workers commuting daily to and from the job site in their personal vehicles.

Operational Emissions. Operational sources of air emissions would include those from operating the new barracks and associated maintenance activities. Maintenance would involve landscaping using small engine equipment for vegetation control, as well as interior natural gas boilers for heating. Operational emissions calculations are presented in Table 8. Additionally, it is anticipated that there would be a decrease in the current level of air emissions from commuter traffic associated with Service members who currently live off-post due to the current on-post housing shortage. Under the Proposed Action, these personnel would be housed on-post. Therefore, emissions associated with commuting would decrease.

The following sections describe the equations, calculations, and assumptions made to derive the total construction and operational emissions presented in Table 1.

As shown in Table 1, the total project emissions are below the general conformity threshold values.

Table 1. Summary of Annual Emissions from the Proposed Action

Emission Source:	Emissions (tons/year)					
	VOC ¹	CO	NO _x ¹	SO ₂ ²	PM ₁₀ ²	PM _{2.5} ¹
Proposed Action Construction Emissions	0.368	3.224	2.164	0.006	0.002	0.002
Proposed Action Operation Emissions	0.0217	0.1146	0.3226	0.0020	0.0381	0.0001
Total Proposed Action Emissions	0.3897	3.3386	2.4866	0.008	0.0401	0.0021
General Conformity <i>de minimis</i> threshold	50	--	--	--	--	100
New Source Review threshold	--	250	250	250	250	--
Exceeds <i>de minimis</i> or NSR threshold?	No	No	No	No	No	No

Notes:

1 - *De minimis* thresholds are not applicable to pollutants for which the area is in attainment for the NAAQS. New Source Review (NSR) thresholds are 250 tons per year of any pollutant.

Surface Disturbance

Particulates are the main air pollutant of concern from construction projects. Construction activities would generate both coarse and fine particulate emissions. The number of particulate emissions can be estimated from the amount of ground surface exposed, the type and intensity of activity, soil type and conditions, wind speed, and dust control measures used. To limit these emissions, construction BMPs, generally including water- or chemical-based dust suppression, would be implemented to reduce fugitive dust generation and further prevent dust from becoming airborne.

The following assumptions were used to calculate fugitive dust emissions during construction. Based on information provided by USACE, construction for Phase I is anticipated to take six months: two months of site preparation, and four months of vertical construction. USACE indicated that most construction equipment would not be continuously operated during this period, estimating that a 50% use factor over this period was appropriate. The construction period for the remaining two phases are also expected to take six months each.

For this analysis, air emissions were estimated for major activities including site preparation, grading, and construction of the buildings and associated infrastructure (i.e. parking lots, landscaping, storm water management feature).

The estimated areas of disturbance for each phase are as follows: Phase I: 6 acres; Phase II: 10 acres, and Phase III: 5 acres. Thus, the total area of disturbance would be 21 acres. The quantification of additional impervious surfaces per phase is expected to be three acres for Phase I; 5 acres for Phase II; and 2.5 acres for Phase III. The total suspended particulates are measured over a one-year period. Due to the fact that construction of any given phase would occur within a six-month period, the total suspended particulate emissions calculations accounts for only a portion of the total 21-acre area of disturbance. For this RONA, the Phase I construction area of disturbance of six acres was used to represent the project emissions.

Total suspended particulates were calculated using the emission factor for heavy construction activity operations from “AP-42, Compilation for Air Pollutant Emission Factors” (USEPA, 1995). Estimates are shown in Table 2.

Table 2. Total Suspended Particulate Emissions during Construction of the Proposed Action

Total Area (acres)	Exposed Area (acres)	Construction Duration (months)	Emission Factor (tons/acre/month) ¹	Control Efficiency (%)	PM (tons/year)
21	6	6	80	50	0.067

Notes: 1 - Emission factor for "Heavy Construction Operations" (USEPA, 1995)

Off-Road Heavy Construction Equipment

Non-road construction vehicles (e.g. backhoes, loaders) would emit criteria pollutants during construction. During the six-month construction period, the equipment would be operated for approximately four hours per day. Emissions were estimated using "Off-Road – Model Mobile Source Emission Factors" from the California South Coast Air Quality Management District (SCAQMD, 2020) because the state of Maryland has not published their own emission factors. Emission factors for year 2022 were used in these calculations, though it is understood that construction activities would occur farther into the future; emission factors typically decrease over time as new and more efficient equipment is brought to market. Therefore, using year 2022 factors represents a conservative estimate of potential emissions.

To determine the heavy construction equipment emissions in tons per year, the following formula was used, with information provided from Tables 3 and 4. The emissions are presented in Table 5.

$$TPY_p = (T_h \times E_{fp} \times N \times D)/C$$

Where: TPY_p = Tons Per Year of Pollutant
T_h = Time (hours per day of operation)
E_{fp} = Emissions Factor for the given pollutant (information from *South Coast Air Basin, 2020*)
N = Number of pieces of equipment
D = Days of use of equipment
C = Conversion from lbs to tons

A sample calculation for construction equipment for CO from the use of a grader is depicted as follows:

$$\begin{aligned} TPY_{CO} &= (T_h \times E_{CO} \times N \times D)/C \\ TPY_{CO} &= (4 \times 0.5732 \times 1 \times 10)/2000 \\ TPY_{CO} &= (22.93)/2000 \\ TPY_{CO} &= 0.01146 \end{aligned}$$

The annual heavy construction equipment emissions are presented in Table 3 for each pollutant during each phase of construction.

Table 3. Schedule of Construction Equipment Use

Equipment Type	Number of Units	Hours Used /Day	Total Days	Total Hours
Grading/Site Preparation				
Tractors/Loaders/Backhoes	1	4	256	1024
Graders	1	4	10	40
Building Construction				
Cranes	1	4	30	120
Excavators	1	4	126	504
Welders	4	8	42	1,344
Aerial Lifts	2	8	256	4,096
Generator sets	4	8	256	8,192
Cement and Mortar Mixers Composite	1	8	180	1,440
Paving				
Pavers	1	8	15	120
Paving Equipment	1	8	10	80
Rollers	1	8	5	40
Architectural Coatings (painting)				
Air Compressor	1	8	180	1,440

Table 4. Emission Factors for Off-Road Heavy Construction Equipment

2022 Equipment/Emission Factor ⁽¹⁾	CO (lbs/hr)	NO _x (lbs/hr)	PM ⁽²⁾ (lbs/hr)	SO ₂ (lbs/hr)	VOC ⁽³⁾ (lbs/hr)
Grading/Site Preparation					
Tractors/Loaders/Backhoes	0.3599	0.2302	0.0218	0.0007	--
Graders	0.5732	0.4657	0.0218	0.0015	0.0474
Building Construction					
Cranes	0.3822	0.5505	0.0203	0.0014	0.0798
Excavators	0.5104	0.3171	0.0136	0.0013	0.0648
Welders	0.1773	0.1557	0.0078	0.0003	0.0260
Aerial Lifts	0.1667	0.1619	0.0071	0.0004	0.0222
Generator sets	0.2694	0.2783	0.0117	0.0007	0.0340
Cement and Mortar Mixers Composite	0.0414	0.0535	0.0021	0.0001	0.0085
Paving					
Pavers	0.4840	0.4750	0.0296	0.0009	0.0870
Paving Equipment	0.4042	0.4137	0.0261	0.0008	0.0666
Rollers	0.3799	0.3198	0.0181	0.0008	0.0500
Architectural Coatings (painting)					
Air Compressor	0.3041	0.2677	0.0138	0.0007	0.0414

Notes:

1 – South Coast Air Basin (SCAB), emission factor year 2022. Composite emission factors used.

2 - PM emissions represent combined PM₁₀ and PM_{2.5} estimates.

3 - VOCs are considered equivalent to Reactive Organic Gases (ROG) for calculating non-road construction equipment emissions.

Table 5. Annual Off-Road Construction Equipment Emissions

Criteria Pollutant ¹	CO	NO _x	PM ²	SO ₂	VOCs ³
Grading/Site Preparation					
Tractors/Loaders/Backhoes	0.184250	0.117849	0.004884	0.0003968	0.019648
Graders	0.011463	0.009315	0.0004357	2.99215E-05	0.0016135
Building Construction					
Cranes	0.022930	0.033032	0.00122092	8.26104E-05	0.0047861
Excavators	0.128619	0.0799046	0.00343946	0.00033147	0.0163404
Welders	0.119144	0.1046532	0.005214158	0.00021334	0.0174750
Aerial Lifts	0.341301	0.3316193	0.01444232	0.00081758	0.0454404
Generator sets	1.10357	1.13998	0.04772	0.002858	0.139378
Cement and Mortar Mixers Composite	0.029840	0.0385147	0.00151184	7.82081E-05	0.0061543
Paving					
Pavers	0.029037	0.0284987	0.001777277	5.36952E-05	0.0052186
Paving Equipment	0.016169	0.0165482	0.001045909	3.17193E-05	0.0026645
Rollers	0.007598	0.0063960	0.000361783	1.53905E-05	0.0009999
Total Off-Road Heavy Construction Equipment Emissions (tons per year [tpy])⁴	1.299283	1.267144	0.05303967	0.003284722	0.1606395

Notes:

1 - PM emissions from non-road construction vehicles are included in the general construction emissions factor applied in the estimates in Table 4, and therefore non-road emissions of PM are not included in this table.

2 - PM emissions represent combined PM₁₀ and PM_{2.5} estimates.

3 - Calculated using "Off-road Mobile Source Emission Factors (Scenario Year 2022) (SCAQMD, 2020).

On-Road Heavy and Light Duty Trucks and Construction Worker Vehicle Emissions

Emissions from on-road heavy and light duty diesel-fueled trucks associated with the delivery and distribution of construction materials and general on-site construction support, as well as those from construction workers' passenger vehicles, were included in this analysis. Emission factors specific to Maryland for emission year 2022 were used for on-road heavy and light duty diesel-fueled trucks, and for gasoline-fueled passenger vehicles (USAF, 2020). Assumptions of travel distance incorporated in the calculations for the different vehicle categories were as follows:

- For on-road light duty diesel-fueled trucks, it was assumed there would be 10 trucks in use, each operating for 60 days (not necessarily continuously), and each traveling 30 miles per day. This is equivalent to a total of 18,000-miles traveled per year (10 trucks * 60 days * 30 miles).
- For on-road heavy duty diesel-fueled trucks, it was assumed there would be 1 truck in use, operating for 30 days (not necessarily continuously), and traveling 50 miles per trip. This is equivalent to a total of 1,500-miles traveled per year (1 trucks * 30 days * 50 miles).
- For construction workers' gasoline-fueled passenger vehicles, it was assumed there would be 50 vehicles operating, each traveling a total of 40 miles per day, for 260 days (6 months, weekdays only). This is equivalent to a total of 312,000 miles traveled per year (50 vehicles * 260 days * 40 miles).

Table 6 details the emission factors used in this analysis.

Table 6. On-Road Heavy and Light Duty Trucks and Construction Workers' Vehicle Emission Factors

On-Road Vehicle Category	2022 Emissions Factors, lbs/mile					
	CO	NOx	PM10	PM2.5	SO ₂	VOC
Heavy-Duty Diesel-Fueled Truck (8,501 + lbs)	0.0029299	0.0006658	0.0080755	0.0000265	0.0002712	0.0002491
Light-Duty Diesel-Fueled Truck (0-8,500 lbs)	0.0084900	0.0004365	0.0006680	0.0000066	0.0000154	0.0000132
Light-Duty Gasoline-Fueled Vehicles (passenger cars)	0.0059966	0.0004762	0.0003417	0.0000044	0.0000132	0.0000132

On-road heavy duty and light duty diesel-fueled truck emissions were calculated using the following equation:

$$TPY_P = (ME \times EF_P)/C$$

Where: TPY_P = Tons Per Year of Pollutant
 ME = Total Miles per Vehicle/Year
 EF_P = Emission Factor for the given pollutant (lbs/mile)
 C = Conversion from lbs to tons

Construction workers gas vehicle emissions were determined using the following equation:

$$TPY_P = (ME \times EF_P \times W)/C$$

Where: TPY_P = Tons Per Year of Pollutant
 ME = Miles per Vehicle: number of trips x miles/trip x days
Number of trips = 2; Miles/trip = 20; Total Days = 260
 W = Number of Workers
Short-term Construction Workers = 50
 EF_P = Emission Factor for the given pollutant (lbs/mile)
 C = Conversion from lbs to tons

A sample calculation for CO emissions from construction workers' vehicles is provided below:

$$TPY_{CO} = (ME \times EF_{CO} \times W)/C$$

$$TPY_{CO} = (260 \times 0.006217 \times 50)/2,000$$

$$TPY_{CO} = 80.82/2,000$$

$$TPY_{CO} = 0.0404$$

Table 7 summarizes the annual on-road construction support vehicle emissions.

Table 7. Estimated Annual Vehicle Emissions from On-Road Heavy and Light Duty Trucks and Construction Workers' Vehicles

On-Road Vehicle Category	Construction Emissions (tpy)					
	CO	NOx	PM10	PM2.5	SO ₂	VOC
Heavy Duty Diesel Truck Construction Equipment Emissions	0.002	0.006	0.000203	0.000187	0.000002	0.0005
Light Duty Diesel Trucks Construction	0.076	0.006	0.00014	0.00012	0.00006	0.004
Construction Worker Vehicle Emissions	0.933	0.053	0.002	0.002	0.001	0.074
On-Road Construction Support and Worker's Vehicles Emissions	1.011	0.078	0.065	0.001	0.002	0.002

On-Road Heavy and Light Duty Trucks and Operational Worker Vehicle Emissions

As noted above, operational emissions include landscaping, potentially two new maintenance workers, and boiler emissions. Due to the fact that landscaping already occurs at FMMD, additional landscaping emissions resulting from the operation of the Proposed Action would be negligible. Additionally, the emissions from the potential two new workers would use the same emissions noted above.

During construction of Phase I, two new barracks would be built within the project site. One natural gas boiler would be placed within each building, creating emissions throughout the operational phase of the barracks.

USACE provided emission estimates in tons per year for one KN-16 natural gas boiler operating for one year at a total of 2,000 hours. Because there would be two gas boilers, the emissions were doubled.

Table 8 details the emission factors used in this analysis.

Table 8. Natural Gas Boiler Operational Emissions

Actual tons per year						
Equipment	CO	VOC	NOx	SOx	PM10	Pb
Two Boilers	0.068	0.018	0.32	0.002	0.038	0

It is also likely that there will be a decrease in air emissions due to the anticipated decrease of commuter traffic currently experienced by Service members housed off-post due to the housing shortage. Operation and maintenance equipment could include small-engine equipment used for vegetation control such as lawnmowers, weedwhackers, leaf blowers, and chainsaws. These would make a *de minimis* contribution to overall emissions; therefore, operation of the Proposed Action would result in a negligible increase in annual emissions at FMMD.

References

- EPA, 2021 Maryland Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants, Green Book. January 2021.
- USAF, 2020 Emission Estimation Method for Hauling Excavation Materials and Construction Supplies: United States Air Force (USAF) Institute for Environment, Safety and Occupational Health Risk Analysis (IERA) Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations. Emissions Factor for the Maryland, Year 2022 (Table 5-21).
- SCAQMD, 2020 Off-Road – Model Mobile Source Emission Factors, Year 2022.

Record of Non-Applicability

In Accordance with the Clean Air Act – General Conformity Rule for the
BARRACKS COMPLEX
FORT GEORGE G. MEADE, MARYLAND

The United States Army Garrison (USAG) Fort George G. Meade (FMMD) proposes the construction of a new barracks complex to provide adequate, safe and modern housing which meets the Army Unaccompanied Enlisted Personnel Housing (UEPH) standards for approximately 1600-1800 active duty enlisted personnel (ranks E1-E6) assigned to units at FMMD. In addition, FMMD will restore an underperforming Stormwater Retention Pond sufficient to meet the demands of the new barracks complex.

The Proposed Action is described in detail in the accompanying Environmental Assessment (EA). The air quality impacts associated with constructing and operating the Proposed Action, including the estimated emissions calculations, are presented in Section 5.6 of the EA. As described therein, General Conformity under the Clean Air Act, Section 176 has been evaluated according to the requirements of Title 40 of the Code of Federal Regulations Part 93, Subpart B. The requirements of this rule are not applicable to the action because:

The maximum total annual direct emissions from the Proposed Action have been estimated at 3.3 tons per year (tpy) of carbon monoxide (CO), 2.5 tpy of nitrogen oxides (NOx), 0.042 tpy of particulate matter (PM_{2.5+10}), 0.008 tpy of sulfur dioxide (SO₂), and 0.39 tpy of volatile organic compounds (VOCs; ozone precursor). These levels are below the 50 tpy conformity threshold value for VOCs and 100 tpy conformity threshold value each for NOx, PM_{2.5+10}, CO, and SO₂ established by 40 CFR 93.153(b) for the Metropolitan Baltimore Intrastate Air Quality Control Region.

Supporting documentation and emission estimates:

☒ Are Attached

☒ Appear in the National Environmental Policy Act Documentation

☐ Other

CHRISTOPHER M. NYLAND
COL, IN Commanding

Date

Appendix D

Coastal Zone Management Act Conformity Determination

Coastal Zone Management Act Consistency Determination
Proposed Barracks Complex
at U.S. Army Garrison
Fort George G. Meade, Maryland

April 2022

**Proposed Barracks Complex
at U.S. Army Garrison
Fort George G. Meade, Maryland**

**Coastal Zone Management Act (CZMA) Consistency Determination
Determination of Consistency with Maryland's Coastal Zone Management Program
(CZMP)**

In accordance with the Federal Coastal Zone Management Act (CZMA) of 1972, as amended, Section 307(c)(3)(A) and 15 Code of Federal Regulations (CFR) Part 930, subpart D, and the CZMA Memorandum of Understanding (MOU) between the State of Maryland and the U.S. Department of Defense, this document serves as a Federal Consistency Determination for the proposed U.S. Army Garrison (USAG) Fort George G. Meade (FMMD) onsite barracks complex (Proposed Action).

Maryland's Coastal Zone Management Plan (CZMP) was established by Executive Order (EO) and approved in 1978 as required by the Federal CZMA of 1972, as amended. Maryland's Coastal Zone consists of land, water, and sub-aqueous land between the territorial limits of Maryland (including the towns, cities, and counties that contain coastal shoreline) in the Chesapeake Bay, Atlantic coastal bays, and the Atlantic Ocean.

The CZMA requires that federal actions likely to affect land, water, or natural resources in the Coastal Zone be conducted in a manner consistent to the maximum extent practicable with the enforceable policies of a state's federally approved CZMP. The Coastal Zone Act Reauthorization Amendments of 1990 also clarified that coastal effects include cumulative, secondary, or indirect effects of the activity in the immediate or reasonably foreseeable future.

The Army is required to determine the consistency for its proposed activities associated with activities at FMMD affecting Maryland's coastal resources or coastal uses with the CZMP, which is administered by the Maryland Department of Natural Resources (MDNR) Chesapeake and Coastal Service (CCS). The Army determined that implementation of the Proposed Action would ultimately have a negligible adverse effect and a significant positive effect on the land, water, or natural resources of Maryland's Coastal Zone. This document represents an analysis of Maryland's CZMP Enforceable Coastal Policies (MDNR, 2011), and reflects the commitment of the Army to comply with the Maryland CZMP.

This document represents an analysis of project activities in context with established CCS Enforceable Programs. Furthermore, submission of this consistency determination reflects the commitment of FMMD to comply with those Enforceable Programs. FMMD has determined that the Proposed Activity would have a negligible impact on any land and water uses or natural resources of Maryland's coastal zone.

1. Proposed Project Description

a. Project Location

FMMD encompasses approximately 5,107.7 acres and is located in the northwest corner of Anne Arundel County, Maryland. FMMD is located approximately 17 miles southwest of downtown Baltimore, Maryland, and approximately 24 miles northeast of Washington, D.C. Annapolis, MD is approximately 14 miles southeast of FMMD.

b. Project Description

FMMD is proposing to implement the Proposed Action, which includes the design and construction of a total of up to nine (9) new barracks buildings to house 1,600-1,800 unaccompanied enlisted personnel to be constructed in three (3) phases at three (3) sites in close proximity on FMMD. The purpose of the Proposed Action is to provide adequate, safe and modern housing on FMMD designed to meet Army Unaccompanied Enlisted Personnel Housing (UEPH) standards for approximately 1,600-1,800 active-duty enlisted personnel (ranks E1-E6) assigned to units at FMMD.

Under the No Action Alternative, selected Soldiers would continue to be housed in antiquated barracks that do not meet current Army standards for unaccompanied enlisted personnel and FMMD would continue to house other Soldiers off-post. Funds would continue to be spent on maintenance and repairs of antiquated barracks that have long surpassed their usable life, as well as funds that would continue to be spent on off-post housing allowances. This alternative continues the current noncompliance with Army policy of housing lower enlisted ranks on-post where command presence can ensure Soldier safety, welfare, and morale for young Soldiers.

Three other alternatives were considered but eliminated. The Proposed Action, which is the preferred alternative, includes a suite of best management practices that would address the need for the proposed barracks complex and would be designed using UEPH standards for 2/1 market-style dwelling units with two private bedrooms sharing one bathroom, including:

- Living/sleeping rooms;
- Semi-private bathrooms;
- Walk-in closets;
- Storage;
- Laundry facilities;
- Service areas;
- Intrusion detection system (IDS);
- A separate community building with a day room, game room, community kitchen and administrative space, or, a common/day room within each building; and,
- Supporting infrastructure (utilities, electric service, exterior lighting, fire protection and alarm systems, paving, walks, curbs and gutters, sedimentation and erosion control, storm drainage, storm water management, picnic area, bicycle racks, dumpster pads and enclosures, information systems, and parking).

The Proposed Action was evaluated based on the environmental, cultural, and socioeconomic impacts, as well as compliance with regulatory and mission requirements.

Required permits to implement the Proposed Action may include, but are not limited to, the following: Department of the Army Permit pursuant to Section 404 of the Clean Water Act; Maryland Department of Environment (MDE) Wetlands and Waterways Permit and Water Quality Certification; National Pollutant Discharge Elimination System permit; MDE Stormwater Permit; and MDE-approved Erosion and Sediment Control (ESC) plans. Prior to the start of construction, any required construction-related permits or approvals would be obtained by FMMD.

c. Public Participation

Public participation would take place as a part of the NEPA Environmental Assessment (EA), which is currently being prepared for the Proposed Action. The EA serves as the primary document to facilitate environmental review of the Proposed Action by federal, state, Native American Tribes, local agencies, and the public. State agency consultation will include review through the Maryland State Clearinghouse. Public participation opportunities with respect to the EA and decision making on the Proposed Action are guided by 32 Code of Federal Regulations (CFR) Part 651. A draft EA and, if warranted, a draft Finding of No Significant Impact (FNSI), will be released to the public for a 30-day review and comment period. Any comments or responses will be addressed prior to publication of the final EA. FMMD would sign a FNSI if there are no significant adverse impacts, and then proceed with implementation of the Proposed Action. If there are significant and unmitigated adverse impacts associated with the Proposed Action, the Army would publish a Notice of Intent to prepare an Environmental Impact Statement.

d. Other Consultations

Through the NEPA process, FMMD initiated consultation with U.S. Fish and Wildlife Service (USFWS), Maryland Department of Natural Resources, and Maryland Historic Trust State Historic Preservation Office. Copies of these correspondences are provided in the draft EA. Additionally, FMMD will submit the draft EA to the Maryland State Clearinghouse for review.

2. Enclosure 2: Site Location

a. Site Location Map

A site location map and a site detail plan are provided below as Figures 1 and 2, respectively.

Figure 1. Site Location Map

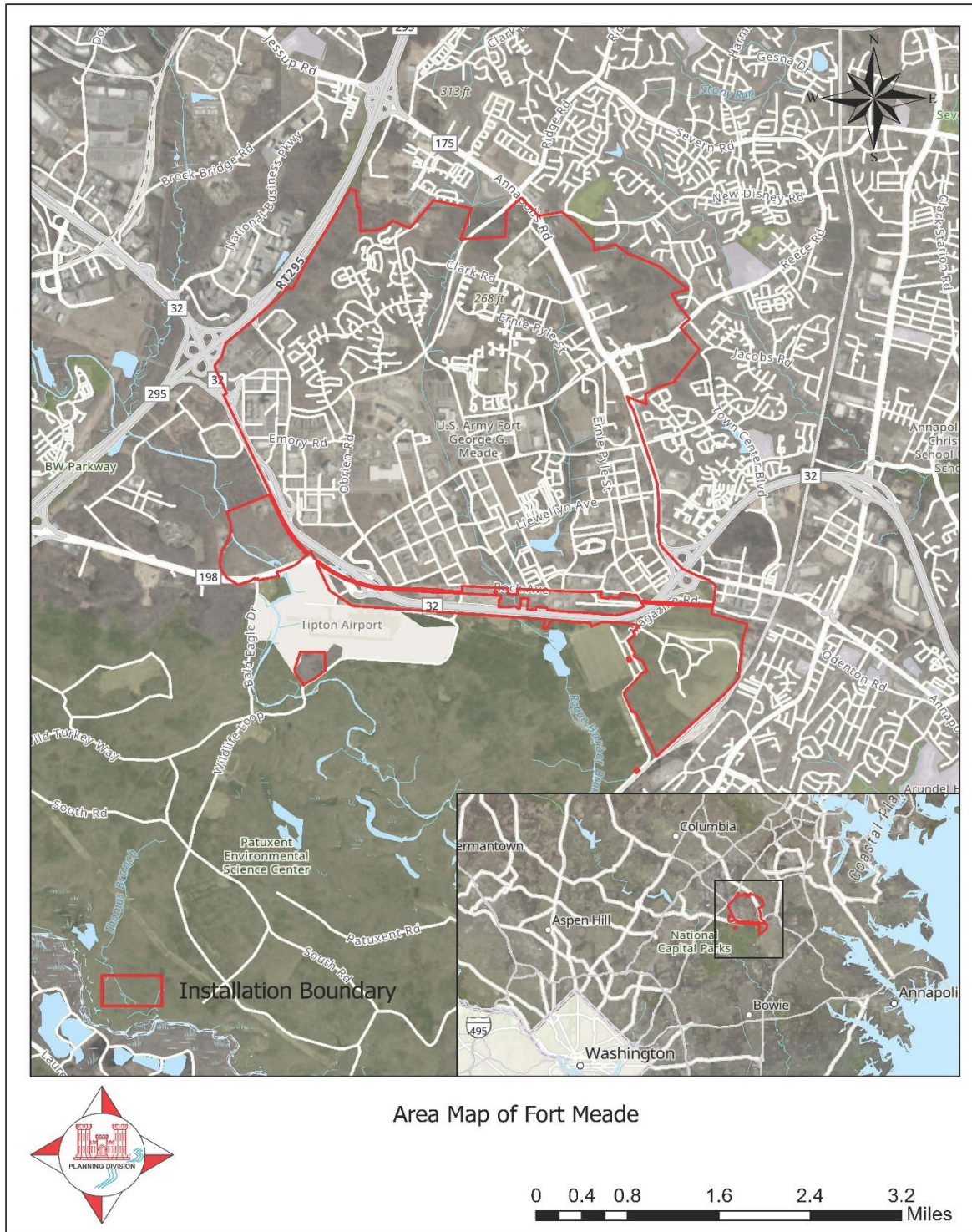


Figure 2. Site Detail Map



b. Photographs

Representative photographs are presented in the EA.

3. Basis for Determination

FMMD evaluated the proposed action based on its foreseeable effect on the following General Policies.

a. General Policies

i. Core Policies

Relevant core policies are described below. The core policies which are not relevant or applicable to the Proposed Action are: 3 (State wild lands), 4 (State parks, forests, etc.), 5 (Water appropriation), 6. (Character and Scenic Value of Waterways), 7 (Natural Water Flow), 8 (Permanent dune structures), 9 (Assateague Island), 10 (Public Hearing for Non-Tidal Waters), 11 (Soil Erosion), 12 (Controlled hazardous substances), 13 (Port of Baltimore), and 14 (Outer Continental Shelf).

1. Air Resources

FMMD is located within an area designated by the USEPA as “attainment” for the criteria pollutants except for 8-hour ozone (O₃) and sulfur dioxide (SO₂).

The Proposed Action would result in temporary, minor, direct, adverse impacts to air quality, primarily due to construction equipment and activities. Under the Proposed Action, potential air quality impacts from construction activities would occur from: 1) combustion emissions due to the use of fossil fuel-powered equipment and vehicles, and 2) particulate emissions during earth-moving activities. Construction vehicles used would consist of a mixture of excavators, backhoes, loaders, dump trucks, dozer crawlers, graders, concrete mixing trucks, and other vehicles and equipment typically associated with building construction activities. As documented in the EA, air emissions associated with the Proposed Action would not exceed CAA NAAQS General Conformity *de minimus* thresholds.

It is also possible that due to that anticipated decrease of commuter traffic from Soldiers currently housed off-installation (due to the housing shortage), the Proposed Action could result in a minor, long-term, indirect, beneficial impact on air quality from the resultant decrease in vehicular emissions. Operation and maintenance equipment could include lawnmowers, weedwhackers, leaf blowers, and natural-gas boilers, the regular use of which would not exceed the NAAQS.

2. Noise

The Proposed Action construction activities would have short-term, minor, direct, adverse impacts on noise in the immediate area of the new barracks sites, primarily due to site preparation and construction activities. The area is subject to considerable road noise from Highway 32 but is quieter on the weekends. Within the vicinity of the Proposed Action there is a chapel located nearby on 6th Armored Cavalry Road and existing barracks 200 to the north. There are no other sensitive receptors nearby. Construction equipment is expected to include gas and/or diesel-powered equipment such graders, tractors, cranes, excavators, generator sets, welders, aerial lifts, cement and mortar mixers, pavers, paving equipment, rollers, and other vehicles and equipment typically associated with building construction activities. Once mobilized to the site, the majority

of construction equipment would remain within the proposed construction boundary until the phase of construction for which the equipment was needed is complete. Within the proposed construction area, noise from construction activities would vary depending on the type of equipment being used at the time.

Any of the Proposed Action phases may generate noise levels during the earth moving phase (site clearing activities involving pieces of equipment) that could range from 72 to 98 dBA when measured 50 feet from the respective piece of equipment. The nearest noise receptor would be residents in the existing barracks and congregants to the chapel located nearby on 6th Armored Cavalry Road.

Noise impacts would be further minimized by equipping construction equipment with appropriate sound-muffling devices (i.e., from the original equipment manufacturer or better), and limiting engine idling to less than five minutes. Additionally, construction activities would take place during daylight hours and during weekdays.

i. Water Quality

Relevant water quality policies are described below. Water Quality Policies that are not relevant to the Proposed Action include: 1 (Pollutants), 2 (Protecting State waters for recreation, fish, aquatic life, and wildlife), 3 (Toxic pollutants discharge), 5 (Additional treatment for discharges), 6 (Thermal discharges), 7 (Pesticide storage), 8 (Non-structural stormwater management for developments), 9 (Used oil), 10 (Toxic dumping material), or 11 (Public meetings).

Policy 4. Stormwater Discharge Permit for discharge into State waters.

The Proposed Action would not involve discharging or introducing any substance into any state waters. The stormwater pond has not been properly maintained, but in its current state it could support the Phase I barracks per discussions with USACE and FMMD. However, retrofitting would be required to support Phases II and III barracks. Retrofit design details will be specified and made as part of Phase I, such that the pond is also ready once Phases II and III come online. Construction of the three phases will result in an increase in impervious surfaces, but this increase will be mitigated to the maximum extent possible so as not to overload the SWM system. There is a berm between the SWM feature and Midway stream, and an outfall on the eastern side of the SWM pond drains stormwater from the SWM into the adjacent floodplain. West of the SWM is a road and the north and south are also constrained by development.

For all three phases of the project, the project proponent will be required to submit a stormwater management and erosion and sedimentation plan to MDE for approval. The project would overlap existing TMDL facilities that includes tree box filters that were installed in 2018 and 2019. The project proponent will be required to obtain a stormwater management permit from the MDE and provide a replacement plan for the 1.0 TMDL credit assigned to the tree box filters. FMMD will comply to the maximum extent technically feasible with COMAR 26.17.02.01 and EISA Section 438 to ensure that pre- and post-hydrology remain the same with no additional off-site discharge of stormwater.

Construction activities may temporarily expose soils and introduce sedimentation to any temporary surface waters from rain, which are not expected to reach the nearest stream, Midway. To avoid erosion of exposed soils, the construction contractor would install and maintain ESC BMPs to minimize sedimentation. Any polluting substances needed for construction equipment on site (e.g., diesel fuel) would be stored and contained appropriately and disposed of appropriately, with all necessary permits. Any spills would be cleaned up appropriately, in accordance with the FMMD Spill Prevention, Controls and Countermeasures Plan. All activities would comply and demonstrate consistency with the relevant laws, policies, and regulations.

Due to the distance from FMMD to the Chesapeake Bay, any impacts to finfish resources from non-point source pollution in the form of sedimentation caused by construction are not reasonably anticipated to enter the Chesapeake Bay or its tributaries. As previously described, a Stormwater Management Plan and ESC Plan would be prepared in accordance with Maryland Stormwater Management Act permit regulations and implemented to prevent impacts to other surface water bodies.

i. Flood Hazards

The Proposed Action is not located in a coastal tidal floodplain nor in a flood hazard area and would have no impact on Flood Hazard policies 1, 2, or 3 (Downstream discharge for named watersheds).

a. Coastal Resources

i. Chesapeake and Atlantic Coastal Bays Critical Area

FMMD is not located in the Critical Area as designated and administered through the Maryland's Critical Area Program.

b. Tidal Wetlands

There are no tidal wetlands, marshes, or tidal waters at FMMD.

i. Non-tidal Wetlands

Policy 1. Modifying character of non-tidal wetlands

Consultation with the USFWS was initiated on November 13, 2020. USFWS requested that wetlands, if any, be identified at the project site. Accordingly, USACE Baltimore District performed a survey for wetlands at the Proposed Action site. The findings, presented in internal project site reports, indicate that there are no wetlands on any of the proposed barracks building sites, but there are non-tidal wetlands located immediately east of the SWM pond. There are no other wetland areas classified by the National Wetlands Inventory or Maryland Department of Natural Resources in the Proposed Action areas.

The Proposed Action would result in permanent impacts to 1,112 square feet of emergent nontidal wetlands and 3,607 square feet of the 25-foot nontidal wetland buffer associated with improvements to the SWM pond. In accordance with COMAR, the FMMD DPW received a 5-year letter of authorization on October 25, 2021 from the State of Maryland to conduct a regulated

activity in a nontidal wetland for the Proposed Action; regulated activities include clearing, grading, and filling for the repair and retrofitting of the SWM pond.

ii. Forests

Relevant forest policies are described below. Forest Policies that are not relevant to the Proposed Action include: 3 (Commercial timber harvesting), 4 (Highway construction projects), and 5 (Roadside tree cutting).

Policy 2. Forest Conversation Act

It is the intent of FMMD to conserve forested areas to the maximum extent practical in accordance with the Maryland Forest Conservation Act (FCA) and the FMMD FCA and Tree Management Policy while continuing to sustain and support current and future missions. This includes managing the FMMD forest conservation program in accordance with the 2013 MOU between the State of Maryland and the DoD concerning federal consistency requirements of the Coastal Zone Management Act.

Limited removal and disturbance of trees would be required for site preparation as the Phase I and II project sites are mostly cleared lots and the Phase III site has no trees. Phase I has two large, non-specimen-sized pin oaks for which removal would be avoided. Most of the specimen tree removal would occur within the Phase II lot and mitigation would be required for any impacted trees and/or forested areas. Mitigation would be required for impacted trees and/or forested areas for all three project phases. Trees can be replanted elsewhere on FMMD, if necessary, for mitigation. A replacement area has yet to be identified for specimen trees removed from the Phase II site, but the project proponent would work with the FMMD DPW to comply with the FMMD FCA and Tree Management Policy, which requires compliance for all projects of 40,000 square feet or larger and that the equivalent of 20% of a project area be forested, for which all three project phases qualify. Where tree removal is required, the Proposed Action would include 1:1 street tree replacement for street trees removed by the project and require, to the maximum extent practical, planting of street trees on streets around the perimeter of each phase of the barracks projects. Tree planting and landscaping would be composed of native, non-invasive plant species. Removing the nuisance Bradford pear is a benefit. In addition, upon completion of construction for all three sites, trees would be planted such that 70% of parking would be shaded within 15 years. Construction impacts to vegetative habitat would be limited to the immediate project areas.

Policy 6. Non-tidal wetland compliance

The Proposed Action entails improvements to the storm water treatment pond, which require impacts to the adjacent non-tidal wetland. Therefore, the BMPs identified in the ESC plan, to minimize sedimentation and erosion associated with construction activities, would be implemented.

Additionally, because the proposed construction would disturb more than one acre of ground surface, in accordance with COMAR, the FMMD DPW received a 5-year authorization on October 25, 2021, from the State of Maryland to conduct a regulated activity in a nontidal wetland for the

project including clearing, grading, and filling for the repair and retrofitting of the stormwater management system. Areas disturbed within the equipment staging area would be reseeded, replanted, and/or re-sodded following construction activities, which would decrease the overall erosion potential of the site and improve soil productivity.

iii. Historic and Archaeological Sites

Policies 1, 2 and 3.

No historic properties have been identified within the three project sites. However, there is the potential for adverse impacts to previously unidentified cultural resources that could be inadvertently discovered during any construction work that requires vegetation removal or causes subsurface disturbance.

To ensure adverse impacts to historical and archaeological sites are avoided, FMMD initiated Section 106 consultation with the Maryland State Historic Preservation Officer (SHPO) and selected Native American Tribes to ascertain potential impacts of the Proposed Action to historical and archaeological sites prior to implementing the Proposed Action.

Additionally, to minimize the potential adverse impact to previously unknown cultural resources during subsurface work, FMMD would implement an “Accidental Discovery” plan to comply with the NHPA, Archaeological Resources Protection Act of 1979, Native American Graves Protection and Repatriation Act (NAGPRA), American Indian Religious Freedom Act, 36 CFR Part 79, and EO 13007: Indian Sacred Sites. Under this plan, if prehistoric or historic artifacts that could be associated with Native American, early European, or American settlement are encountered at any time during construction or operation of the expansion areas, FMMD would cease all activities involving subsurface disturbance in the vicinity of the discovery. Should human remains or other cultural items, as defined by NAGPRA, be discovered during project construction, construction work would immediately cease until the FMMD Cultural Resources Manager, Maryland SHPO, and selected Native American Tribes are contacted to properly identify and appropriately treat discovered items in accordance with applicable state and federal law(s). Implementation of these measures would ensure that the Proposed Action would have “No Adverse Effect” on historic properties or cultural resources.

No additional impacts are anticipated from construction or operation and maintenance of the barracks complex.

iv. Living Aquatic Resources

Relevant living aquatic resources policies are described below. Living aquatic policies that are not relevant to the Proposed Action include: 2 (Sustainable fisheries harvesting), 3 (State land or water resource acquisitions), 4 (Passage of finfish), 5 (Instream construction windows), 6 (Riparian buffers for self-sustaining trout populations), 8 (Impacts on Submerged Aquatic Vegetation), 9 (Oyster bars), 10 (Oyster harvest), 11 (Genetically altered organisms), 12 (Vectors for introducing nonnative organisms), 13 (Snakehead introduction), and 14 (Nonnative oyster introduction).

Policy 1. Taking of a State Listed Species without an Incidental Take Permit

The MD DNR Wildlife and Heritage Service determined that there are no official State or Federal records for listed plant or animal species (with the exception of Northern long-eared bat and Indiana bat) within the project area and, therefore, no specific concerns regarding potential impacts or recommendations for protection measures unless the project area changes.

An unpermitted "take" of an RTE species is not anticipated to occur under construction or operation of the Proposed Action. If a protected species should be found in a proposed construction area, FMMD would consult with the USFWS and/or MDE and appropriate steps would be taken to ensure the species was not harmed.

Policy 7. Aquatic and terrestrial habitat impacts in non-tidal waters

For aquatic and terrestrial habitat, minor, short-term, direct, adverse impacts could result from repairs to the stormwater treatment pond. Construction would require direct disturbance to the man-made pond while restoration improvements are made. As previously described, short-term adverse impacts would be minimized by implementing BMPs per the ESC to minimize erosion and sedimentation. In general, significant, long-term beneficial impacts are anticipated for nearby aquatic and terrestrial habitat during operation of the newly improved stormwater treatment pond.

c. COASTAL USES

- 1. Mineral Extraction:** Not Relevant
- 2. Electrical Generation and Transmission:** Not Relevant
- 3. Tidal Shore Erosion Control:** Not Relevant
- 4. Oil and Natural Gas Facilities:** Not Relevant
- 5. Dredging and Disposal of Dredged Material:** Not Relevant
- 6. Navigation:** Not Relevant
- 7. Transportation:** Not Relevant
- 8. Agriculture:** Not Relevant
- 9. Development:** Not Relevant
- 10. Sewage Treatment:** Not Relevant

4. Summary of Findings

Based on the above analysis, FMMD would 1) comply with all MD coastal policies; 2) ensure all federal consistency requirements are met; 3) follow all MDE regulations and Army INRMP requirements, and; 4) implement measures to mitigate any potential environmental impacts.

FMMD has conducted a Coastal Zone Management Federal Consistency review of the Proposed Action and has determined that the Proposed Action is consistent, to the maximum extent practicable, with the policies of Maryland's federally approved Coastal Zone Management Program.

Appendix E

Public Involvement Documentation