NOTICE OF AVAILABILITY

Draft Environmental Assessment
780th Cyber Brigade Facility Environmental Assessment
U.S. Army Garrison Fort George G. Meade, Maryland

Interested parties are hereby notified that the Fort George G. Meade (FMMD) has prepared a Draft Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations implementing the procedural provisions of the NEPA, 40 Code of Federal Regulations (CFR) 1500-1508, and *Environmental Analysis of Army Actions*, 32 CFR 651. The Draft EA evaluates the potential environmental, cultural, and socioeconomic effects associated with the development of a new facility in support of the U.S. Army INSCOM Cyber Brigade (780th MI) and subordinate units.

Based on the Draft EA, the Army has determined that implementation of the Proposed Action would have no significant adverse direct, indirect, or cumulative effects on the quality of the human or natural environment. Therefore, at the conclusion of the public comment period, it is anticipated that a Finding of No Significant Impact (FNSI) would be appropriate and would be signed for the solar array project. An Environmental Impact Statement, therefore, is not deemed necessary to implement the Proposed Action.

The Draft EA and Draft FNSI is available for review and comment for 30 days from publication of this notice. Copies may be found online at https://home.army.mil/meade/index.php/my-fort/all-services/environmental. The documents can also be found at the following locations: Medal of Honor Memorial Library on Fort Meade and Odenton Regional Library, 1325 Annapolis Road, Odenton, MD. Additionally, copies of the Draft EA may be obtained by writing to the address below. Comments on the Draft EA may be submitted in writing within 30 days from the publication of this notice to: ATTN - Fort Meade 780th Cyber Facility Environmental Assessment, US Army Corps of Engineers, Baltimore District Planning Division, 2 Hopkins Plaza, 10th Floor, Baltimore, MD 21201; or via email to Rebecca Marson, US Army Garrison Fort George G. Meade DPW, Environmental Division at rebecca.j.marson.civ@army.mil.

Draft
780th Cyber Brigade Facility Environmental Assessment

Fort George G. Meade

August 2024

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1.0 INTRODUCTION

1.1 PROJECT BACKGROUND

This Environmental Assessment (EA) is prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended; its implementing regulations published by the Council on Environmental Quality (CEQ) (Code of Federal Regulations [CFR] Title 40 Parts 1500–1508), as amended; and 32 CFR 651, which implements NEPA for the U.S. Army as revised and published in the Federal Register on March 19, 2002, as Environmental Analysis of Army Actions. 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.

Fort George G. Meade, Maryland (FMMD) is approximately 5,500 acres in size and is located in northwest Anne Arundel County, Maryland, roughly halfway between Baltimore and Washington, D.C. The largest employer in Maryland with a workforce of approximately 60,000 employees, it is headquarters for the United States Cyber Command and the National Security Agency. FMMD supports more than 119 tenant organizations from all military services and several federal agencies. Other major tenant units include the Defense Information Group, 704th Military Intelligence Brigade, 902nd Military Intelligence Groups, United States Environmental Protection Agency (USEPA) Science Center, Defense Media Activity, Defense Courier Service, U.S. Department of Defense (DoD) Consolidated Adjudication Facility, and Defense Information System Agency. Fort Meade is located near the communities of Odenton, Laurel, Columbia, and Jessup, Maryland (see **Figure 1-1**).

This EA provides NEPA analysis and documentation for the Proposed Action to provide a consolidated, secure facility to house the newly established U.S. Army Intelligence and Security Command (INSCOM) Cyber Brigade (780th MI) and subordinate units. Currently the INSCOM Cyber Brigade is located in seven buildings, all of which do not provide adequate space, rendering their locations inefficient. The proposed project would be located on approximately 5.3-acres at the northwest corner of 3rd Street and Chisolm Avenue, adjacent to the existing Building 2234.

A second, alternative site is also to be included for analysis in this EA. The Alternative 2 site encompasses approximately 6 acres of a 13.8-acre site at 9th and Ernie Pyle Streets on the eastern portion of Fort Meade.

In addition, this EA evaluates the No Action Alternative.

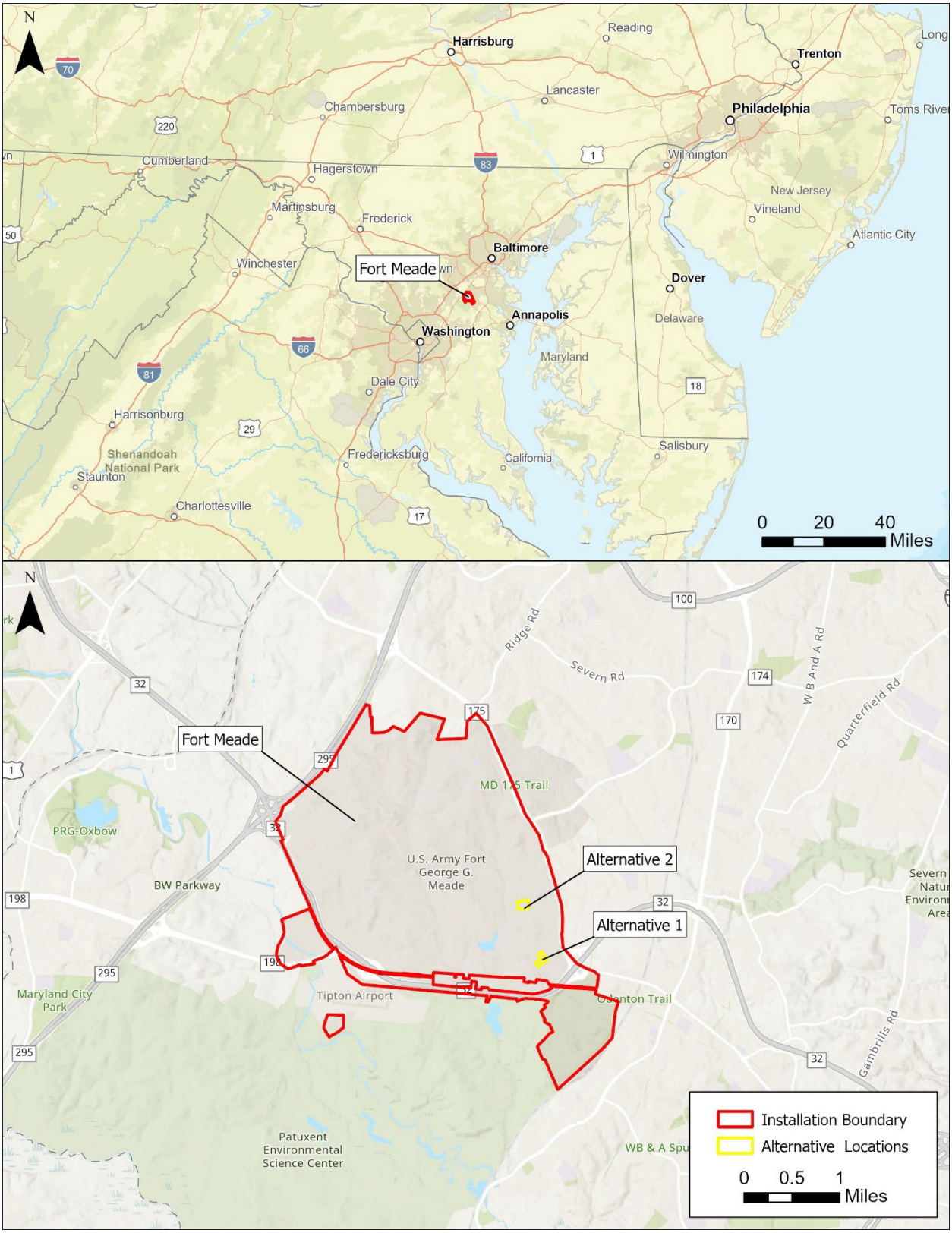

Figure 1-1. Fort Meade Location Map

1.2 PURPOSE AND NEED

The ***purpose*** of the Proposed Action is to provide a consolidated, secure building to house the newly established U.S. Army INSCOM Cyber Brigade (780th MI) and subordinate units.

The ***need*** for the Proposed Action is to serve the INSCOM Cyber Brigade more efficiently. Currently, the INSCOM Cyber Brigade is located in seven buildings, all of which do not provide adequate space, rendering its operations inefficient.

1.3 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

This EA informs decision makers and the public of the likely environmental impacts of the Proposed Action and the 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.

1.4 PUBLIC INVOLVEMENT

Public participation opportunities with respect to this EA and decision making on the Proposed Action are guided by 32 CFR 651. Upon completion, the EA will be made available to the public for 30 days, along with a draft Finding of No Significant Impact (FONSI). 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, EA, or draft FONSI, if applicable. As appropriate, the Army may then execute the FONSI and proceed with implementation of the Proposed Action. If it is determined prior to issuance of a final FONSI that implementation of the Proposed Action would result in significant impacts, the Army would publish a Notice of Intent to prepare an Environmental Impact Statement, commit to mitigation actions sufficient to reduce impacts below significance levels, or not implement the actions. Documentation of public involvement activities conducted to date is provided in **Appendix A**.

1.5 ENVIRONMENTAL LAWS AND REGULATIONS

Army decisions that affect environmental resources and conditions occur within the framework of numerous laws, regulations, and Executive Orders (EOs). Some of these authorities prescribe standards for compliance while others require specific planning and management actions to protect environmental values potentially affected by Army actions. Compliance with the following environmental regulations and EOs include, but are not limited to, the Clean Air Act (CAA), Clean Water Act (CWA), Section 106 of the National Historic Preservation Act (NHPA), Coastal Zone Management Act (CZMA), Endangered Species Act (ESA), Fish and Wildlife Coordination Act, Archeological Resources Act, Migratory Bird Treaty Act (MBTA), Noise Control Act, *Environmental Justice in Minority Populations and Low-Income Populations* (EO 12898), and *Protection of Children from Environmental Health Risks and Safety Risks* (EO 13045).

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2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This section describes the Proposed Action and alternatives to the Proposed Action. In accordance with CEQ NEPA regulations at 40 CFR 1502.14, the purpose of this section is to define the differences between the alternatives.

2.1 PROPOSED ACTION

The proposed project would include construction and operation of an approximately 94,500-square-foot (ft^2) facility to accommodate approximately 435 personnel. The facility would include office space, operations areas, conference rooms, classrooms, secure compartmented information facility spaces, server space, arms vault, building utilities and connections, redundant mechanical and electrical systems, secure telecommunication distribution systems, backup (standby) power generation, and an approximately 275-space paved parking lot. Improvements and/or retrofitting of the existing stormwater management pond within the western portion of the project area would also be addressed as part of the project. Construction is anticipated to begin in October 2027, and would take approximately 2 years to complete.

2.2 ALTERNATIVE 1

Alternative 1 would include all design aspects identified in **Section 2.1** on an approximately 5.3-acre area at the northwest corner of 3rd Street and Chisholm Avenue, adjacent to the existing Building 2234. This site is depicted in **Figure 2-1**.

2.3 ALTERNATIVE 2

Alternative 2 would construct the Proposed Action on approximately 6 acres of a 13.8-acre site at 9th and Ernie Pyle Streets in the southeastern portion of the installation. Improvements and/or retrofitting of the existing stormwater management pond within the western portion of the project area would also be expected to be analyzed as part of the project. This site is depicted in **Figure 2-2**.

2.4 NO ACTION ALTERNATIVE

Under the No Action Alternative, the Proposed Action would not be implemented. The No Action Alternative entails INSCOM continuing to use the spaces it has been provided in seven locations. The No Action Alternative does not address the operational requirements of INSCOM.

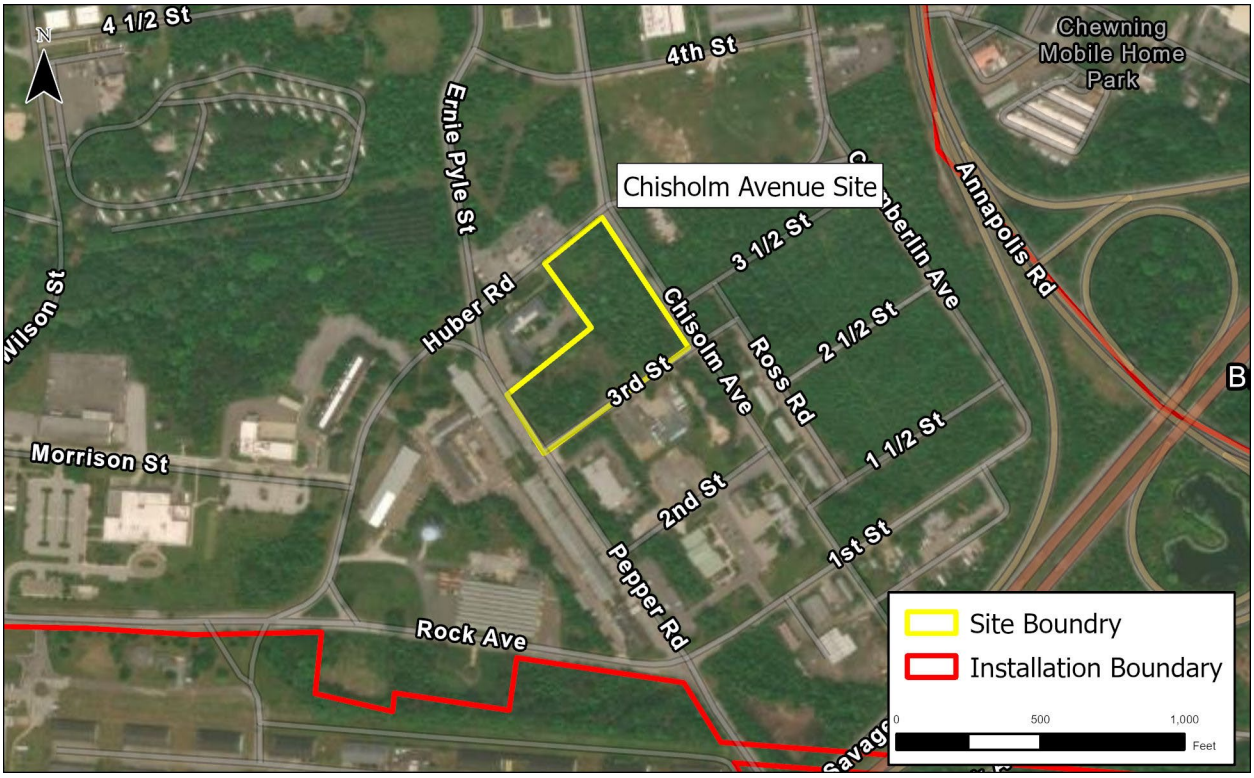


Figure 2-1. Alternative 1 Site

Figure 2-2. Alternative 2 Site

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the environmental resources and conditions most likely to be affected by the Proposed Action and provides information to serve as a baseline from which to identify and evaluate potential environmental impacts. Baseline conditions represent current conditions. This section also describes the potential environmental impacts of the Proposed Action on the baseline conditions of each environmental resource.

The specific criteria for evaluating the potential environmental impacts of the Proposed Action and alternatives are discussed in this section by resource area. The significance of an action is also measured in terms of its context and intensity. The context and intensity of potential environmental effects, including cumulative impacts, are described in terms of duration, the magnitude of the impact, and whether they are adverse or beneficial, and are summarized below.

Short-term or long-term. In general, short-term impacts are those that would occur only with respect to a particular activity, for a finite period, or only during the time required for construction or installation activities. Long-term impacts are those that are more likely to be persistent or chronic.

Negligible, Minor, Moderate, or Major (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. Major or significant impacts are those that, in their context and because of their magnitude (severity), have the potential to meet the thresholds for significance identified for each resource area and, thus, warrant heightened attention and examination for potential means for mitigation or the preparation of an Environmental Impact Statement to fulfill the policies set forth in NEPA.

Adverse or Beneficial. An adverse impact is one having unfavorable or undesirable outcomes on the natural or human-made environment. A beneficial impact is one having positive outcomes on the natural or human-made environment.

Cumulative Impacts. The CEQ NEPA regulations (40 CFR 1508(1)(g)(3)) require assessment of cumulative impacts in the decision-making process for federal projects. For the purposes of this EA, cumulative impacts result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable actions, regardless of who undertakes such actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. The study area for purposes of this EA has been defined for evaluation of potential impacts to human and natural resources within the perimeter boundary of the FMMD installation. This constitutes the Proposed Action's return on investment (ROI) for cumulative effects. This ROI includes areas where the Proposed Action's effects would most likely contribute to cumulative environmental effects. The Army considered a wide range of past, present, and reasonably foreseeable future actions in the ROI that could contribute to cumulative environmental effects, regardless of the nature of the actions or the Army's jurisdiction. Each resource section addresses cumulative effects for each alternative. This analytical approach provides a more complete understanding of resource conditions that the Proposed Action could magnify, amplify, exacerbate, or benefit. Only "reasonably foreseeable" projects (well-developed, in mature planning stages, and/or with secure funding) are considered in the cumulative impact analysis. Conceptual projects and broad goals, objectives, or ideas listed in planning documents that do not meet the above criteria are not considered reasonably foreseeable for the purposes of this analysis.

For purposes of this EA document, the following reasonably foreseeable future actions expected to take place within a 5-year time frame of the proposed 780th Cyber Facility construction are included in the evaluation of potential cumulative effects:

- Demolish World War II–era Buildings 218, 219, 229, 239, 249, 399, 2206, 2207, 2212, 2214, 2241, 2242, 2243, 2250, 2501, and 2630 in the vicinity of the Proposed Action on FMMD
- Construct U.S. Army Field Band Dispatch Building at 3½ Street and Chamberlain Avenue to replace outdated Field Band Dispatch Building
- Construct FMMD Directorate of Public Works (DPW) Base Operations (BASOPS) Complex at 2½ Street and Chamberlain Avenue with high bay storage facility and two-story administration building, to also house Logistics Readiness Center operations
- Renovate Building 2234 to sustain, repair, and modernize the facility to provide secure administrative office space in support of specific units related to the 780th Military Intelligence Brigade (including the command unit)
- Construct Marine Corps Cyber Operations Facility at 4th Street and Chisholm Ave

3.1 LAND USE

3.1.1 Affected Environment

The term "land use" refers to real property classifications that indicate either natural conditions or the type of human activity occurring on a parcel. Land use descriptions are codified in installation master planning and local zoning laws. Land use categories do not follow a nationally recognized convention or uniform terminology. As a result, the meanings of various land use descriptions, labels, and definitions vary among jurisdictions.

Natural conditions of property can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. A wide variety of land use categories result from human activity. Descriptive terms often used include residential, commercial, industrial, agricultural, institutional, and recreational.

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

Outside Fort Meade. Land use surrounding Fort Meade consists primarily of developed property that supports a growing population. Cities near Fort Meade include Odenton to the east, Jessup to the north, and Laurel to the west. Areas north and east of Fort Meade have a range of residential uses, with higher-density residential units to the east. Land use northwest of the installation is categorized as residential with some industrial, mixed use, and commercial areas. Land use west of Fort Meade includes a variety of mixed use, industrial, and low- to high-density residential uses with conservation, forested, and open-space areas along the Little Patuxent River. Land uses south of Fort Meade include mixed uses; low- to high-density residential; transit (the Tipton Airport); and natural features, including the Patuxent Research Refuge. Odenton Town Center is located southeast of the installation (AAC 2021).

The *Anne Arundel County General Development Plan: Plan 2040* (AAC 2021) guides land use and management. The plan integrates land use and transportation policy to support development for critical economic areas, such as Fort Meade. Although federal land is not subject to state or county zoning regulations or land use policies, the 2020 *Fort Meade Area Development Plan* (ADP) (U.S. Army 2020) considers past iterations of Anne Arundel County's *General Development Plan* (AAC 2021) for planning considerations and off-installation land use. **Figure 3-1** depicts Anne Arundel County land use outside Fort Meade.

Fort Meade (FMMD). FMMD encompasses approximately 5,500 acres in the northwestern corner of Anne Arundel County, Maryland. The installation is approximately 18 miles southwest of Baltimore, Maryland (see **Figure 3-2**). The installation is composed primarily of administration, intelligence operations, instructional institutions, family housing, and support facilities. FMMD is bound by the Baltimore–Washington Parkway to the northwest, Annapolis Road (Maryland Route 175) to the northeast, and Patuxent Freeway (Maryland Route 32) to the south and west. Other significant nearby transportation arteries include U.S. Route 1 and Interstate 95, which run parallel to and just to the west of the Baltimore–Washington Parkway. Interstate 97, which connects Baltimore and Annapolis, is several miles east of FMMD (U.S. Army 2020).

Land use planning and development on the installation is guided by the 2020 Fort Meade ADP (U.S. Army 2020), which supports maximized use of land and facilities to support mission functions. Land use on the installation is generally divided into seven land use categories, referred to as building envelope standards, which regulate the allowable land uses in each area as well as the specific criteria to shape the form of the buildings: administrative, community support, housing, industrial, training area, troop housing, and open space.

The ADP further defines land on Fort Meade as areas that are developable and/or buildable (U.S. Army 2020). Analysis of these defined areas work congruently to inform the installation. The purpose of analyzing the developable area is to identify potential for new construction based on constraints present (i.e., existing utilities, buildings and roads, floodplains, wetlands, and environmental restoration areas, or operational constraints). No operational constraints exist on Fort Meade. Analysis of buildable area identifies land that should be regulated for appropriate use.

3.1.1.1 Alternative 1: Chisolm Avenue Site

Alternative 1 would develop the Army INSCOM 780th Cyber Facility on a 5.3-acre area at the northwest corner of 3rd Street and Chisholm Avenue, adjacent to the existing Building 2234. This land is undeveloped and largely forested. The Proposed Action is primarily in Development Area 1 with approximately 30 percent within Development Area 2 of the ADP. Developable Area 1 is defined as land that can be developed with minimal preparation, relocation, or demolition. Development Area 2 is defined as land that can be developed with some effort. Alternative 1 also resides within a buildable area with an administrative standard regulated for non-tactical operations. The surrounding area includes administrative and support facilities and forested land. An environmental restoration area, Installation Restoration Program (IRP) Site FGGM-96 (OU 46), is located within the project area. This environmental constraint is discussed further in **Section 3.3**.

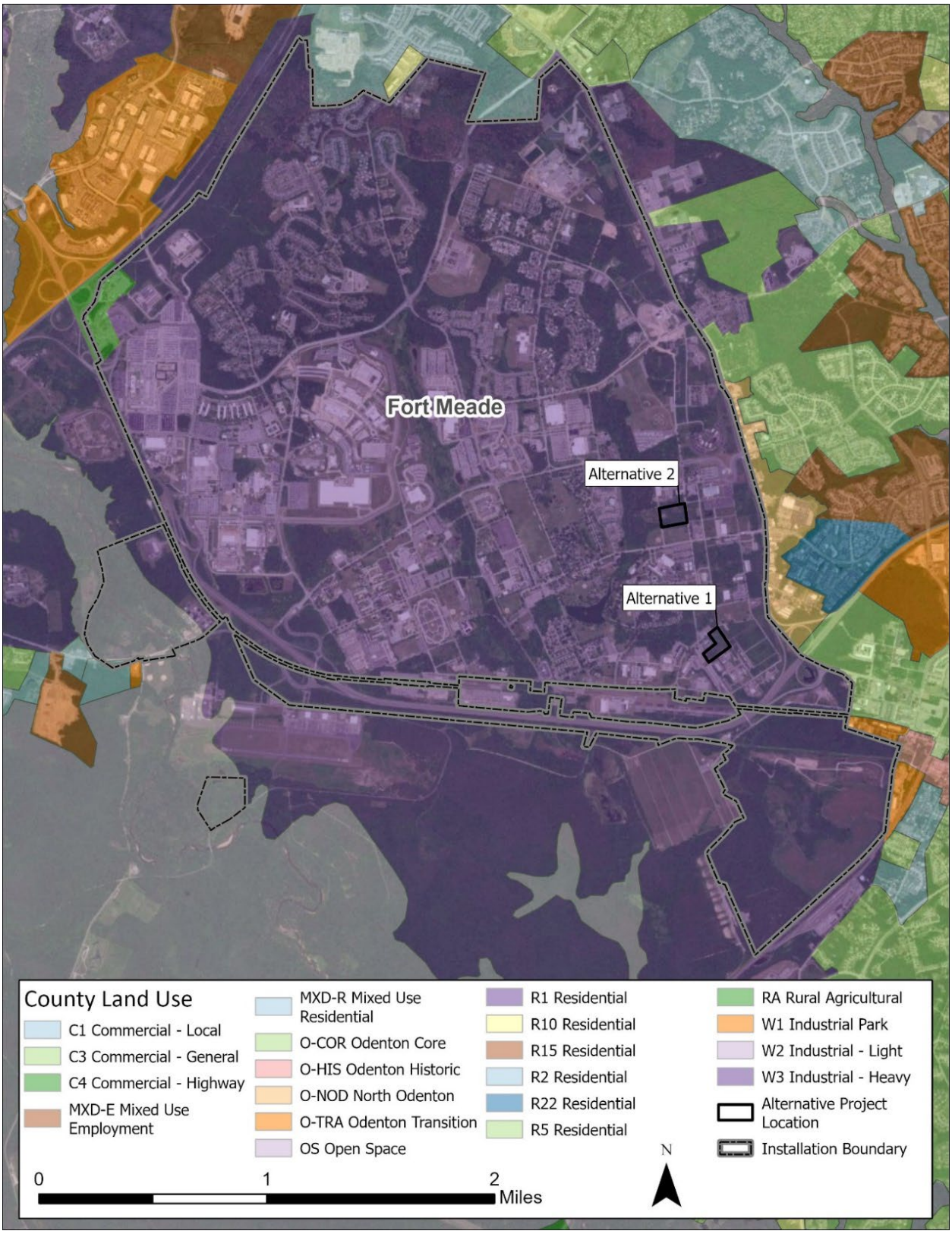
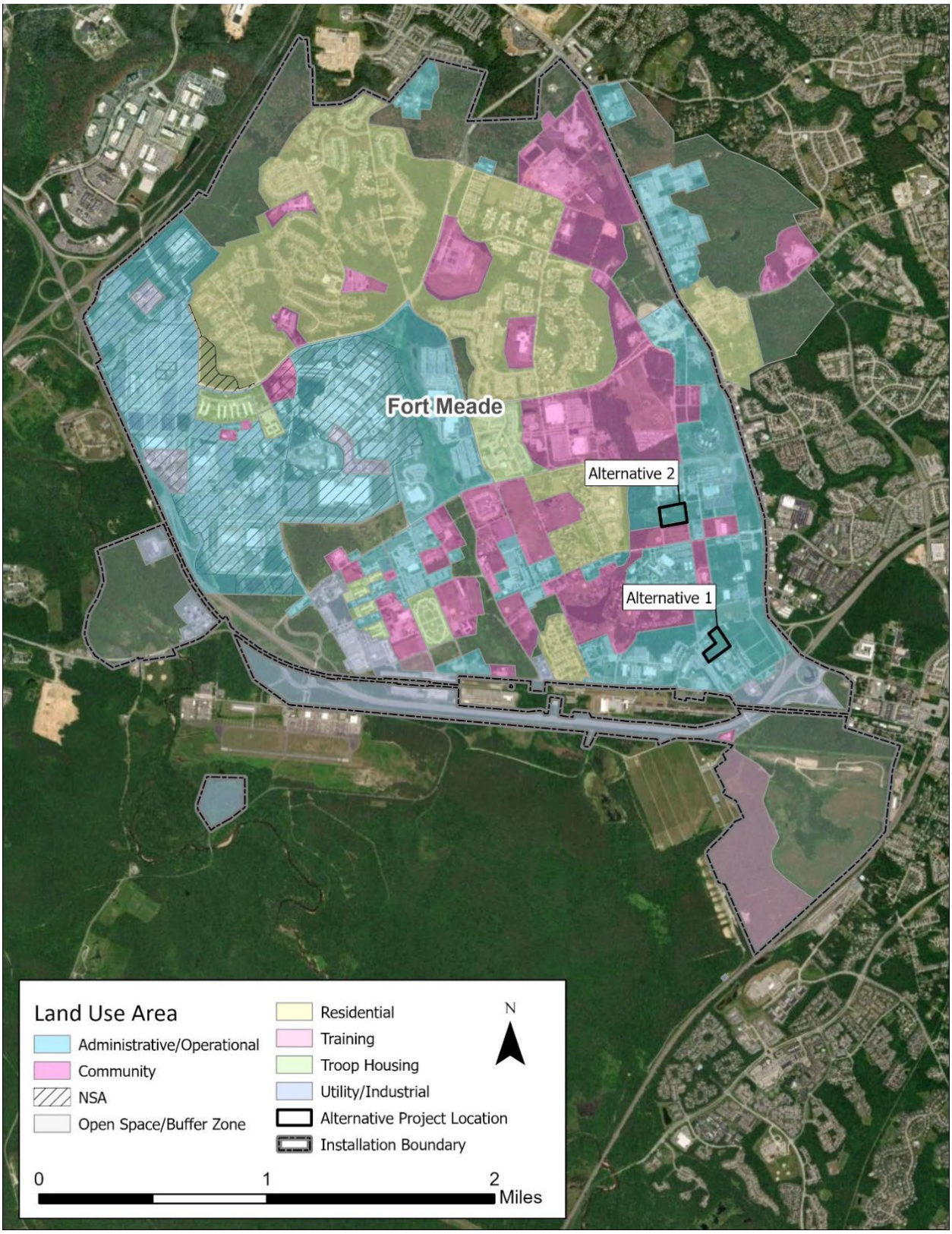


Figure 3-1. Surrounding Land Use in Anne Arundel County



Source: U.S. Army 2020

Figure 3-2. Fort Meade Existing Land Use

3.1.1.2 Alternative 2: Ernie Pyle Street Site

Alternative 2 would develop the facility on approximately 6.0 acres of a 13.8-acre site at 9th and Ernie Pyle Streets in the southeastern portion of the installation. This land is undeveloped and largely forested with a small impervious asphalt parking and storage area. The Proposed Action is entirely in Development Area 1. Development Area 1 considers hydrologic features of minor concern. A stream, Little Patuxent 1, runs along the southwestern boundary of this alternative. This environmental constraint is discussed further in **Section 3.7**. Similar to Alternative 1, Alternative 2 resides within a buildable area with an administrative standard regulated for non-tactical operations. The surrounding area includes administrative and support facilities, recreation areas, and forested land.

3.1.2 Environmental Consequences

Evaluation Criteria

Understanding potential impacts on land use from a Proposed Action requires evaluation criteria based on existing and future land use, development, and management. A project could have a significant impact on land use if it were to prevent the viability of a land use or the continued use or occupation of an area; be incompatible with adjacent land use to the extent that public health or safety is threatened or the installation's mission is compromised; conflict with planning criteria established to ensure the safety and protection of human life and property; or result in noncompliance with laws, regulations, or orders applicable to land use.

3.1.2.1 Alternative 1: Chisolm Avenue Site

Long-term, negligible, adverse and beneficial impacts on land use would be expected from development of the approximately 5.3 acres of currently undeveloped, largely forested land within the project area for the proposed facility. Beneficial impacts would be a result of construction and operation of the proposed facility conforming to the land use in the project area, administrative standard, in accordance with the 2020 Fort Meade ADP (U.S. Army 2020).

3.1.2.2 Alternative 2: Ernie Pyle Street Site

Long-term, negligible, adverse and beneficial impacts on land use would be expected from development of the approximately 6 acres of currently undeveloped, largely forested and vegetated open-space land within the project area for the proposed facility. Beneficial impacts would be a result of construction and operation of the proposed facility that would conform to the land use in the project area, administrative standard, in accordance with the 2020 Fort Meade ADP (U.S. Army 2020).

3.1.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented, and existing conditions would remain unchanged. Therefore, no impacts on land use would be expected.

3.1.2.4 Cumulative Impacts

Long-term, minor, adverse and beneficial, cumulative impacts on land use would be expected as a result of the upgraded facilities and infrastructure associated with the Proposed Action as well as the reasonably foreseeable actions identified in **Section 3.0**. Development of the proposed action, ongoing development of Fort Meade, and other cumulative projects, when combined would result in a cumulative conversion of undeveloped, forested land to developed land. Resultant impacts would be minimized because the proposed facilities' functions would continue to be compatible with surrounding land uses and would not result in changed land use designations for Fort Meade. Development would be guided to conform to existing installation development plans so that changes in land use designations or incompatibility with existing land uses would not be expected.

3.2 AIR QUALITY

3.2.1 Affected Environment

Air quality is defined by the concentration of various pollutants in the atmosphere at a given location. Under the CAA, the six pollutants defining air quality, called "criteria pollutants," are carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), suspended particulate matter (measured less than or equal to 10 microns in diameter [PM_{10}] and less than or equal to 2.5 microns in diameter [$PM_{2.5}$]), and lead. Volatile organic compound (VOC) and nitrogen oxide (NO_x) emissions are precursors of O_3 and are used to represent O_3 generation.

National Ambient Air Quality Standards (NAAQS) and Attainment Status. Under the CAA (United States Code [USC] Title 42 Chapter 85 et seq.), USEPA has established NAAQS (40 CFR 50) for criteria pollutants. Each state has the authority to adopt standards stricter than those established by USEPA. The State of Maryland accepts the federal NAAQS (Maryland Environmental Code Section 2-302). Areas that are and have historically been in compliance with the NAAQS or have not been evaluated for NAAQS compliance are designated as attainment areas. Areas that exceed a NAAQS are designated as nonattainment areas. Areas that have transitioned from nonattainment to attainment are designated as maintenance areas. Nonattainment and maintenance areas are required to adhere to a State Implementation Plan (SIP) to reach attainment or ensure continued attainment.

USEPA Region 3 and the Maryland Department of the Environment (MDE) regulate air quality in Maryland. FMMD is in Anne Arundel County, which is within the Metropolitan Baltimore Intrastate Air Quality Control Region (40 CFR 81.28). Anne Arundel County also is within the O_3 transport region, which includes 11 states and Washington, D.C. (40 CFR 81.457). USEPA has designated Anne Arundel County as moderate nonattainment for both the 2008 8-hour O_3 NAAQS and the 2015 8-hour O_3 NAAQS. In addition, FMMD is in a portion of Anne Arundel County that is designated as nonattainment for the 2010 SO_2 NAAQS. Federal actions occurring in these nonattainment areas are required to comply with SIPs that include the *State of Maryland 1-Hour Sulfur Dioxide (SO_2) National Ambient Air Quality Standard (NAAQS) State Implementation Plan for the Anne Arundel County and Baltimore County, MD ("Wagner") Nonattainment Area* (MDE 2020a) and the *Baltimore, MD Ozone Moderate Nonattainment Area State Implementation Plan (SIP) For the 0.070 ppm National Ambient Air Quality Standard for Ozone* (MDE 2023b). On November 2, 2022, USEPA issued a Clean Data Determination indicating that the Anne Arundel County and Baltimore County SO_2 nonattainment area has attained the 2010 SO_2 NAAQS based on 2019 and 2021 ambient air quality monitoring data. The area remains designated as nonattainment until USEPA formally accepts a State-submitted 10-year maintenance plan (87 *Federal Register* 66086). Anne Arundel County is designated as attainment or unclassified for all other criteria pollutants (USEPA 2023a, 2023b).

Clean Air Act Conformity. The USEPA General Conformity Rule applies to federal actions occurring in nonattainment and maintenance areas. A conformity applicability analysis is the first step to determining whether a federal action must be supported by a general conformity determination. A conformity applicability analysis is done by quantifying applicable direct and indirect emissions that would result from an action. When the total emissions of nonattainment and maintenance pollutants (or their precursors) exceed specified thresholds, a general conformity determination is required. The emissions thresholds that trigger requirements for a conformity determination are called *de minimis* levels and are specified at 40 CFR 93.153. *De minimis* levels (in tons per year [tpy]) vary by pollutant and depend on the severity of the nonattainment or maintenance status for the area in question. If the results of the conformity applicability analysis indicate that the total annual emissions would not exceed the *de minimis* levels, then the conformity

process is complete, and a general conformity determination is not required. The General Conformity Rule does not apply to federal actions occurring in attainment areas.

FMMD is in an area designated as moderate nonattainment for both the 2008 8-hour O_3 NAAQS and the 2015 8-hour O_3 NAAQS, and nonattainment for the SO_2 NAAQS. Therefore, the General Conformity Rule is potentially applicable to emissions of VOCs and NO_x (because they are precursors of O_3) and sulfur oxides (SO_x). As outlined in 40 CFR 93.153(b), the applicable *de minimis* level threshold for these pollutants is 50 tpy for VOCs and 100 tpy for NO_x and SO_x.

Local Ambient Air Quality. Existing ambient air quality conditions near FMMD can be estimated from measurements taken at nearby air quality monitors. **Table 3-1** summarizes the most recent measured air pollutant concentrations at air quality monitors near FMMD. These concentrations are used to indicate compliance with the NAAQS based on 3-year averages, which is the basis for USEPA attainment/ nonattainment designations. These data represent the most recently collected upper bound levels of criteria pollutants in the area, and have been provided for informational purposes. **Table 3-2** includes the most recent available emissions inventory for Anne Arundel County.

Table 3-1. 2022 Air Pollutant Concentrations near FMMD

Criteria Pollutant	Averaging Period	NAAQS	2022 Design Concentration[a]
CO	8-hour	9 ppm	0.7 ppm[b]
NO_2	1-hour	100 ppb	34 ppb[b]
O_3	8-hour	0.070 ppm	0.066 ppm[c]
$PM_{2.5}$	Annual	12 µg/m^3	5.9 µg/m^3 [b]
	24-hour	35 µg/m^3	14 µg/m^3 [b]
PM_{10}	24-hour	150 µg/m^3	0.0 µg/m^3 [c]
Lead	3-month	0.15 µg/m^3	Not available
SO_2	1-hour	75 ppb	2010: 12 ppb[d,e]

Source: USEPA 2022

[a] The design concentration is the monitored (ranked or percentiles-based) concentration that is used to assess compliance with the NAAQS using an average of the previous 3 years.

[b] Design concentration for Prince George's County, Maryland. Monitor located approximately 6.5 miles southwest of FMMD.

[c] Design concentration for Anne Arundel County, Maryland. Monitor located approximately 6.5 miles northeast of FMMD

[d] Design concentration for Anne Arundel County, Maryland. Monitory located approximately 12 miles east of FMMD.

[e] Anne Arundel County has been designated nonattainment for SO_2 based on modeling data; therefore, the determination of whether the County is meeting the NAAQS is based on modeling data rather than monitoring data, and the design concentrations are not considered in the attainment designation.

Key: ppm = µg/m^3 = micrograms per cubic meter; ppb = parts per billion; parts per million.

Table 3-2. 2020 Emissions Inventory for Anne Arundel County

NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_x (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Lead (tpy)	CO_2e[a] (tpy)
7,961	18,084	50,014	2,285	4,318	1,892	0.3	4,911,319

Source: USEPA 2023c

[a] To calculate the total equivalent emissions of carbon dioxide (CO_2e), all greenhouse gases (GHGs) are multiplied by their global warming potential and the results are added together. The global warming potentials used to calculate CO_2e are as follows: CO_2 = 1; CH_4 = 25; N_2O = 298.

Installation Emissions and Air Operating Permits. Title V of the CAA requires states to establish an air operating program. The requirements of Title V are outlined in the federal regulations in 40 CFR 70, and in Code of Maryland Regulations (COMAR) 26.11.02 and 26.11.03. The Prevention of Significant Deterioration (PSD) program protects the air quality in attainment areas. PSD regulations impose limits on

the amount of pollutants that major sources may emit. The PSD process would apply to all pollutants for which the region is in attainment (all except O_3).

Per MDE Title V permit regulations (COMAR 26.11.02 and 26.11.03), a Title V permit is required for facilities that have the potential to emit above major source thresholds. The major source thresholds for facilities in Anne Arundel County are 25 tpy for VOCs and NO_x, and 100 tpy for all other criteria pollutants. As shown in **Table 3-3**, FMMD does not emit nor has the potential to emit criteria pollutants above the major source thresholds and does not maintain an air operating permit (FMMD 2022a). Instead, FMMD obtains permits to construct minor sources of air emissions (e.g., emergency generators). All stationary sources of air emissions on FMMD are registered with MDE and accounted for in the O_3 and SO_2 SIPs. As identified in the SIPs, registered equipment includes 33 stationary sources of O_3 and 26 stationary sources of SO_2. FMMD is not required to report annual emissions; however, MDE uses a predictive model to calculate the emissions potential for nonattainment pollutants from registered stationary sources. The estimated emissions potential for FMMD includes approximately 0.08 tpy of NO_x and 0.04 of VOCs, which were estimated for 2023, and approximately 0.46 tpy of SO_x, which was estimated for 2021 (USEPA 2023a, MDE 2020a). Actual emissions for 2021 are shown in **Table 3-3**.

Table 3-3. 2021 Emissions Inventory for FMMD

Year	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_x (tpy)	Total Particulate Matter (tpy)	CO_2e[a] (tpy)
2021	16.82	10.30	13.77	0.41	1.26	40,157.27

Source: FMMD 2022a

[a] To calculate the total CO_2e, all GHGs are multiplied by their global warming potential and the results are added together. The global warming potentials used to calculate CO_2e are as follows: $CO_2 = 1$; $CH_4 = 25$; $N_2O = 298$.

Climate Change and Greenhouse Gases (GHGs). "Global climate change" refers to long-term fluctuations in temperature, precipitation, wind, sea level, and other elements of Earth's climate. Of particular interest, GHGs trap heat in the atmosphere, leading to global warming and climate changes that are predicted to have negative economic and social consequences across the globe. GHGs include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tropospheric O_3, and several fluorinated and chlorinated gaseous compounds. Most GHGs occur naturally in the atmosphere but increases in concentration result from human activities such as burning fossil fuels. The dominant GHG emitted in the United States is CO_2, accounting for 99.1 percent of all GHG emissions as of 2022, the most recent year for which data are available (USEPA 2023b). To estimate global warming potential, all GHGs are expressed relative to a reference gas, CO_2, which is assigned a global warming potential of 1. All GHGs are multiplied by their global warming potential, and the results are added to calculate total equivalent emissions of carbon dioxide (CO_2e).

EO 13990, *Protecting the Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*, signed on January 20, 2021, reinstated the *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*, issued on August 5, 2016 by CEQ that required federal agencies to consider GHG emissions and the effects of climate change in NEPA reviews, and directs federal agencies to determine an appropriate method for analyzing such emissions (CEQ 2016, USEPA 2023d). The CEQ *National Environmental Policy Act Interim Guidance on Consideration of Greenhouse Gas Emissions and Climate Change*, issued January 9, 2023, recommends quantifying a proposed action's GHG emissions in appropriate context (CEQ 2023). Accordingly, estimated CO_2e emissions associated with the Proposed Action are provided in this EA for informative purposes.

EO 14008, *Tackling the Climate Crisis at Home and Abroad*, requires federal agencies to develop and implement climate action plans. The Army Climate Strategy aims to address the threats posed by climate change (U.S. Army 2022). The Army also follows the *DoD Climate Adaptation Plan* and considers the *DoD Climate Risk Analysis* for climate change planning. The *Long-Term Strategy of the United States: Pathways to Net-Zero Greenhouse Gas Emissions by 2050* sets target benchmarks to achieve net-zero GHG emissions by no later than 2050 (DOS and EOP 2021).

The climate in central Maryland is affected by its proximity to the Chesapeake Bay, Delaware Bay, and the Atlantic Ocean. Between 1991 and 2020, the Baltimore area has had an average high temperature of 88.8 degrees Fahrenheit (°F) in the hottest month of July and an average low temperature of 25.4°F in the coldest month of January. The average annual precipitation was 45 inches per year. The wettest month of the year was July, with an average rainfall of 4.48 inches per month (NOAA 2024).

Ongoing climate change has contributed to higher temperatures and more frequent heat waves, increased storm intensity, changes to precipitation patterns, rising seas and retreating shorelines, disruption of natural ecosystems and built infrastructure, and human-health effects in Maryland, including Anne Arundel County. Climate change in Maryland results in intensified flooding in the winter and spring months, and drought during the summer and fall months. Sea-level rise causes saltwater intrusion farther upstream and in groundwater supplies, and leads to increased acidity, which can affect ecosystems and wildlife. Homes and other infrastructure are vulnerable to increases in storm intensity and frequency. Higher air temperatures can cause adverse health effects such as heat stroke and dehydration, especially in vulnerable populations (i.e., children, elderly, sick, low-income populations), which can affect cardiovascular and nervous systems. Warmer air also can increase the formation of ground-level O_3, which has a variety of health effects, including aggravation of lung diseases and increased risk of death from heart or lung disease (Whitehead et al. 2023, USEPA 2016).

In 2020, Anne Arundel County produced 4,777,327 tons of GHGs (composed of CO_2, CH_4, and N_2O), equivalent to 4,911,319 tons of CO_2e (USEPA 2023c). In 2021, Maryland produced 52.6 million metric tons of CO_2, and was ranked the 35th highest state producer of CO_2 in the United States (USEIA 2021).

3.2.1.1 Alternative 1: Chisolm Avenue Site

No stationary sources of air emissions are located within the Chisolm Avenue Site. The closest stationary air emissions sources to the Chisolm Avenue Site include a natural gas–fired boiler at Building 2234 adjacent to the site, a diesel emergency generator at Building CS022 approximately 230 feet north of the site, and a diesel emergency generator at Building 2253 approximately 380 feet west of the site (FMMD 2022a, 2022b). Mobile sources of air emissions near the Chisolm Avenue Site include combustion engines in maintenance equipment and vehicles traveling on area roadways (e.g., Chisolm Avenue, Huber Road, Pepper Road).

3.2.1.2 Alternative 2: Ernie Pyle Street Site

No stationary sources of air emissions are located within the Ernie Pyle Street Site. The closest stationary air emissions sources to the Ernie Pyle Street Site include three diesel emergency generators and one natural gas–fired boiler at Building 2600 approximately 0.05 mile north of the site (FMMD 2022a, 2022b). Mobile sources of air emissions near the Ernie Pyle Street Site include internal-combustion engines in maintenance equipment and vehicles traveling on area roadways (e.g., Ernie Pyle Street, Llewellyn Avenue, 9th Street).

3.2.2 Environmental Consequences

Evaluation Criteria

Impacts on air quality were evaluated by comparing the annual net change in emissions from the Proposed Action against the General Conformity Rule *de minimis* thresholds for nonattainment and maintenance pollutants and against the PSD threshold for attainment pollutants. Based on Anne Arundel County's compliance with the NAAQS, the General Conformity Rule is potentially applicable to emissions of VOCs and NO_x (because they are precursors of O_3) and SO_x, and the applicable *de minimis* level threshold for these pollutants is 50 tpy for VOCs and 100 tpy for NO_x and SO_x. For attainment pollutants, the PSD threshold is 250 tpy for CO, PM_{10}, and $PM_{2.5}$ and 25 tpy for lead. The PSD thresholds do not denote a significant impact; however, they do provide a threshold to identify actions that have insignificant impacts on air quality. Any action that results in net emissions below the PSD threshold for an attainment pollutant is considered so insignificant that the action would not cause or contribute to an exceedance of the NAAQS for that pollutant. For the purposes of this analysis, impacts on air quality would be considered significant if the Proposed Action or alternatives were to exceed the General Conformity Rule *de minimis* level or PSD thresholds. Impacts on climate change and GHGs would be considered significant if the Proposed Action or alternatives meaningfully contributed to the potential effects of global climate change.

3.2.2.1 Alternative 1: Chisolm Avenue Site

Construction for Alternative 1 would result in short-term, minor, adverse impacts on air quality. Emissions of criteria pollutants and GHGs would be directly produced from operation of heavy construction equipment, building construction, heavy-duty diesel vehicles hauling supplies and debris to and from the Chisolm Avenue Site, workers commuting daily to and from the Chisholm Avenue Site in their personal vehicles, and ground disturbance. All such emissions would be temporary in nature and produced only during the estimated 2-year construction period, from fiscal year (FY) 2028 through FY 2029 (October 2027 through September 2029). The estimated annual air emissions from construction are shown in **Table 3-4**. Detailed emissions calculations are provided in **Appendix B**. The annual air emissions from construction would not be expected to exceed the *de minimis* level or PSD thresholds; therefore, short-term, adverse impacts on air quality would not be significant.

Table 3-4. Estimated Net Annual Air Emissions from Alternative 1

Year	VOC (tpy)	NO_x (tpy)	CO (tpy)	SO_x (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Lead (tpy)	CO_2e (tpy)
2027 (construction)	0.090	0.639	0.701	0.002	4.719	0.019	<0.001	256.9
2028 (construction)	0.237	1.388	2.042	0.005	0.195	0.046	<0.001	462.0
2029 (construction and operations)	1.281	1.127	1.554	0.004	0.045	0.045	<0.001	418.0
2030 and later (operations)	0.020	0.348	0.290	0.002	0.025	0.025	<0.001	404.4
Maximum	**1.281**	**1.388**	**2.042**	**0.005**	**4.719**	**0.046**	**<0.001**	**462.0**
***de minimis* level or PSD threshold**	**50**	**100**	**250**	**100**	**250**	**250**	**25**	**N/A**
Exceeds threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**N/A**

Key: N/A = not applicable.

The air pollutants with the highest emission potential during the construction period are CO and particulate matter, such as fugitive dust. CO is produced from internal-combustion engines such as those found in gas-powered equipment and generators. Fugitive dust is produced from earth-moving activities and vehicles/equipment traveling over paved and unpaved roads. To minimize fugitive dust emissions and reduce emissions of criteria pollutants during the construction period, best management practices (BMPs)

(e.g., wetting the ground surface, using diesel particulate filters in vehicles and equipment) would be incorporated. BMPs and other environmental control measures could reduce particulate matter emissions from a construction site by approximately 50 percent (USEPA 1985). Emissions from construction would cease once construction is completed.

Alternative 1 would result in long-term, minor, adverse impacts on air quality from operation of the new facility. Air emissions would be directly produced from a new natural gas–fired boiler required to heat the facility and a new natural gas–fueled emergency generator that would be installed at the facility to provide backup power. Long-term, operational air emissions would begin following the construction period, or approximately October 2029, and would continue indefinitely. The estimated annual operational air emissions for Alternative 1 are summarized in **Table 3-4**. The net increase in operational air emissions at FMMD would be less than 0.5 tpy for each criteria pollutant, which does not exceed the *de minimis* level or PSD thresholds. Therefore, a general conformity determination is not required and the net increase in annual emissions would not result in the exceedance of permitting thresholds for FMMD. As such, long-term, adverse impacts from Alternative 1 would not be significant. A Record of Non-Applicability to the General Conformity Rule is provided in **Appendix B**. FMMD would obtain permits to construct for all new stationary sources of air emissions and all new sources would be registered with MDE.

Alternative 1 would not result in a net increase in mobile emissions from vehicular traffic because the approximately 435 personnel who would be relocated to the facility from other areas of FMMD would continue to commute to and from FMMD. Any potential changes in air emissions from longer or shorter commute distances for facility personnel would likely be too insignificant to result in any measurable changes in mobile air emissions.

Climate Change and GHGs. Construction under Alternative 1 would produce a total of 1,035.8 tons (939.7 metric tons) of CO_2e. By comparison, 1,035.8 tons of CO_2e is approximately the GHG footprint of 209 passenger vehicles driven for 1 year or 118 homes' energy use for 1 year (USEPA 2023a). During the highest CO_2e emissions year (i.e., 2028) during construction, approximately 462 tons (419.1 metric tons) of CO_2e would be produced, representing less than 0.01 percent of the annual CO_2e emissions in Anne Arundel County from 2020 and less than 0.0008 percent of the annual CO_2 emissions in Maryland from 2021. As such, air emissions produced during construction for Alternative 1 would not meaningfully contribute to the potential effects of climate change and would not considerably increase the total CO_2e emissions produced by Anne Arundel County or the state. Therefore, construction would result in short-term, negligible, adverse impacts from GHGs.

Operations under Alternative 1 would result in a net increase of CO_2e emissions by 404.4 tpy (366.9 metric tpy), which represents approximately 1 percent of the annual CO_2e emissions at FMMD, less than 0.009 percent of annual CO_2e emissions in Anne Arundel County, and less than 0.0007 percent of annual CO_2 emissions in Maryland. By comparison, 404.4 tons of CO_2e is approximately the GHG footprint of 81.6 passenger vehicles driven for 1 year or 46.2 homes' energy use for 1 year (USEPA 2023a). As such, air emissions produced from operations would not meaningfully contribute to the potential effects of climate change and would not considerably increase the total CO_2e emissions produced by FMMD, Anne Arundel County, or the state. Therefore, long-term, adverse impacts from operational GHGs would be negligible. Operational emissions would continue indefinitely.

Ongoing changes to climate patterns in Maryland are described in **Section 3.2.1**. These climate changes are unlikely to affect the ability to implement Alternative 1. The Chisolm Avenue Site is partially disturbed and is outside of the floodplain; therefore, increased storm intensity, changes to precipitation patterns, rising seas, disruption of natural ecosystems and built infrastructure, and other results from ongoing climate

change would not affect implementation of the Proposed Action. The climate stressors with the greatest potential to affect the Proposed Action are higher temperatures and more frequent heat waves, which can lead to greater air conditioning and utility demands, and has the potential to damage infrastructure.

All elements of the Proposed Action in and of themselves are only indirectly dependent on any of the elements associated with future climate scenarios (e.g., meteorological changes). At this time, no future climate scenario or potential climate stressor would have significant effects on any element of the Proposed Action, nor would the Proposed Action meaningfully contribute to the occurrence of climate change events.

3.2.2.2 Alternative 2: Ernie Pyle Street Site

As with Alternative 1, construction for Alternative 2 would result in short-term (i.e., FY 2028 through FY 2029), minor, adverse impacts on air quality. **Table 3-5** provides the estimated net air emissions from Alternative 2. Air emissions from construction for Alternative 2 would be slightly more than those for Alternative 1 because Alternative 2 includes a greater area of disturbance and more new parking than Alternative 1. As with Alternative 1, the net annual emissions from construction for Alternative 2 would not exceed the *de minimis* level or PSD thresholds. Therefore, a general conformity determination is not required, and short-term, adverse impacts would not be significant. BMPs and other environmental control measures would be implemented to reduce or control air emissions during construction.

Table 3-5. Estimated Net Annual Air Emissions from Alternative 2

Year	VOC (tpy)	NO_x (tpy)	CO (tpy)	SO_x (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Lead (tpy)	CO_2e (tpy)
2027 (construction)	0.099	0.697	0.795	0.002	5.373	0.021	<0.001	274.2
2028 (construction)	0.237	1.388	2.042	0.005	0.195	0.046	<0.001	462.0
2029 (construction and operations)	1.282	1.128	1.554	0.004	0.045	0.045	<0.001	418.6
2030 and later (operations)	0.020	0.348	0.290	0.002	0.025	0.025	<0.001	404.4
Maximum	**1.282**	**1.388**	**2.042**	**0.005**	**5.373**	**0.046**	**<0.001**	**462.0**
***de minimis* level or PSD threshold**	**50**	**100**	**250**	**100**	**250**	**250**	**25**	**N/A**
Exceeds threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**N/A**

Key: N/A = not applicable.

Alternative 2 would result in long-term, minor, adverse impacts on air quality from a new natural gas–fired boiler required to heat the facility and a new natural gas–fueled emergency generator. Operational air emissions would begin following the construction period, or approximately October 2029, and would continue indefinitely. As with Alternative 1, Alternative 2 would not result in a net increase in mobile emissions from vehicular traffic. As shown in **Table 3-5**, the estimated annual operational air emissions for Alternative 2 would be identical to those for Alternative 1. As such, the net increase in operational air emissions at FMMD from Alternative 2 would not exceed the *de minimis* level or PSD thresholds and long-term, adverse impacts on air quality would not be significant. Therefore, a general conformity determination is not required and the net increase in annual emissions would not result in the exceedance of permitting thresholds for FMMD.

Climate Change and GHGs. Construction under Alternative 2 would produce a total of 1,053.7 tons (955.9 metric tons) of CO_2e, which is approximately 1.7 percent higher than the CO_2e emissions that would be produced under Alternative 1. By comparison, 1,053.7 tons of CO_2e is approximately the GHG footprint of 213 passenger vehicles driven for 1 year or 120 homes' energy use for 1 year (USEPA 2023a). Identical to Alternative 1, approximately 462 tons (419.1 metric tons) of CO_2e would be produced during the highest

CO_2e emissions year under Alternative 2 (i.e., 2028) and these CO_2e emissions would represent less than 0.01 percent of the annual CO_2e emissions in Anne Arundel County from 2020 and less than 0.0008 percent of the annual CO_2 emissions in Maryland from 2021. Also identical to Alternative 1, operations under Alternative 2 would result in a net increase of CO_2e emissions by 404.4 tpy (366.9 metric tpy), which represents approximately 1 percent of the annual CO_2e emissions at FMMD, less than 0.009 percent of annual CO_2e emissions in Anne Arundel County, and less than 0.0007 percent of annual CO_2 emissions in Maryland. As such, air emissions produced during construction and operation of the facility under Alternative 2 would not meaningfully contribute to the potential effects of climate change and would not considerably increase the total CO_2e emissions produced by FMMD, Anne Arundel County, or the state. Therefore, short-term, adverse impacts from GHGs during construction and long-term, adverse impacts from operational GHGs would be negligible.

The ongoing changes to climate patterns described in **Section 3.2.1** are unlikely to affect the ability to implement Alternative 2. Similar to the Chisholm Avenue Site, the Ernie Pyle Street Site is partially disturbed and is outside of the floodplain; therefore, no future climate scenario or potential climate stressor would have appreciable effects on Alternative 2.

3.2.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and existing conditions would remain unchanged. Therefore, air quality would remain as described in **Section 3.2.1** and no impacts would occur.

3.2.2.4 Cumulative Impacts

Criteria pollutants and GHG emissions would be produced from all reasonably foreseeable actions identified in **Section 3.0**. The Proposed Action would result in short- and long-term, negligible to minor, adverse impacts on air quality from construction and operations. Reasonably foreseeable demolition and construction actions that coincide with the construction period for the Proposed Action, including the demolition of 34 World War II–era buildings and construction of the U.S. Army Field Band Dispatch Building, DPW BASOPS Complex, and Marine Corps Operations Facility, would produce emissions of criteria pollutants and GHGs. Emissions from reasonably foreseeable construction actions, when combined with emissions from the Proposed Action, would be greater than what was analyzed for the Proposed Action alone, resulting in short-term, minor, adverse, cumulative impacts. BMPs and environmental control measures would be implemented to minimize air emissions from the reasonably foreseeable future actions and reduce the potential for cumulative impacts on air quality. All such occurrences of additive air emissions would be temporary in nature and cease upon completion of the reasonably foreseeable demolition and construction activities. The General Conformity Rule is applied only to individual federal projects; therefore, the additive (i.e., combined) emissions of criteria pollutants from the Proposed Action and the reasonably foreseeable projects would not be subject to a general conformity determination and would not result in exceedance of the *de minimis* or PSD thresholds for the Proposed Action. Because emissions from the Proposed Action would not be considered significant, cumulative impacts on air quality from the Proposed Action, when combined with other reasonably foreseeable actions, would not be significant.

An increase in operational air emissions would occur from new heating systems for new facilities (i.e., U.S. Army Field Band Dispatch Building, DPW BASOPS Complex, and Marine Corps Cyber Operations Facility). A decrease in operational air emissions would occur from the removal of heating systems for the 34 World War II–era buildings that would be demolished. Therefore, long-term, adverse, cumulative impacts from operations under the reasonably foreseeable future actions would be negligible when combined with operations under the Proposed Action. Emissions from the Proposed Action would not be

considered significant for the region and changes in operational air emissions at FMMD would not result in significant, adverse, cumulative impacts on air quality within Anne Arundel County. Ongoing changes to climate patterns in Maryland are described in **Section 3.2.1**. These changes are unlikely to adversely impact construction associated with the reasonably foreseeable actions at FMMD.

3.3 HAZARDOUS AND TOXIC MATERIALS AND SOLID WASTES

Hazardous and Toxic Materials. Hazardous materials are defined by 49 CFR 171.8 as "hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designed as hazardous in the Hazardous Materials Table (49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions in 49 CFR 173." Transportation of hazardous materials is regulated by the U.S. Department of Transportation regulations within 49 CFR 105–180. Special hazards are those substances that might pose a risk to human health and are addressed separately from other hazardous substances. Special hazards include asbestos-containing material, lead-based paint, and polychlorinated biphenyls (PCBs). USEPA is given authority to regulate these industrial chemicals by the Toxic Substances Control Act (15 USC 53). USEPA has established regulations regarding asbestos abatement and worker safety under 40 CFR 763, with additional regulation concerning emissions (40 CFR 61). Whether from lead abatement or other activities, depending on the quantity or concentration, the disposal of lead-based paint waste is potentially regulated by the Resource Conservation and Recovery Act (RCRA) at 40 CFR 260. The disposal of PCBs is addressed in 40 CFR 750 and 761. Because the Proposed Action would not include demolition or renovation of existing facilities and these materials are typically no longer used in federal construction, these special hazards are not discussed further in this EA.

Hazardous Wastes. RCRA defines hazardous waste as wastes or a 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 of, incinerated, treated, or recycled except those exempted under 40 CFR 261.4.

FMMD's DPW Environmental Division is responsible for managing hazardous materials and waste. FMMD operates under a Spill Prevention Control and Countermeasure Plan (SPCCP)/Installation Spill Contingency Plan (ISCP) for all facilities where hazardous materials are stored (FMMD 2022c). The SPCCP/ISCP 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 (2022c). Hazardous wastes are managed in accordance with RCRA, state and local regulations, and DoD policies.

Environmental Contamination. Congress formally established the Defense Environmental Restoration Program (DERP) in 1986 to provide for the cleanup of DoD property at active installations, Base Realignment and Closure installations, and formerly used defense sites throughout the United States and its territories. The three programs under the DERP are the IRP, Military Munitions Response Program (MMRP), and Building Demolition/Debris Removal Program. The IRP requires each installation to identify, investigate, and clean up contaminated sites. The MMRP addresses nonoperational military ranges and other sites that are suspected or known to contain unexploded ordnance, discarded military munitions, or munitions constituents. The Building Demolition/Debris Removal Program involves the demolition and removal of unsafe buildings and structures.

Eligible DERP sites include those contaminated by past defense activities that require cleanup under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and certain corrective actions required by RCRA. Newer non-DERP contaminated sites are remediated under the Compliance-Related Cleanup Program.

Solid Waste. Solid-waste management and recycling at FMMD is guided by the installation's Integrated Solid Waste Management Plan (FMMD 2017). FMMD's solid-waste management goals include reducing the rate of solid-waste generation to meet or exceed DoD and State of Maryland waste-reduction goals and reduce the amount of solid waste disposed of at regional landfills; reusing or recycling elements of the solid-waste stream to the maximum extent possible; managing solid waste in a manner protective of human health and the environment; and complying with all applicable federal, State of Maryland, DoD, and Army solid-waste management regulations and all applicable EOs and Army guidance.

3.3.1 Affected Environment

Hazardous and Toxic Materials. FMMD uses, handles, and stores hazardous materials and petroleum products, which include liquid fuels (e.g., gasoline, diesel); dielectric fluid; kitchen grease; pesticides; petroleum, oils, and lubricants; cleaners; and hydraulic fluids. The use and storage of hazardous materials and petroleum products on FMMD are managed by the FMMD Pollution Prevention Plan and the SPCCP/ISCP (FMMD 2011a, 2022c).

Because of the nature of the sites, common usages of hazardous materials and petroleum products within the project sites may include pesticide applications, and lubricants and fuels for landscaping equipment and maintenance processes. In accordance with DoD Instruction 4150.07, *DoD Pest Management Program*, FMMD minimally uses pesticides. Army Regulation 200-1, *Environmental Protection and Enhancement*, promulgates policies, responsibilities, and procedures to implement the Army Pest Management Program, and FMMD's practices are covered in its Integrated Pest Management Plan (FMMD 2018a).

Hazardous Wastes. FMMD is considered a RCRA Large-Quantity Generator of Hazardous Waste (FMMD 2024b). Hazardous-waste management is outlined in FMMD's Installation Hazardous Waste Management Plan (FMMD 2011b). Those who handle or manage hazardous materials or hazardous waste are trained in accordance with federal, state, local, and Army requirements (FMMD 2022d). Each facility has appointed an emergency management coordinator who is responsible for emergency response actions until relieved by hazardous-materials spill response personnel. As a designated large-quantity generator, FMMD is allowed to accumulate hazardous waste for up to 90 days on site. The installation operates a centralized 90-day hazardous-waste accumulation site located at Building 2250, the Controlled Hazardous Substance Storage Facility (FMMD 2024b). FMMD also has numerous hazardous-waste satellite accumulation points and universal waste accumulation sites around the installation. Typical hazardous waste on the installation includes the result of maintenance of Army equipment and property; expired shelf-life hazardous materials; medical service support activities; and used petroleum, oil, and lubricants.

Environmental Contamination. The Site Management Plan Annual Update for FMMD contains the most up-to-date catalog of all known and potential environmental contamination sites on Fort Meade, and it summarizes the current status and planned activities for each site (FMMD 2023a). The Site Management Plan identifies each site as an area of interest (AOI). AOI sites are organized by funding source and include IRP, MMRP, and Base Realignment and Closure sites. Additional details regarding each AOI site are provided in the various preliminary assessment (PA)/site inspection (SI) reports prepared by geographic area of the installation and site-specific investigation, remedial action, and closeout reports.

Solid Wastes. Construction and demolition project private contractors typically managed by the United States Army Corps of Engineers (USACE) are required to remove and dispose of all construction and

demolition debris at approved off-post facilities. Construction and demolition waste generated by FMMD DPW or military units is disposed of at the contracted landfill. The DPW operations and maintenance contractor is responsible for nonresidential solid-waste collection and for maintaining and cleaning the dumpsters. Several trash trucks are used to collect the waste on Fort Meade. Waste collected from Fort Meade is disposed of at a local contracted sanitary landfill.

3.3.1.1 Alternative 1: Chisolm Avenue Site

The Chisholm Avenue Site is largely undeveloped and vegetated with just a few remaining utility connections and remnant paved surfaces located on the edges. No hazardous materials are currently stored on the Chisolm Avenue Site. The site has been identified as a Category 3 location for hazardous waste, meaning it is known to be contaminated or contamination would likely to be encountered during any development in this area (Zynda 2024).

One AOI overlaps the Chisolm Avenue Site, FGGM-96 (Operable Unit [OU]-46)—Former Motor Pools, Wash Racks, and Buildings. The portion of the AOI that overlaps the site includes the maintenance shop, wash rack, and oil/water separator (OWS) for former Buildings 2227 and 2224, and Building 2234, which currently exists to the northwest of the project site, and stained soils along 3rd Street. Soil staining along 3rd Street was visible by discoloration and was identifiable by an odor noticed during a 2009 trenching and communications duct bank project. Petroleum seepage from a depth of 3 feet was discovered and contaminated soils were removed under an MDE Oil Control Program (Case No. 2011-0418-AA) (Zynda 2024). Constructed in 1941, Building 2227 (Solid Waste Management Unit [SWMU] 147) was used as a vehicle repair shop until the mid-1980s. The wash rack (SWMU 44 and Building 2224) was used to wash vehicles and equipment; it discharged waste wash water to the OWS (SWMU 43), which discharged to the sanitary sewer system. By 1996, Building 2227 was no longer in use, and by 1999 the building, wash rack, and OWS had been demolished and removed. A former gas station was located southwest of Building 2234. As part of the PA/SI, four surface soil samples and four subsurface soil samples were collected and analyzed for VOCs, semi-volatile organic compounds (SVOCs), metals, total petroleum hydrocarbons–diesel-range organics, and total petroleum hydrocarbons–gasoline-range organics; and three groundwater monitoring wells were installed and sampled for VOCs, SVOCs, metals, total petroleum hydrocarbons–diesel-range organics, and total petroleum hydrocarbons–gasoline-range organics. OU-4 also overlaps the Chisolm Avenue Site for potential VOCs in groundwater. Any development within OU-4 may be subject to installation of a vapor intrusion barrier if within 100 feet of a VOC plume maximum contaminant load (MCL) exceedance. In addition to potential VOCs, other contaminants of potential concern at OU-4 include PCBs, pesticides, herbicides, total-petroleum hydrocarbons-diesel-range organics (TPH-DROs), TPH-gasoline range organics (TPH-GROs), polycyclic aromatic hydrocarbons (PAHs), fuel oil, metals, and herbicides. OU-4 spans across multiple FMMD facilities, and media of concern include soil, groundwater, surface water, and soil gas. The current remediation status of OU-4 is occurring on an "operation and maintenance" basis of remedial systems, and associated semi-annual groundwater monitoring is being conducted. It was determined that the soil does not pose a risk at this AOI, but the concentrations of chromium, arsenic, thallium, mercury, cobalt, manganese, and other metals in groundwater cause excess risk. The Final PA/SI Report has been approved, and USEPA approved No Further Action for Building 2234 on April 18, 2016. The 2020 Final Supplemental Site Investigation report recommended a remedial investigation (RI) for this site for CERCLA contaminants (cobalt and manganese) in groundwater for Former Buildings 2227 and 2224. An RI workplan was initiated in 2023 for cobalt in groundwater and is expected to be completed in 2025. The Chisolm Avenue Site has known IRP contamination and is not currently in regulatory concurrence to achieve a no further action status, but it is not anticipated that immediate remediation is necessary. Regulatory concurrence would be dependent upon completion of the ongoing IRP CERCLA RI (FMMD 2023a, Zynda 2024).

3.3.1.2 Alternative 2: Ernie Pyle Street Site

The Ernie Pyle Street Site is also largely undeveloped and vegetated with a pervious parking area and roadways, stormwater infrastructure, and some temporary training equipment storage. The Ernie Pyle Street location does not currently store hazardous materials. Multiple IRP sites have been identified in proximity to the Alternative 2 site. FGGM-95 (OU-45), also known as Site Y, within the Ernie Pyle Street Site is an AOC due to waste observed on the ground surface in 2012. Site Y is a 0.9-acre uncontrolled former dumpsite where demolition debris and soil from unknown sources were placed in approximately 2001. The site is currently an open field and has attained a NFA status. Three IRP sites are associated with FGGM-96 (OU-46) near the Ernie Pyle Street Site. FGGM-96 (OU-46)–Possible Vehicle Service Area A-1943, is east of the Ernie Pyle Street Site and was identified by the presence of staining visible in 1943, 1947, and 1952 aerial photographs. Potential contaminants of concern include VOCs, SVOCs, metals, TPH-DRO, and TPH-GRO. USEPA approved OU-46 AOI for NFA in 2016. FGGM-96 (OU-46)–6th Street and Chisolm Avenue, is southeast of the Ernie Pyle Street Site and is an AOI because of discolored soil with an unusual odor uncovered during trenching for the installation of a duct bank. Contaminants of concern are the same as those identified for OU-46–Possible Vehicle Service Area A-1943. The AOI is currently used as a vacant lot and remedial efforts are currently in place under an ongoing RI. FGGM-96 (OU-46)–Former Motor Pool 10 southwest of the Ernie Pyle Street Site is identified because it was listed as a motor pool in a 1952 land use map and identified in a review of historical aerial photographs showing a service/storage area. Staining was observed in aerial photographs prior to development of Kimbrough Army Community Hospital. Soil and groundwater samples were collected from within former Motor Pool 10 and two groundwater monitoring wells were installed for continued analysis. Soil does not pose a risk at this AOI, but concentrations of cobalt, manganese, and thallium in groundwater cause excess risk at this AOI. An NFA Consensus Letter was received from USEPA in March 2021 that approved NFA status for this site. FGGM-37 (OU-21)–Kimbrough Ambulatory Care Center (Building 2480), formerly known as the Kimbrough Army Community Hospital, has the same soil and groundwater risks as those described for the former Motor Pool 10 area and is also under NFA status. SWMUs 75 & 76 (OU-46) are associated with Building 2501 east of the Ernie Pyle Street Site. Building 2501 was used as an equipment receiving and shipping facility and housed a foam pack machine that used a foam component and a hardener component (polymeric isocyanate). The polymeric isocyanate was stored in drums inside the building and periodically disposed. Contaminants of concern include TPH-DRO, TPH-GRO, VOCs and metals. Remediation status is being determined by the ongoing RI (FMMD 2023a, Zynda 2024).

Two monitoring wells (S77-1 and S77-3) associated with Building 2630are are northeast of the Ernie Pyle Street Site.

3.3.2 Environmental Consequences

Evaluation Criteria

An alternative would be expected to have a significant adverse impact on hazardous materials and wastes and waste management if it had any of the following effects:

- Expose people or substantially increase their risk of exposure to hazardous substances without adequate protection
- Substantially increase the risk of spills or releases of hazardous substances
- Disturb restoration sites or the progress of cleanup activities at those sites so that adverse effects on human health or the environment could result
- Conflict with established land use controls
- Result in noncompliance with applicable federal, state, or local laws and regulations; or with permits related to hazardous and solid materials and waste management

3.3.2.1 Alternative 1: Chisolm Avenue Site

Hazardous and Toxic Materials. Short-term, negligible to minor adverse impacts from the use of hazardous materials and petroleum products could occur from construction activities under Alternative 1. Petroleum products, such as diesel, gasoline, oil, antifreeze, solvents, and hydraulic fluids, would be used in construction vehicles and other heavy equipment. Fuel would also be stored on site for the backup generator. Hazardous materials could be used for minor equipment servicing and repair activities. Should any hazardous materials or petroleum products be released into the environment, the FMMD SPCCP/ISCP would be followed. The quantities of hazardous materials and petroleum products used during construction would be minimal, and their use would be short in duration. Contractors would be responsible for the storage and use of these materials in accordance with federal, state, and local laws and regulations. All hazardous materials and petroleum products would be stored in containers that meet federal, state, and local requirements and handled in accordance with the installation's Stormwater Pollution Prevention Plan (SWPPP) and SPCCP. Secondary containment systems would be used as necessary to prevent or limit accidental spills. Additionally, all construction equipment would be maintained according to the manufacturer's specifications and drip mats would be placed under parked equipment as needed.

Hazardous Wastes. Short-term, negligible to minor, adverse impacts from the generation of hazardous and petroleum wastes accumulation could occur. Construction and demolition would involve the use of hazardous materials and petroleum products, which would result in the generation of hazardous wastes and used petroleum products. Implementation of BMPs and environmental protection measures outlined in the installation's SPCCP/ISCP would reduce the potential for an accidental release of these materials. Additionally, all hazardous and petroleum wastes generated would be handled and disposed of in accordance with the FMMD Hazardous Waste Management Plan and federal, state, and local regulations.

No significant use or generation of hazardous materials or wastes would be expected from INSCOM operations at the facility once it is constructed and occupied, other than fuel storage for the backup generator. Fuel storage would comply with all federal, state, and local regulations and would include secondary containment should a spill occur. The SPCCP/ISCP and SWPPP would be updated to address the new storage. Cleaning supplies and occasional maintenance activities would occur but use of hazardous materials during these activities would be minimized in accordance with the installation's pollution prevention and environmental management practices.

Environmental Contamination. Minor impacts from environmental contamination would be expected from implementation of Alternative 1. The AOI is concerned primarily with metals in groundwater, which are not likely to be disturbed by construction and are not known to be a vapor intrusion hazard. Construction would likely inhibit mobilization of the metals in groundwater similar to a landfill cap. Prior to the start of construction, the construction contractor would coordinate with the FMMD DPW Environmental Division to ensure that ground disturbance is coordinated with ongoing investigation activities. Remediation activities at the site are not expected at this time and would be confirmed pending completion of the RI currently underway at the site (Zynda 2024). FMMD would ensure that necessary consultation and coordination are completed with USEPA and MDE, as required. Contractors would take appropriate groundwater control measures should ground disturbance reach the depth of groundwater, including proper worker protective measures. Petroleum-contaminated soils were removed from the site in 2009 as noted in **Section 3.3.1.1**; residual soils remain in place approximately 2 to 15 feet below grade and would be addressed in accordance with state and local regulations if potential contamination is discovered during construction (Zynda 2024).

The proposed INSCOM facility would not impair the ability to monitor the AOI because any existing groundwater monitoring wells or treatment systems would be protected or relocated during ground-

disturbing activities associated with Alternative 1. Contractors would develop BMPs in accordance with site-specific contamination (e.g., access, digging, groundwater contact restrictions) and would obtain all necessary permits prior to ground disturbance. Proper characterization, handling, and disposition procedures for contaminated groundwater would be followed. Contractors performing ground-disturbing activities could encounter undocumented soil or groundwater contamination. If soil or groundwater that is believed to be contaminated was discovered, the contractor would be required to immediately stop work, report the discovery to the installation, and implement appropriate safety measures. Commencement of field activities would not continue in this area until the issue was investigated and resolved.

No long-term impacts would occur from operations because no ground-disturbing activities would occur and impervious surfaces would be maintained upon completion of construction, and contaminated groundwater would not be used.

Solid Wastes. Short-term, minor, adverse impacts and long-term, negligible, adverse impacts on solid waste would be expected under the Proposed Action. Short-term minor impacts on solid waste would occur primarily from construction debris. The contractor would be required to submit a Waste Management Plan prior to construction per FMMD and Army policy. All waste generated from demolition and construction of the proposed INSCOM facility would be recycled to the maximum extent possible. Any construction debris not able to be recycled would be properly disposed of at a permitted solid-waste acceptance facility. Long-term, negligible, adverse impacts on the solid-waste management system would be expected during the operational phase. Solid-waste generation would be minimal as INSCOM operations already occur elsewhere on the installation and a noticeable increase in solid waste from consolidation of these operations into one facility would not be expected, and therefore, would not overwhelm the existing system.

3.3.2.2 Alternative 2: Ernie Pyle Street Site

Impacts under Alternative 2 would be similar to those discussed under Alternative 1. Minor impacts from environmental contamination could occur under Alternative 2. All of the DERP sites in the vicinity of the project site are designated NFA except one with an ongoing RI; any contamination would be addressed by the RI, or if identified during construction would be handled as discussed under Alternative 1.

3.3.2.3 No Action Alternative

Under the No Action Alternative, the 780th IM would not implement the Proposed Action. Additional quantities of hazardous materials, petroleum products, and hazardous wastes associated with construction and demolitions would not be used, stored, or generated; and the management of hazardous materials, petroleum products, and hazardous wastes would not change. Therefore, no impacts on hazardous and toxic materials, hazardous wastes, and solid wastes would be expected.

3.3.2.4 Cumulative Impacts

The Proposed Action, in combination with construction and operation associated with the other reasonably foreseeable actions on FMMD, would be expected to have short- and long-term, negligible to minor, adverse impacts as a result of use and storage of hazardous materials and petroleum products, as well as the generation of hazardous and solid wastes during construction and operation activities. All hazardous material and petroleum product use and storage would be conducted in accordance with existing installation management plans and all federal, state, and local laws and regulations. Hazardous and petroleum wastes would be contained and disposed of in accordance with procedures already in place at the installation as well as all federal, state, and local laws and regulations. Construction of future development projects in the nearby vicinity to the Proposed Action could result in a moderate increase in solid-waste generation and disposal if construction is conducted within overlapping time frames. An abundance of nearby landfills and use of the installation recycling center would experience an increased amount of materials from reasonably

foreseeable actions that would not be expected to exceed the current regional solid-waste management systems. Solid wastes generated by construction and operations on FMMD would be recycled to the maximum extent possible per FMMD policy.

3.4 NOISE

Noise is defined as unwanted or obnoxious sound that can interfere with normal activities or cause harm to certain receptors. Sound can be measured in decibels (dB), or A-weighted decibels (dBA) when adjusted to human hearing and perception. In general, noise levels decrease by about 6 dB as the distance from a sound source doubles (TRS 2024).

3.4.1 Affected Environment

FMMD does not have an airfield, perform explosives training, or operate specialized industrial equipment that produces substantially louder noise than an urban setting, so the noise environment is relatively quiet.

USEPA determined that exposure to environmental noise of over 70 dBA for extended periods can lead to hearing loss. An average outdoor noise level of 55 dBA is preferred in residential areas, hospitals, and schools to lessen the potential for annoyance and activity interference (USEPA 1974). Average noise levels of 65 dBA or greater are common and acceptable in certain industrial and urban settings. Noise levels from common outdoor sources are listed in **Table 3-6**.

Table 3-6. Common Noise Sources and Sound Levels

Construction Equipment	Noise Level (dBA) at 50 feet
Excavator	85
Bulldozer	85
Front-end loader	80
Dump truck	84
Outdoor	
Quiet residential area	40
Highway traffic	70
Heavy traffic	85

Sources: FWHA 2017, Noise Awareness 2023.

Anne Arundel County's noise ordinances, which follow the state of Maryland's noise regulations, set residential noise limits for daytime (7 a.m. to 10 p.m.) at 65 dBA and nighttime (10 p.m. to 7 a.m.) at 55 dBA (AAC 2023).

Under the Noise Control Act of 1972, the Occupational Safety and Health Administration (OSHA) established workplace standards for noise, stating that constant noise exposure in a workplace must not exceed 90 dBA over an 8-hour period. The highest allowable sound level to which workers can be constantly exposed is 115 dBA, which cannot exceed 15 minutes within an 8-hour period. Employers are also required to provide hearing protection equipment that reduces sound levels to these limits (OSHA 2008).

3.4.1.1 Alternative 1: Chisolm Avenue Site

The Chisolm Avenue Site is located in the southeast corner of the installation away from most buildings. The main source of noise in the environment is traffic from Maryland Routes 32 and 175, which intersect 0.25 mile to the southeast. The building adjacent to the project area is currently vacant, and there are no receptors in the immediate vicinity.

No noise-sensitive receptors are within 0.25 mile of the project area. The closest sensitive receptors are the Kimbrough Ambulatory Care Center on the installation 0.33 mile to the northwest, and the Arrive Odenton South neighborhood approximately 0.44 mile off-post to the northeast.

3.4.1.2 Alternative 2: Ernie Pyle Avenue Site

The Ernie Pyle Avenue Site is located 0.5 mile north of the Chisolm Avenue Site in the southeast corner of the installation. The main source of noise in the environment is traffic from the FMMD Main Gate and Maryland Route 175, which intersect approximately 0.25 mile to the northeast.

The closest noise-sensitive receptors are the Kimbrough Ambulatory Care Center, located approximately 0.25 mile to the southeast, and the Normandy Park Community Center, approximately 0.28 mile to the west.

3.4.2 Environmental Consequences

Evaluation Criteria

Impacts from noise would be considered significant if the Proposed Action would result in gross violations of OSHA noise regulations or Anne Arundel County noise ordinances and otherwise cause harm to receptors.

3.4.2.1 Alternative 1: Chisolm Avenue Site

Construction at the Chisolm Avenue Site would have short-term, minor, adverse impacts on the noise environment. Construction noise would be noticeable in the immediate vicinity of the project area but would be temporary. BMPs would be implemented to decrease construction noise to prevent hearing loss for workers and annoyance to any receptors. These BMPs would include ensuring that all construction vehicles are equipped with proper exhaust mufflers, following the Anne Arundel County noise ordinance levels by time of day, requiring construction workers to wear hearing protection equipment, and constructing noise barriers around the project area. The loudest equipment used during clearing, grading, and construction would produce noise levels at approximately 85 dBA. Combining multiple pieces of equipment raises the sound level by about 3 dBA over the loudest machine, but the 6 dBA reduction for each doubling of distance causes noise levels to attenuate below 65 dBA within 800 feet of the source. Therefore, with the BMPs in place, noise levels would be well below 65 dBA during construction at all sensitive receptors. The transport of construction vehicles, materials, and workers to and from the project area would increase traffic noise in the area, although it would have a negligible impact on the noise environment.

Operation of the proposed building would likely not have any noticeable impacts on the noise environment. The increase in commuter traffic to the 780th Cyber Facility would increase traffic noise in the area, but would not be a substantial change from the current environment. The facility's heating, ventilation, and air conditioning (HVAC) system may produce a barely perceptible sound during operation, but this sound would not be different from the typical noise produced by a building of this size and purpose. The backup generator for the facility would also produce noticeable noise during operation, but use would be infrequent and limited to instances when an electricity outage has occurred, or during testing.

3.4.2.2 Alternative 2: Ernie Pyle Street Site

Construction under the Proposed Action at the Ernie Pyle Street Site would have short-term, minor, adverse impacts on the noise environment. Construction noise would be noticeable in the immediate vicinity of the project area but would be temporary. BMPs would be implemented to decrease construction noise to prevent hearing loss for workers and annoyance to any receptors. The loudest equipment, combined with other equipment, would attenuate to below 65 dBA within 800 feet of the source. Therefore, with these BMPs in place, noise levels would be below 65 dBA during construction at all sensitive receptors. The

transport of construction vehicles, materials, and workers to and from the project area would increase traffic in the area, although it would have a negligible impact on the noise environment.

Operation of the new proposed building would likely not have any noticeable impacts on the noise environment. The increase in commuter traffic to the building would increase traffic noise in the area, but would not be a substantial change from the current environment. The building's HVAC system and backup generator would have similar impacts as Alternative 1.

3.4.2.3 No Action Alterative

Under the No Action Alternative, construction under the Proposed Action would not be implemented, and there would be no changes to the noise environment.

3.4.2.4 Cumulative Impacts

The Proposed Action, combined with reasonably foreseeable actions, would result in short-term, minor, adverse impacts on the noise environment. The proposed cumulative projects would create intermittent construction noise similar to the proposed alternatives, and would likely slightly alter traffic noise upon completion. The proposed demolition project would use heavier equipment that would likely produce more noise than any other project, but would be in shorter intervals and would not exceed county limits or OSHA regulations. No significant cumulative noise impacts would occur.

3.5 VISUAL AESTHETICS

Visual resources and aesthetics are defined as the natural and human-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 that 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 on the area, public awareness of the area, and community concern for the visual resources in the area.

Visual resources and aesthetics also can include viewsheds, defined as the area that is visible from a specific location. Viewsheds include all 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. Viewsheds can contain urbanization, 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.

3.5.1 Affected Environment

According to FMMD's 2020 ADP (U.S. Army 2020), the visual appearance of a military installation is defined not only by its architectural character and built environment, but also by an attractive, organized landscape design. The visual characteristics throughout FMMD are dominated by areas improved with buildings, roadways, parking areas, landscaped grounds, and pockets of forest surrounded by development. FMMD is surrounded by the built environment generally consisting of transportation arteries, Tipton Airport, and the Patuxent Research Refuge. Interior to FMMD is generally built environment consisting of existing buildings including offices, on-post residential areas, barracks, and industrialized areas. Areas of open space exist, segmented by built environment, generally in the northern and southern portions of FMMD. From the exterior of the installation, the interior installation built environment is generally obscured by perimeter tree lines from all directions. The perimeter of FMMD is surrounded by chain-link security fencing.

3.5.1.1 Alternative 1: Chisolm Avenue Site

The 5.3-acre Chisolm Avenue Site encompasses approximately 2 acres of forested land with the remaining undeveloped acreage consisting of shrub vegetation. Predominant features surrounding the proposed Chisolm Avenue Site (shown in **Figure 2-1)** include Building 2234 located to the northwest; roadways (Huber Road, Pepper Street, 3rd Street, Chisolm Avenue) that line the property boundary; and buildings and associated parking lots to the north, east, and south. Parcels east of the proposed site encompass varying acreages of forested land separated by other installation roads. No areas of visual importance such as cultural or historic significance, landforms of aesthetic value, or water surfaces have been identified at or near the Chisolm Avenue Site.

3.5.1.2 Alternative 2: Ernie Pyle Street Site

The proposed 13.8-acre Ernie Pyle Street Site has similar visual characteristics as described for the Alternative 1 site. The Ernie Pyle Street Site is largely forested with the exception of a parking lot approximately 0.23 acre in size on the eastern portion of the site. The Ernie Pyle Street Site is currently vegetated and undeveloped as seen in **Figure 2-2**. Predominant features surrounding the Ernie Pyle Street Site include recreational fields to the south, forested/undeveloped areas to the west, and Buildings 2630 and 600 with associated parking lots to the north and east, respectively. Roadways surrounding the parcel include Ernie Pyle Street, 9th Street, and Llewellyn Avenue. No areas of visual importance such as cultural or historic significance, landforms of aesthetic value, or water surfaces have been identified at or near the Ernie Pyle Street Site.

3.5.2 Environmental Consequences

Evaluation Criteria

The Proposed Action would be considered to have a significant effect to visual impacts if any of the following occurred:

- Long-term alteration of the viewshed that would require mitigation
- Substantial negative alternations to the viewshed of a historic resource
- Major irreversible changes in the overall viewshed of adjacent areas

3.5.2.1 Alternative 1: Chisolm Avenue Site

Short-term, minor, adverse impacts on visual resources would be expected during the construction phase and long-term, negligible to minor, adverse impacts are expected during the operational phase of the Proposed Action. During construction, the presence of construction vehicles, materials, vegetation clearing (including tree removal), and associated disturbances would adversely impact visual resources at the Chisolm Avenue Site to others within a direct view of the area. Once operational, presence of the new facility and increased vehicle traffic, parking, and personnel in the area would be part of the changed landscape and aesthetic at the proposed Chisolm Avenue Site. The proposed 780th Cyber Facility would conform to the general landscaping and planting objectives established in the 2020 ADP (U.S. Army 2020) to blend the aesthetics of the newly built environment with the natural environment with detailed planning features such as shrubs and ground cover, selective tree removal and plantings, and preservation and enhancement of the remaining nearby forested areas. Using these natural landscaping methods and designing the facility to blend into the architectural style of surrounding facilities at FMMD would reduce impacts to negligible to minor for visual resources.

3.5.2.2 Alternative 2: Ernie Pyle Street Site

Environmental consequences and associated impacts regarding visual resources and aesthetics for the Ernie Pyle Street Site would be similar to those described for Alternative 1. An additional impact of the proposed 780th Cyber Facility would be to users of the existing recreational fields to the south of the site. Users of

the recreational fields would experience adverse impacts on visual resources surrounding the area because of development of the proposed facility both in short- and long-term phases.

3.5.2.3 No Action Alternative

Under the No Action Alternative, the construction and operation of the proposed 780th Cyber Facility would not take place; therefore, there would be no change to visual aesthetics and adverse impacts would be expected.

3.5.2.4 Cumulative Impacts

Short- and long-term, minor, adverse impacts on visual resources and aesthetics can be expected from the Proposed Action in combination with reasonably foreseeable future projects at FMMD. Proposed construction of three facilities within a 0.5-mile radius of both proposed alternative site locations would have impacts on visual resources in a short-term phase during proposed construction. Vehicles, materials, and disturbances related to construction would be present to viewers in the nearby vicinity and degrade visual resources and aesthetics of the area. Long-term, adverse impacts are also expected from foreseeable construction efforts and the Proposed Action at FMMD because of the loss of undeveloped forested parcels. Loss of forested land and increased development would impact visual resources long-term. It is anticipated that future development in the area would involve strategies to blend the natural and developed environments to minimize impacts on aesthetics to ensure that the reasonably foreseeable actions would conform to the established visual themes at the installation.

3.6 GEOLOGY, SOILS, AND TOPOGRAPHY

Geological resources consist of the Earth's surface and subsurface materials and their properties. They are defined as geology, soils, topography, and, when applicable, geologic hazards.

Geology. Geology is the study of the Earth's composition and provides information regarding the structure and configuration of surface and subsurface features. This information is derived from field analysis based on observations of the surface and borings to identify subsurface composition.

Soils. Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their ability to support certain applications or uses. In some cases, soil properties must be examined for their compatibility with certain construction activities or types of land use.

Topography. Topography and physiography pertain to the general shape and arrangement of the land surface, including its height, the position of its natural features, and human-made alterations of landforms.

Geologic Hazards. Geologic hazards are defined as natural geologic events that can endanger human lives and threaten property. Examples of geologic hazards in Maryland in the vicinity of FMMD include earthquakes and sinkholes. The 2014 Seismic Hazard Map for Maryland indicates that the region of FMMD and Anne Arundel County have a very low seismic hazard rating of approximately 6 percent g (USGS 2014). No other potential geologic hazards are identified for the project area and, therefore, are not discussed further within this EA.

3.6.1 Affected Environment

Geology. The geologic history of FMMD is characterized by deposition of Atlantic Coastal Plain sediments in lower elevations. Sediments include interbedded, poorly sorted sand and gravel deposits up to 90 feet thick from the Pleistocene epoch and deposits from the Potomac Group during the Cretaceous period,

including the Patapsco Formation (0 to 400 feet thick), Arundel Clay (0 to 100 feet thick), and Patuxent Formation (0 to 250 feet thick) (MGS 2020).

Soils. The United States Department of Agriculture (USDA) Natural Resources and Conservation Service (NRCS) has mapped 41 distinct soil types at FMMD (USDA NRCS 2024). The most common soil series are Downer, Fort Mott, Patapsco, and Sassafras complexes as listed in **Table 3-7** (FMMD 2022d).

Table 3-7. Common FMMD Soil Series Descriptions

Soil Type	Slopes	Description	Depth to Water Table (inches)
Patapsco-Fort Mott-Urban land complex	0%–5%	Somewhat excessively drained soils with very low runoff rates and moderately high to high permeability; not limiting for shallow excavations or building construction	40–72
Patapsco-Fort Mott-Urban land complex	5%–15%	Somewhat excessively drained soils with low runoff rates and moderately high to high permeability; Somewhat limiting for shallow excavations or building construction	40–72
Woodstown sandy loam	0%–2%	Moderately well drained soils with moderate runoff and moderately high to high permeability; Somewhat limiting for shallow excavations or building construction	20–40
Russett-Christiana-Urban land complex	0%–5%	Moderately well drained soils with low runoff rates and moderately low to moderately high permeability; Somewhat to very limiting for shallow excavations or building construction	20–40

Source: USDA NRCS 2024

Topography. The installation and Anne Arundel County lie within the Atlantic Coastal Plain Physiographic Province of Maryland, which is characterized by relatively flat topography that slopes toward the east (MGS 2020). The Atlantic Coastal Plain is characterized by unconsolidated sediments, including gravel, sand, silt, and clay. The highest point on FMMD is 310 feet above mean sea level (amsl) and occurs at the First Army Radio Station Tower, located in the northernmost central portion of the installation. The lowest elevation, less than 100 feet amsl, occurs in the southwestern corner, along the Little Patuxent River. Most of the installation generally slopes gradually to the south and southwest. Slopes at FMMD are generally less than 10 percent grade, with the higher slopes in natural wooded areas (FMMD 2022d).

3.6.1.1 Alternative 1: Chisolm Avenue Site

The Chisolm Avenue Site is classified mainly by Patapsco-Fort Mott-Urban land complex, 0 to 5 percent slopes, and Urban land, which is categorized as soils that have been highly disturbed and retain little of their original properties. Additionally, small slivers of Russett-Christiana-Urban land complex, 0 to 5 percent slopes, are located on the eastern edge and southeastern corner of the site. The Chisolm Avenue Site has an elevation of approximately 170 feet amsl with up to a 0.9 percent slope (MD iMAP 2024).

3.6.1.2 Alternative 2: Ernie Pyle Street Site

The majority of the Alternative 2 site is classified as Patapsco-Fort Mott-Urban land complex, 0 to 5 percent slopes. A small portion of the site in the north is classified as Patapsco-Fort Mott-Urban land complex, 5 to 15 percent slopes. The southern boundary of the site is classified as Woodstown sandy loam, 0 to 2 percent

slopes. The Ernie Pyle Street Site has an elevation of approximately 155 feet amsl with a slope of up to 1.3 percent (MD iMAP 2024).

3.6.2 Environmental Consequences

Evaluation Criteria

Protection of unique geological features and minimization of soil erosion and loss of productivity are considered when evaluating potential effects of a Proposed Action on geological resources. Generally, adverse effects can be avoided or minimized if proper construction techniques, erosion-control measures, and structural engineering design are incorporated into project development.

Impacts on geology and soils would be considered significant if they would alter the lithology, stratigraphy, and geological structures that control groundwater quality, distribution of aquifers and confining beds, and groundwater availability; or substantially change the soil composition, structure, or function within the environment.

3.6.2.1 Alternative 1: Chisolm Avenue Site

Long-term, minor, adverse impacts on soil quality would be expected from implementation of Alternative 1 because of ground disturbance and addition of impervious surfaces.

Short-term, minor, and long-term, minor to moderate, adverse impacts on soil and geology would be expected from implementation of Alternative 1. This alternative would result in disturbances to the soils from excavation, grading, and compaction associated with the construction of the proposed 780th Cyber Facility. Because the site has been previously disturbed, impacts would be minor. Loss of soil structure because of compaction from vehicle and foot traffic could temporarily result in localized changes in drainage patterns. Soil productivity, which is the capacity of the soil to produce vegetative biomass, would be eliminated in those areas covered by new impervious surface. Soil erosion and sediment production would be minimized for all construction activities by following an approved Erosion and Sediment Control Plan (ESCP). Use of stormwater control measures that favor re-infiltration would aid in minimizing the potential for erosion and sediment production as a result of storms or localized flooding. Some areas would be converted to impervious surfaces for parking and infrastructure with proper drainage techniques, and the remaining areas affected by construction would be reseeded, as appropriate.

Most of the soil series in the project sites are generally not limiting to only somewhat limiting for construction activities, and therefore, would be suitable for implementation of Alternative 1. Per COMAR 26.17.1, Erosion and Sediment Control, an ESCP would be required because it involves land clearing, grading, or other earth disturbances to a land area greater than 5,000 ft^2. The 2015 *Maryland Standards and Specifications for Soil Erosion and Sediment Control* would serve as the official guide for erosion and sediment control principles, methods, and practices (MDE 2015). Construction BMPs would also be implemented to minimize soil erosion; therefore, impacts on soils would be minor. BMPs include installing silt fencing and sediment traps, applying water to disturbed soil, and revegetating disturbed areas as soon as possible after disturbance. If soil contamination is encountered during construction and demolition activities, coordination with MDE's Air and Radiation Division would be necessary on whether soil remediation would be required and obtain the appropriate permit, as applicable.

3.6.2.2 Alternative 2: Ernie Pyle Site

Impacts on geological resources under Alternative 2 would be similar to those described for Alternative 1. This site is slightly more vegetated than Alternative 1; therefore, more disturbance to forested areas would be projected to occur. The soil types here are not as disturbed as Alternative 1, and the slope is slightly higher at this site.

3.6.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented, and existing conditions would remain unchanged. Therefore, no impacts on geological resources would be expected.

3.6.2.4 Cumulative Impacts

Short-term, minor, adverse, cumulative impacts on geological resources would be expected from construction-related ground disturbance, grading, and soil compaction associated with the Proposed Action. In combination with other reasonably foreseeable construction and demolition for cumulative projects, these impacts would be slightly greater. Impacts on topography, geology, and soils from construction would be expected to be localized to the site that is being developed. Construction sites that are greater than 5,000 ft^2 require stormwater management plans and ESCPs including BMPs to minimize the potential for impacts off site. Long-term, negligible to minor, adverse, cumulative impacts from the Proposed Action and other actions could occur as a result of the addition of impervious surfaces and associated increases in erosion and sedimentation potential on FMMD.

3.7 WATER RESOURCES AND WATER QUALITY

Surface Water. Surface-water resources generally include water occurring in streams, rivers, ponds, lakes, wetlands, and oceans. Surface water is a valuable resource used for many purposes, including ecology, recreation, agriculture, power generation, and drinking water. To help protect these resources, USEPA established the CWA. The goal of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water." Pollutants regulated under the CWA include "priority" pollutants, including various toxic pollutants; "conventional" pollutants, such as biochemical oxygen demand, total suspended solids, fecal coliform, oil and grease, and pH; and "non-conventional" pollutants, including any pollutant not identified as either conventional or priority. Under Section 404 of the CWA, USEPA and USACE regulate discharge of dredged or fill material into waters of the United States (WOTUS). WOTUS include navigable and non-navigable surface waters, including wetlands as defined under 40 CFR 230.3(s). If a federal permit is required, a 401 Water Quality Certification identifying that the activity authorized by the federal permit complies with all applicable water-quality standards, limitations, and restrictions must be obtained from the state, territory, or tribe where work will be conducted. Under the CWA Section 402, it is illegal to discharge any point and/or nonpoint pollution sources into any surface water without a National Pollutant Discharge Elimination System (NPDES) permit. Stormwater controls for federal projects are also regulated under Section 438 of the Independence and Security Act of 2007, which requires federal agencies to reduce water-quality impacts from federal development that exceeds 5,000 ft^2 to maintain or restore pre-development hydrology. Requirements under this regulation have been incorporated into DoD Unified Facilities Criteria (UFC) 3-210-10, *Low Impact Development*.

Groundwater. Groundwater includes the subsurface hydrologic resources of the physical environment; is a safe and reliable source of water for the general population, especially those in areas of limited precipitation; and is commonly used for potable-water consumption, agricultural, irrigation, and industrial applications. Groundwater also plays an important part in the overall hydrologic cycle and its properties are described in terms of depth to aquifer or water table, water quality, and surrounding geologic composition.

Wetlands. Wetlands are protected under the CWA. Jurisdictional wetlands are 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 328). Important wetland functions include water-quality

improvement, groundwater recharge and discharge, pollution mitigation, stormwater attenuation and storage, sediment detention, and erosion protection.

Floodplains. Floodplains are areas of low-level ground present along rivers, stream channels, or coastal waters that are subject to periodic or infrequent inundation because of rain or melting snow. The risk of flooding typically depends on local topography, the frequency of precipitation events, and the size of the watershed above the floodplain. Flood potential is evaluated by the Federal Emergency Management Agency (FEMA), which defines the 100-year floodplain as an area that has a 1 percent chance of inundation by flood event in each year and the 500-year floodplain as an area that has a 0.2 percent chance of inundation by flood event in each year. EO 11988, *Floodplain Management*, requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development whenever there is a practicable alternative.

3.7.1 Affected Environment

Fort Meade 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. To protect and restore this valuable ecosystem, Maryland joined a consortium of state and federal agencies to establish the Chesapeake Bay Program partnership. To support the Chesapeake Bay Program partnership, FMMD has implemented BMPs and water-resource protection measures that support the guidelines established by the partnership.

Surface Water. FMMD lies primarily within the Little Patuxent River watershed of the Patuxent River Basin with only the northeastern corner of the post present within the Severn River watershed. The Little Patuxent River is approximately 2 miles from FMMD and drains an area of 932 square miles before emptying into the Chesapeake Bay. The Patuxent River is designated a "scenic river" under the Maryland Scenic and Wild Rivers Act of 1968, which mandates the preservation and protection of natural values associated with each designated river, 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 CWA Section 303(d). Impairments include sediments, metals (cadmium), and biological. As total maximum daily loads for these impairments are developed, facilities could be impacted by requirements for reducing loads in the watershed. More than 7 miles of perennial streams including intermittent and ephemeral channels are located within the FMMD boundary. Primary surface waters include Burba Lake, Midway Branch, and its primary tributary, Franklin Branch, both of which are tributaries of the Little Patuxent River (see **Figure 3-3**).

Midway Branch is the primary surface-water drainage feature of FMMD and flows the entire length of the post from north to south, and confluences with the Little Patuxent River southeast of FMMD. Franklin Branch flows onto the post from the northern end, continues through Burba Lake (an 8.2-acre human-made lake), and confluences with Midway Branch. Riparian buffers were incorporated into the FMMD Comprehensive Expansion Management Plan and subsequent Base Realignment and Closure projects to minimize impacts and degradation to water bodies 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 2024a).

Currently, MDE has issued five NPDES permits for Fort Meade activities, including an NPDES wastewater treatment plant (WWTP) State Discharge Permit issued to American Water, and NPDES General Permits for Discharges from State and Federal Small Municipal Separate Storm Sewer Systems (MS4s) and NPDES

General Permits for Discharges from Stormwater Associated with Industrial Activities for Fort Meade. The permits identify effluent guidelines and specific compliance requirements (FMMD 2024a).

Groundwater. The Patuxent, Upper Patapsco, and Lower Patapsco aquifers are present below FMMD with the primary deep groundwater flow direction to the southeast. Shallow groundwater flow direction at Fort Meade is variable. The Middle Patapsco Clay Unit is the confining layer between the Upper and Lower Patapsco Aquifers, and the Arundel Clay Unit is the confining unit between the Lower Patapsco and Patuxent Aquifers. The Upper Patapsco Aquifer is unconfined and considered the water table aquifer, with depth to groundwater identified as shallow (FMMD 2024a).

Various VOCs, pesticides, and explosives have been detected on-installation in the Upper and Lower Patapsco Aquifers (USFWS 2023). The Lower Patapsco Aquifer serves as a primary drinking-water source for areas of Anne Arundel County with known near-surface water-quality impacts associated with trichloroethene, tetrachloroethene, and carbon tetrachloroethene, which have been detected beyond the Fort Meade boundary and into an area beneath the city of Odenton.

The Patuxent Aquifer is the deepest aquifer and primary drinking-water source for Fort Meade. Six on-installation drinking-water production wells screened in the Patuxent Aquifer are located on the installation, and range in depth from 500 to 800 feet below the ground surface. These wells operate under a Water Appropriate and Use Permit from MDE (Permit AA1969G021[7]), which allows an average withdrawal of approximately 3.3 million gallons per day (mgd). Groundwater sampling results for the six drinking-water wells have not indicated water-quality concerns associated with the aquifer (FMMD 2022e).

Wetlands. Fort Meade encompasses approximately 217 acres of wetlands, most of which occur along the Little Patuxent River floodplain in the southwestern portion of Fort Meade and along Midway Branch and Franklin Branch, as depicted in **Figure 3-4.** Most of the wetlands on Fort Meade 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 Fort Meade. Smaller areas of wetland within Fort Meade include palustrine emergent and palustrine scrub shrub (FMMD 2007).

Floodplains. 2012 FEMA floodplain maps for Anne Arundel Unincorporated County Areas identify that 100-and 500-year floodplains are present along Midway Branch and Franklin Branch within the boundary of Fort Meade as identified in **Figure 3-3** (FMMD 2024a).

3.7.1.1 Alternative 1: Chisolm Avenue Site

Based on evaluation of current water-resources inventory maps and site conditions, surface-water features are not present at the site. The nearest surface water is a tributary to Franklin Branch, approximately 250 feet to the northwest; riparian buffers are present approximately 150 feet northwest of the site along Franklin Branch. Groundwater monitoring wells are present on the site as discussed in **Section 3.3**.

Based on evaluation of current wetland inventory maps, wetlands are not present within the Chisolm Avenue Site. According to the United States Fish and Wildlife Service (USFWS) online National Wetlands Inventory Resource Mapper and FMMD delineated wetland resource maps (USFWS 2023), the nearest recorded jurisdictional wetlands are located approximately 0.4 mile northwest of the site along Franklin Branch as identified in **Figure 3-3**. Additionally, Alternative 1 would not be located within a 100-year floodplain (FEMA 2012), as identified on **Figure 3-4**, and no drinking-water or wastewater conveyance systems are present. A small area of common reed (*Phragmites australis*) was noted on the eastern side of the site, near Chisholm Avenue, during a site investigation by USACE biologists 19-20 August 2023, but the soils did not meet the parameters to be classified as hydric per the 1987 Corps Wetland Delineation Manual; therefore, this area was not mapped as a potential wetland.

Figure 3-3. Fort Meade Floodplains

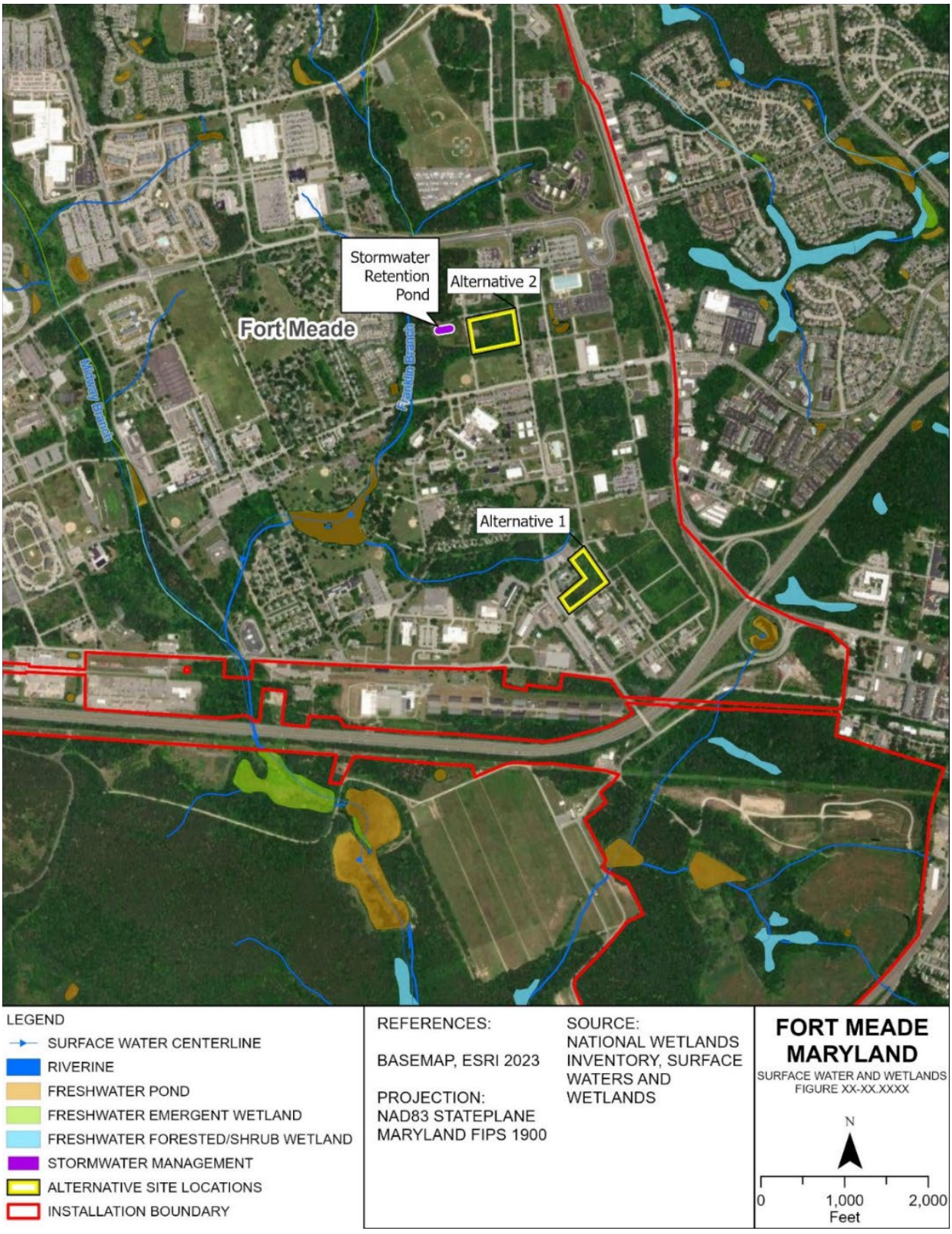


Figure 3-4. Fort Meade Surface Water and Wetlands

3.7.1.2 Alternative 2: Ernie Pyle Street Site

Based on evaluation of current water-resources inventory maps and site conditions, surface-water features are not present. The nearest surface water to the site is Franklin Branch, located approximately 700 feet to the west. Riparian buffers are present adjacent and to the south, approximately 450 feet west of the site along Franklin Branch. There are also no known groundwater monitoring wells on the site.

Alternative 2 would not be located within or directly overlap any floodplains, but the southwest corner of the site would be located east-adjacent to the 100-year floodplain (FEMA 2012) (see **Figure 3-3**).

According to the USFWS online National Wetlands Inventory Resource Mapper (USFWS 2023), the nearest recorded jurisdictional wetlands are located approximately 770 feet northwest of the site along Franklin Branch as identified on **Figure 3-4**.

There are no known groundwater monitoring wells specific to the site and drinking-water or wastewater conveyance systems are currently not present at the site.

3.7.2 Environmental Consequences

Evaluation Criteria

Criteria for evaluating impacts related to water resources associated with the Proposed Action are considerate of water availability, water quality, groundwater recharge, and adherence to applicable regulations. Effects on water resources would be significant if they were to (1) substantially affect water quality or endanger public health by creating or worsening adverse health hazard conditions, (2) threaten or damage unique hydrologic characteristics, or (3) violate established laws or regulations that have been adopted to protect or manage the water resources of an area.

3.7.2.1 Alternative 1: Chisolm Avenue Site

Short-term, negligible, adverse impacts on water resources would be expected at the Chisolm Avenue Site as a result of ground disturbance under the Proposed Action. Construction under the Proposed Action would result in ground disturbance that could temporarily increase stormwater runoff and subsequent erosion and sedimentation on the installation and in the surrounding area. Development and implementation of an ESCP and associated BMPs, such as use of silt fences and construction phasing, could minimize these potential impacts. More than 1 acre of land would be disturbed during construction and demolition activities; therefore, a Notice of Intent under MDE's General Permit for Discharges of Stormwater Associated with Construction Activity, along with development of a project-specific SWPPP, would be required under COMAR 26.08.04.09A (MDE 2023a). Project-specific stormwater management actions and BMPs are necessary under these plans and permits. Proposed activities under this alternative would incorporate BMPs as required under existing FMMD stormwater management plans and stormwater permitting requirements.

Long-term, minor, direct, adverse impacts would be expected on surface water and groundwater because of an increase in stormwater runoff and erosion and sedimentation potential associated with the net increase in impervious surface under the Proposed Action. The increase in impervious surfaces would result in an increase in stormwater runoff that could increase erosion and sedimentation potential in the area and result in a potential increase of pollutant loading into local surface water and groundwater. Impacts would be avoided or minimized to the extent possible through incorporation of environmental site design (ESD) strategies and implementation of proper stormwater management controls, including development of a SWPPP with stormwater BMPs, to prevent flooding, erosion and sedimentation, and pollutant loading into local surface water and groundwater. Additionally, groundwater recharge would be negligibly inhibited because of increase of impervious areas but would not interfere with recharge capacity of nearby undeveloped areas; implementation of ESD strategies and stormwater management controls would

minimize groundwater impacts to the greatest extent feasible. No impacts on wetlands or floodplains would occur as a result of the Proposed Action. Additionally, the projects would be oriented and designed to include ESD and BMPs to avoid potential for indirect effects on these resources.

Construction for Alternative 1 would temporarily disrupt services for the drinking-water and wastewater utility infrastructure at time of connection tie-in, resulting in short-term, negligible to minor and long-term, negligible, adverse impacts. Operation of new facilities would add a limited number of staff and drinking-water consumption and wastewater discharges would be minimal.

3.7.2.2 Alternative 2: Ernie Pyle Street Site

Impacts on water resources under Alternative 2 would be similar to those described for Alternative 1.

3.7.2.3 No Action Alternative

Under the No Action Alternative, the proposed installation development projects would not be implemented, and the existing conditions discussed in **Section 3.7.1** would remain unchanged. Therefore, no new impacts on water resources would be expected.

3.7.2.4 Cumulative Impacts

Development under the Proposed Action, in conjunction with the activities associated with the cumulative projects identified in **Section 3.0**, would result in cumulative long-term, minor to moderate, adverse impacts on water resources. The additional increase in impervious surface at FMMD would contribute to increased stormwater runoff and subsequent increased erosion and sedimentation potential and pollutant loading. Impacts would be minimized to the greatest extent possible with the incorporation of ESD practices and implementation of proper stormwater management controls, including stormwater BMPs, to prevent flooding, erosion and sedimentation, and pollutant loading into local surface water and groundwater.

3.8 COASTAL ZONE MANAGEMENT

The State of Maryland's coastal zone extends outward from the Chesapeake Bay and seaward 3 miles into the Atlantic Ocean. This includes 16 counties and the city of Baltimore. The State of Maryland established the state's Coastal Zone Management Program (CZMP) in 1978 as required by the federal CZMA of 1972 to protect the state's coastal zone during federal actions that may affect land or water use, or natural resources. The CZMP aims to protect significant resources such as wildlife habitats for endangered species, significant wildlife, and wintering and resting areas of migratory birds, and maintain natural buffers along coastal waters to minimize developmental impacts (FMMD 2007). All federal actions and permits must comply with Coastal Zone Consistency requirements, with the decision made through either a State or federal permit.

USEPA established the Chesapeake Bay Critical Area Protection program in 1983, which leads the restoration of the Chesapeake Bay and its tributaries in states in its watershed. This partnership is led by the Maryland Department of Natural Resources (MDNR). The State of Maryland's CZMP incorporates its own Chesapeake Bay protection act, called the Maryland Chesapeake Bay Critical Area Act, to identify and protect land immediately surrounding the Chesapeake Bay and its tributaries.

Federal agencies are required to determine whether their actions are reasonably likely to affect coastal resources, and to consider their goals under the CZMP and submit a consistency determination and supporting materials under Section 307 of the CZMA.

3.8.1 Affected Environment

Fort Meade and Anne Arundel County are located entirely in the coastal zone designated by Maryland's CZMP. Anne Arundel County is designated as a Chesapeake Bay Watershed Area, although it does not

overlap a Critical Area as designated under the Critical Area Act. Fort Meade has approximately 160 acres of jurisdictional wetlands, which are present primarily in the southwestern portion of the installation (FMMD 2007).

3.8.1.1 Alternative 1: Chisolm Avenue Site

The Chisolm Avenue Site is located in the southeast corner of the installation, approximately 0.4 mile southeast of the nearest wetland, in a currently undeveloped and relatively isolated forested area.

3.8.1.2 Alternative 2: Ernie Pyle Street Site

The Ernie Pyle Street Site is located in the southeast corner of the installation, approximately 770 feet east of the nearest wetland, in a currently undeveloped and forested area.

3.8.2 Environmental Consequences

Evaluation Criteria

Impacts on coastal zone resources would be considered significant if permits and mitigation required for construction within coastal zones were not obtained, as part of the federal CZMA, the State of Maryland's CZMP, and Maryland's Chesapeake Bay Critical Area Protection Act.

3.8.2.1 Alternative 1: Chisolm Avenue Site

No impacts on coastal zone resources would be expected. Under the Proposed Action, design and construction would be completed in compliance with the federal CZMA, the State of Maryland's CZMP, and the Critical Area Act. It is expected that implementation of the Proposed Action at the Chisholm Avenue Site would not result in adverse impacts on coastal zone resources. The project area does not contain any surface waters or wetlands, and additional planning to address coastal zone resources would not be required.

3.8.2.2 Alternative 2: Ernie Pyle Street Site

Impacts for coastal zone resources at the Ernie Pyle Street Site would be similar to Alternative 1.

3.8.2.3 No Action Alternative

Under the No Action Alternative, construction under the Proposed Action would not be implemented, permits and mitigation would not be required, and coastal zone resources would not be impacted.

3.8.2.4 Cumulative Impacts

The Proposed Action, combined with reasonably foreseeable actions, would not result in adverse impacts on coastal zone resources. The proposed cumulative projects would also be designed and constructed in compliance with all relevant regulations, with proper permits acquired.

3.9 BIOLOGICAL RESOURCES

Biological resources include native or naturalized flora and fauna and the habitats in which they live. Protected and sensitive biological resources include species listed as threatened, endangered, or proposed under the ESA as designated by USFWS or by state government. Migratory birds are protected under the MBTA, and bald eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA). Sensitive habitats designated by USFWS and sensitive ecological areas designated by other agencies are also considered, including wetlands or plant communities that are unusual or limited in distribution, and important seasonal-use areas for wildlife (e.g., migration routes, breeding areas, or crucial summer or winter habitats).

3.9.1 Affected Environment

Vegetation. Vegetative communities on Fort Meade are intensely urbanized, evolving from traditional mixed hardwood forests to primarily bluegrasses (*Poa* spp.), fescues (*Festuca* spp.), and crabgrasses (*Digitaria* spp.), as well as isolated blocks of forests dominated by oaks (*Quercus* spp.), Virginia pine

(*Pinus virginiana*), and sweetgum (*Liquidambar styraciflua*) (FMMD 2007). Much of Fort Meade is idle ground, and many meadows occupy the land, with species such as Indiangrass (*Sorghastrum nutans*), little bluestem (*Schizachyrium scoparium*), and Virginia wild rye (*Elymus virginicus*) (Environmental Systems Analysis 2014).

Wildlife. The most common wildlife species identified on Fort Meade include the white-tailed deer (*Odocoileus virginianus*), raccoon (*Procyon lotor*), eastern gray squirrel (*Sciurus carolinensis*), gray fox (*Urocyon cinereoargenteus*), opossum (*Didelphimorphia*), continental giant rabbit (*Lepus curpaeums*), mourning dove (*Zenaida Macroura*), red fox (*Vulpes vulpes*), mallard (*Anas platyrhynchos*), green heron (*Butorides virescens*), northern cardinal (*Cardinalis cardinalis*), redwing blackbird (*Agelaius phoeniceus*), domestic cat (*Felis catus*), blue jay (*Cyanocitta cristata*), common grackle (*Quiscalus quiscula*), sparrow (*Passeridae* sp.), finch (*Fringillidae* sp.), Canada goose (*Branta canadensis*), American crow (*Corvus barchyrhynchos*), groundhog (*Marmota monax*), mouse (species unknown), gray catbirds (*Dumetella carolinensis*), and American robin (*Turdus migratorius*) (Environmental Systems Analysis 2014). Other species may be present and are rare or otherwise difficult to observe.

Protected Species. The USFWS Information for Planning and Consultation (IPaC) species lists 1 federally endangered and 1 candidate species and 19 MBTA-protected migratory birds that could be in the project area. Additionally, 20 state-listed species of concern may be present on Fort Meade, listed below in **Table 3-8**.

Table 3-8. Federally Protected Species Potentially Present on Fort Meade

Common Name (Scientific Name)	Protection Status	Habitat	Suitable Habitat in the Project Area(s)?	
			Alt. 1 Site, Chisolm Avenue	Alt. 2 Site, Ernie Pyle Street
Mammals				
Indiana bat (*Myotis sodalis*)	FE	Forested areas, or caves and mines in the winter. Found in Midwest and eastern U.S.	Yes	Yes
Northern long-eared bat (*Myotis septentrionalis*)	FE	Live and dead trees, caves and mines, barns, and sheds. Wherever found in Midwest and parts of East Coast.	Yes	Yes
Tricolored bat *(Perimyotis subflavus*)	FP	Partly open forested areas with large trees. Found in Midwest and eastern U.S.	Yes	Yes
Fish				
Glassy darter *(Etheostoma vitreum)*	SE	Sandy runs of creeks, and small to medium rivers.	No	No
Insects				
Monarch butterfly *(Danaus plexippus)*	FC	Prairies, meadows, grasslands, near obligate milkweed host plant, wherever found.	No	Yes
Birds				

Common Name (Scientific Name)	Protection Status	Habitat	Suitable Habitat in the Project Area(s)?	
			Alt. 1 Site, Chisolm Avenue	Alt. 2 Site, Ernie Pyle Street
Mammals				
Bald eagle (*Haliaeetus leucocephalus*)	BGEPA Vulnerable	Forested areas near large bodies of water. Year-round probability of presence.	No	No
Black-billed cuckoo (*Coccyzus erythropthalmus*)	MBTA BCC Rangewide (CON)	Woodlands and thickets. Present in summer and early autumn.	Yes	Yes
Blue-winged warbler (*Vermivora pinus*)	MBTA BCC-BCR	Shrublands, thickets, forest edges. Present in mid-summer.	Yes	Yes
Bobolink (*Dolichonyx oryzivorus*)	MBTA BCC Rangewide (CON)	Meadows, prairies, bushes. Present in mid-summer.	Yes	Yes
Canada warbler (*Cardellia canadensis*)	MBTA BCC Rangewide (CON)	Forested areas, thickets. Present in summer and early autumn.	Yes	Yes
Cerulean warbler (*Dendroica cerulea*)	MBTA BCC Rangewide (CON)	Forested areas. Present in mid-summer.	Yes	Yes
Chimney swift (*Chaetura pelagica)*	BCC Rangewide (CON)	Hollow trees, caves. Present in late spring, summer, and early autumn.	Yes	Yes
Eastern whip-poor-will (*Antrostomus vociferus*)	BCC Rangewide (CON)	Forested areas. Present in spring and early summer.	Yes	Yes
Golden-crowned kinglet (*Regulus satrapa*)	ST	Coniferous forests.	No	No
Golden eagle (*Aquila chrysaetos*)	Non-BCC Vulnerable	Tundra, grasslands, forested areas, canyonlands. Very low probability of presence.	Yes	Yes
Kentucky warbler (*Oporornis formosus*)	BCC Rangewide (CON)	Forested areas, thickets, edges of swamps and creeks. Present in late spring and summer.	Yes	Yes
King rail (*Rallus elegans*)	BCC Rangewide (CON)	Coastal marshes, prairie swamps, rice fields. Present in late spring.	No	No
Lesser yellowlegs (*Tringa flavipes*)	BCC Rangewide (CON)	Brackish wetlands, mudflats, marshes, flooded fields. Present in spring, late summer, and autumn.	No	No

Common Name (Scientific Name)	Protection Status	Habitat	Suitable Habitat in the Project Area(s)?	
			Alt. 1 Site, Chisolm Avenue	Alt. 2 Site, Ernie Pyle Street
Mammals				
Pectoral sandpiper (*Calidris melanotos*)	BCC Rangewide (CON)	Coastal tundra. Present in spring, late summer, and autumn.	No	No
Prairie warbler (*Dendroica discolor*)	BCC Rangewide (CON)	Grassland, bushes. Present in late spring and summer.	Yes	Yes
Prothonotary warbler (*Protonotaria citrea*)	BCC Rangewide (CON)	Wooded swamps, flooded forests. Present in late spring and summer.	No	No
Red-breasted nuthatch (*Sitta canadensis*)	ST	Coniferous forests, mountains.	No	No
Red-headed woodpecker (*Melanerpes erythrocephalus*)	BCC Rangewide (CON)	Forested areas. Present all year except for early winter and early summer.	Yes	Yes
Rusty blackbird (*Euphagus carolinus*)	BCC-BCR	Flooded woods, marshes, swamps. Present all year except for summer.	No	No
Sharp-shinned hawk (*Accipiter striatus*)	ST/SE	Open woodlands, thickets, forest edges.	Yes	Yes
Spotted sandpiper (*Actitis macularius*)	ST	Lakes, ponds, rivers, streams.	No	No
Willet (*Tringa semipalmata*)	BCC Rangewide (CON)	Marshes, mudflats, wet meadows. Present in early summer.	No	No
Wood thrush *(Hylocichla mustelina*)	BCC Rangewide (CON)	Forested areas. Present in late spring, summer, and early autumn.	Yes	Yes

Source: USFWS 2024a, FMMD 2007, Environmental Systems Analysis 2014, Deeley et al. 2022, VTCMI 2022
Key: BCC = Bird of Conservation Concern; BCR = Bird Conservation Region; CON = continental United States; FC = federal candidate; FE = federal endangered; FP = federal proposed; SAS = state apparently secured; SE = state endangered; ST = state threatened.

Bat surveys conducted between 2016 and 2018 mist-net captured or acoustically detected several protected or vulnerable bat species near the proposed project areas: northern long-eared bat, Indiana bat, tricolored bat, and several Maryland Species of Greatest Conservation Need (SGCN) species such as the big brown bat (*Eptesicus fuscu*), eastern red bat (*Laisurus borealis*), hoary bat (*Laisurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), small-footed bat (*Myotis leibii*), little brown bat (*Myotis lucifugus*), and evening bat (*Nyciteius humeralis*) (Deeley et al. 2022). The state SGCN species tend to shelter in either urban areas or forested areas depending on the species (Backyard Naturalist 2024). Species were not found or netted at any sites on Fort Meade, suggesting a relatively low chance of maternity colony presence. Per USFWS recommendations, Fort Meade considers forest, riparian, and wetland habitats as potential roosting

areas for northern long-eared bats and will continue to monitor activity in the area until the next USFWS bat survey (Deeley et al. 2022).

Wetlands. Fort Meade has approximately 160 acres of jurisdictional wetlands, which occur primarily along the southwestern portion of the installation (FMMD 2007, USFWS 2024b). The nearest wetland areas to the proposed project areas are located in the southeast corner of Fort Meade, northwest of the two site alternatives. See **Section 3.7** for discussions regarding wetlands.

Critical Habitat. No critical habitats are designated on the installation for federally listed rare, threatened, or endangered species on Fort Meade (FMMD 2007, USFWS 2024a).

3.9.1.1 Alternative 1: Chisolm Avenue Site

The 5.3-acre Chisolm Avenue Site encompasses approximately 3.5 acres of forested land (mixed young- and old-growth trees) that follows an L-shape in the southeast corner of Fort Meade. Other vegetation on the parcel consists of medium-length grasses and sparse bushes, which would provide a medium-quality habitat for wildlife and protected bat species observed on the installation. Low bushes and grasses are the dominant vegetation in the central portion of the site, and immature Bradford pear (*Pyrus calleryana*) trees are growing in fairly dense groups on the western and eastern parts of the parcel. Although the area would provide some habitat for birds and bats observed on Fort Meade that typically inhabit forests, approximately 20 percent of the trees on the site appear to be dead or dying. No meadow areas are located on or near the parcel, and although all life stages of the monarch butterfly have been observed throughout the installation, no milkweed plants or other flowering plants occur within the site. The parcel is within proximity to areas surveyed for the presence/absence of bats where the northern long-eared, Indiana, and tricolored bat as well as multiple state bat SGCN were detected. The nearest bat survey area was located approximately 0.4 mile south of the proposed site, and two other nearby bat survey sites were located approximately 0.5 mile south and northwest of the proposed site. The rest of the survey areas are located more than 1 mile away.

3.9.1.2 Alternative 2: Ernie Pyle Street Site

The 6-acre Ernie Pyle Street Site encompasses approximately 2 acres of forested areas. The vegetation consists of low grass and healthy older trees. The parcel's center is mostly grass, and the trees densely line the border of the parcel as they join with a larger forested stand. Several trees have fallen because of weather events. The parcel would provide a medium-quality habitat for wildlife and protected bat species on the installation. Most bat species would likely not occupy the meadow portion of the site, but could use the forested habitat west of the project area. No milkweed plants or other flowering plants occur within the parcel, as most of the vegetation consists of dry grass. The parcel is within proximity to areas surveyed for presence/absence of bats where the northern long-eared, Indiana, and tricolored bat as well as multiple state bat SGCN were detected. The nearest bat survey area was located approximately 0.3 mile to the northwest of the proposed Alternative 2 site. The rest of the bat survey areas are located more than 1 mile away.

3.9.2 Environmental Consequences

Evaluation Criteria

Impacts on biological resources would be considered significant if the Proposed Action directly or indirectly affects listed species or designated critical habitats, jeopardizes the existence of species that are proposed for listing, or adversely modifies proposed critical habitats.

3.9.2.1 Alternative 1: Chisolm Avenue Site

Vegetation. Under the Proposed Action, short- and long-term, minor, adverse impacts on vegetation would occur from site clearing and alteration.

Short-term, minor, adverse impacts would occur from temporary disturbance of vegetation around the project area from heavy equipment traversing the parcel. Soil compaction and trampling of vegetation are likely to occur. Long-term, minor impacts would occur from the permanent removal and conversion of up to 3.5 acres of vegetation and forested habitat to impervious surfaces. Species would continue to be able to use other nearby and suitable forested habitat. The site is not part of the forest management unit located approximately 400 feet to the east (EEE Consulting 2014).

Wildlife. Short- and long-term, minor, adverse impacts on wildlife would occur from construction-related noise, tree removal, and permanent conversion of habitat.

Short-term, minor, adverse impacts (habitat avoidance and displacement) would occur from noise generated from intermittent operation of various types of heavy construction equipment, construction vehicles, and increased human presence. It is anticipated that wildlife in and around the project area would move to suitable habitats in forested areas east of the project area. **Section 3.4** provides a more detailed analysis on expected noise impacts in the area. Wildlife-friendly construction standards would be used in development of the proposed facilities and infrastructure to minimize potential bird-window collisions and nighttime lighting impacts.

Long-term, minor, adverse impacts would occur from site clearing, including the permanent removal and conversion of forested habitat and other vegetation to accommodate the new facility, removing dead trees and suitable vegetation for species like birds and bats.

Protected Species. Short-term, minor, adverse impacts would occur for the MBTA Birds of Conservation Concern (BCCs) potentially present in the project area. In accordance with Integrated Natural Resource Management Plan (INRMP) guidelines and any other specified mitigation measures, the timing and manner of construction activities would be considerate of species potentially present in a manner that would avoid or minimize adverse effects on protected species to the extent feasible. Timing of construction would be chosen to reduce impacts on species that would be most affected by loss of forested or grassy habitat. BMPs would be followed to the extent feasible to minimize harm during displacement, such as avoiding construction during breeding or maternity periods for state-protected and SGCN species, and replanting of trees and native vegetation, as appropriate.

Construction for the project may affect, but is not likely to adversely affect, the northern long-eared, Indiana, and tricolored bats through the presence of construction noise and removal of potentially suitable roosting trees and foraging habitats within and adjacent to the project area. Based on 2018 survey results, anticipated presence of these three bat species within the project area would be very low because the majority of calls during fall, spring, and winter survey efforts were consistently detected at sites located more than 2.5 miles from the project area on Fort Meade. While it is possible for physical impacts resulting in injury and death to occur from felling trees, these impacts would be avoided by following existing species guidelines, and avoiding spring and summer active roosting and nesting season. The northern long-eared, Indiana, and tricolored bats would likely not experience collisions with construction vehicles because of their nocturnal behavior. In accordance with existing guidelines for these species, project activities would avoid tree clearing during known roosting periods. Additionally, FMMD is consulting with the local USFWS Chesapeake Bay Field Office to confirm the potential direct and indirect effects associated with various components of the Proposed Action. The potential exists for roosting and foraging bats, or individuals flying through their home ranges, to be disturbed or displaced by dust, noise, and light associated with demolition, construction, and operation activities. Given the temporary and variable nature of construction activities, these impacts and other behavioral responses to disturbances would be insignificant. All demolition and construction activities would occur more than 0.5 mile from known

hibernacula. Therefore, no direct effects on hibernating northern long-eared, Indiana, or tricolored bats would occur during winter. Measures would also be implemented to minimize potential construction impacts, such as generation of dust.

While little information is available in the literature regarding the specific effect of noise on bat species using echolocation in their search for prey, noise-generating construction activities are expected to be minimal, temporary, and anticipated during the daytime. Therefore, no effects on bat foraging would be expected.

Vegetation clearing for the Proposed Action could result in impacts on the monarch butterfly. Because the butterfly is a candidate species, ESA Section 7 consultation is not required for this species. Although all life stages of the butterfly have been observed throughout the installation, no milkweed plants or known milkweed habitat occurs within the project area. Therefore, impacts on the obligate reproductive and feeding environment for the various life stages of the monarch butterfly would not be expected. Further, planning and design for the construction and operation of the proposed roadways and facilities would consider the habitat requirements for the species and would avoid impacts on milkweed plants if identified within the project area at the time of construction. FMMD would increase monarch butterfly habitat within the project area's revegetated areas and stormwater features to the maximum extent practicable.

FMMD initiated Section 7 informal consultation with USFWS on Month DD, YYYY, regarding the Proposed Action. FMMD recommended to USFWS that implementation of the Proposed Action may affect but is not likely to adversely affect listed bat species, provided that all tree cutting and clearing would be avoided during the spring and summer active roosting and nesting season (see **Appendix A**). If it is determined that more than 1 acre of trees would need to be removed during the active season, the USFWS Chesapeake Bay Field Office would be consulted to evaluate potential effects. No other federally proposed or listed endangered or threatened species protected by the ESA are known to exist within the project area. Should project plans change, or if additional information regarding the distribution of listed or proposed species becomes available, this determination may be reevaluated.

3.9.2.2 Alternative 2: Ernie Pyle Street Site

Impacts on biological resources under Alternative 2 would be similar to those described for Alternative 1, including that operation of construction equipment, tree clearing, and habitat removal for the project may affect, but is not likely to adversely affect the northern long-eared, Indiana, and tricolored bat, along with bat SGCN species and the monarch butterfly. Alternative 2 would implement the same measures to avoid or minimize effects on these resources and protected species within the project area as described under Alternative 1.

3.9.2.3 No Action Alternative

Under the No Action Alternative, both project areas would remain forested and biological resources would remain unchanged.

3.9.2.4 Cumulative Impacts

The Proposed Action, combined with reasonably foreseeable actions (various construction and demolition actions on the installation), would result in short- and long-term, minor to moderate, adverse impacts on biological resources. The proposed cumulative projects would result in similar noise and displacement impacts to those described for the proposed site alternatives in the southeast portion of Fort Meade, causing more displacement of wildlife and protected species in the area. The construction projects would result in similar impacts to the Proposed Action, including permanent removal of trees and portions of forested stands, soil compaction, and loss of habitat. Species would likely relocate to other nearby and suitable habitat. Because construction teams for the Proposed Action and identified cumulative projects would

implement measures to avoid or minimize impacts on wildlife and federally and state-protected species, significant cumulative impacts on biological resources would not occur.

3.10 ENERGY AND UTILITIES

Energy and utilities systems consist of the physical structures and networks that enable a population in a specified area to function. These systems are wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as "urban" or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to the economic growth of an area. The infrastructure components discussed in this section are energy and gas, telecommunications, wastewater, and stormwater.

3.10.1 Affected Environment

Energy and Gas. The Baltimore Gas and Electric Company (BG&E) provides electrical power to FMMD through four distribution substations. The primary source for FMMD is a 110-kilovolt redundant feeder pair from the BG&E Waugh Chapel Power Station along the south and east sides of FMMD along Maryland Route 32. Natural gas is also supplied by BG&E to the Defense Energy Support Center, which in turn provides it to FMMD. Natural gas is supplied via high-pressure (100-pound force per square inch gauge) mains owned by BG&E, to form a loop at FMMD. The installation is currently in the process of transitioning natural-gas connections to electrical connections for heating. Emergency generators, used for backup power supply, are fueled by natural gas (preferred) or diesel fuel.

Telecommunications. The Network Enterprise Center has oversight for the communications system at FMMD. The installation uses fiber-optic cable exclusively (FMMD 2020).

Potable Water. American Water owns and operates the potable-water system at Fort Meade. Water is drawn from six groundwater wells located throughout Fort Meade to American Water's water treatment plant, which is in the southwest quadrant of the cantonment area near the intersection of Mapes and O'Brien Roads. The maximum allowed draw capacity permitted by MDE is 3.3 mgd, or approximately 1,200 million gallons per year (Permit AA1969G021[07], effective June 1, 2012, expires June 1, 2024) (MDE 2012).

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. Wastewater from the gravity sewers and force mains flows to two major pump stations: the Leonard Wood and East Side pump stations. Each station has three pumps, each rated at approximately 1,500 gallons per minute (gpm), at average operating head, thereby providing a total station capacity of 4,500 gpm (9,000 gpm between the two stations). FMMD maintains an NPDES permit (MD0021717; effective August 1, 2020; expires July 31, 2025) for the WWTP (MDE 2020b). The WWTP has a design flow of 12.3 mgd. The average flow of the WWTP is approximately 2.4 mgd.

Stormwater Management. At Fort Meade, stormwater runoff is conveyed to the three primary drainages, with the majority carried by Midway and Franklin Branches. All natural discharge channels discharge into the Little Patuxent River, ultimately draining to the Chesapeake Bay. Stormwater runoff from developed areas at Fort Meade is conveyed through an extensive network of drainage and associated drainage structures, supplemented by swales, ditches, and retention ponds (FMMD 2007). FMMD follows the federal and MDE ESD standards for development and employs stormwater ponds, rain gardens, tree box filters, and replacement of concrete storm drains with grass swales. Stormwater BMPs and technologies have been used across Fort Meade in upland areas to mitigate runoff from impervious surfaces in accordance with its

Stormwater Management Plan (FMMD 2022d). Additionally, FMMD maintains an NPDES permit to facilitate the amount of discharge and certain pollutants to nearby receiving waters.

FMMD conforms to provisions of COMAR 26.17.02, which requires all jurisdictions in Maryland to implement a stormwater management program to control the quality and quantity of stormwater runoff resulting from new development, as nearly as possible, to the predevelopment of runoff characteristics, and to reduce stream channel erosion, pollution, siltation and sedimentation, and local flooding by implementing ESD to the maximum extent practicable and using appropriate structural BMPs only when necessary (MDE 2021).

Additional plans developed for FMMD to assist with stormwater management include the FMMD SPCCP (FMMD 2022c) and Installation Pollution Prevention Program (FMMD 2011a).

3.10.1.1 Alternative 1: Chisolm Avenue Site

The proposed Chisolm Avenue Site is currently void of structures, but has established electrical, potable-water, and wastewater utility lines, and multiple wastewater utility nodes running throughout the parcel (FMMD 2023b). Stormwater at the site is associated with the southernmost stormwater basin and flows south via stormwater conveyance systems toward the Little Patuxent River.

3.10.1.2 Alternative 2: Ernie Pyle Street Site

Similar to the Alternative 1 Chisolm Avenue Site, the Proposed Ernie Pyle Street Site is currently void of any structures, but has established electrical, wastewater, and communication utility line segments and nodes on the parcel (FMMD 2023c).

Existing FMMD stormwater management plans and stormwater permitting requirements include areas associated with the site. Stormwater at the site is associated with the southernmost stormwater basin and stormwater flows to the south via stormwater conveyance systems and ultimately to the Little Patuxent River. An existing stormwater retention pond located to the west of the Alternative 2 site may require modification because of proposed project activities.

3.10.2 Environmental Consequences

Evaluation Criteria

The Proposed Action would result in significant adverse impacts to energy and utilities if one of the following were to occur:

- Exceeds safe annual yield of water or energy supply sources
- Substantially reduces water availability or supply to existing users

3.10.2.1 Alternative 1: Chisolm Avenue Site

Short- and long-term, negligible to minor, adverse and beneficial impacts are expected on energy and utilities under the Proposed Action in both construction and operational phases.

Short-term, negligible, and adverse impacts are expected on utilities located on the proposed Chisolm Avenue parcel and nearby from potential disruptions in service during construction. These disruptions would be minimal and would be avoided to the extent possible. Additional installation and connection of communications utility lines in the parcel would be required for the new facility. Site preparation, including clearing and grading of land and new utility and facility construction activities, would temporarily increase stormwater runoff rates and erosion. Implementation of the installation and project-specific stormwater management and ESCPs would minimize the impacts on stormwater management.

Long-term, negligible to minor, adverse and beneficial impacts on utilities and energy resources are expected. The adverse impact would result from the additional demands on utilities from additional usage and connections required for operation of the proposed 780th Cyber Facility. Increased utility demand to support facility operations would not exceed utility capacities. Beneficial impacts on utilities and energy can be expected from the use of efficient building and site design at the Chisolm Avenue Site location. According to the Fort Meade ADP, new construction would conform to Leadership in Energy and Environmental Design (LEED) neighborhood principles and BMPs (U.S. Army 2020). LEED is a system created by the U.S Green Building Council that rates buildings and neighborhoods on design, construction techniques and materials, and performance criteria to reduce resource consumption, improve indoor air quality, and promote the selection of sustainable sites.

3.10.2.2 Alternative 2: Ernie Pyle Street Site

The environmental consequences at the Alternative 2 Ernie Pyle Street Site would be the same as those described for Alternative 1, except that the site already has existing communications lines.

3.10.2.3 No Action Alternative

Under the No Action Alternative there would be no significant anticipated effect on utilities. No construction activities would be undertaken, and thus no changes in operations or impacts to existing utilities would take place.

3.10.2.4 Cumulative Impacts

The Proposed Action in combination with reasonably foreseeable actions would result in an increased strain on utilities at Fort Meade, particularly stormwater management. It is expected that utility capacities would be increased where required to meet demand. The installation-wide increase in impervious surface cover from anticipated development would also increase demand on the current stormwater management system. Per installation policy, it is anticipated that implementation of BMPs to include natural stormwater management strategies (such as swales and ditches) and adhering to appropriate stormwater management and ESCPs would minimize adverse effects to the extent possible.

3.11 CULTURAL RESOURCES

"Cultural resources" is an umbrella term for many heritage-related resources defined in several federal laws and EOs. These include the NHPA (1966), Archaeological and Historic Preservation Act (1974), American Indian Religious Freedom Act (1978), Archaeological Protection Act (1979), Native American Graves Protection and Repatriation Act (NAGPRA) (1990), and EO 13007, *Indian Sacred Sites*.

The NHPA focuses on cultural resources such as prehistoric and historic sites, buildings and structures, districts, or other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reason. Such resources might provide insight into the cultural practices of previous civilizations, or they might represent a cultural and religious significance to modern groups. Resources found significant under criteria established in the NHPA are considered eligible for listing in the National Register of Historic Places (NRHP). These are termed "historic properties" and are protected under the NHPA. NAGPRA requires consultation with culturally affiliated Native American tribes for the disposition of Native American human remains, burial goods, and cultural items recovered from federally owned or controlled lands. Under Section 106 of the NHPA, federal agencies must take into account the effect of their undertakings on historic properties and allow the Advisory Council on Historic Preservation a reasonable opportunity to comment. Under this process, the federal agency evaluates the NRHP eligibility of resources within a proposed undertaking's Area of Potential Effects (APE) and assesses the possible effects of the proposed undertaking on historic properties in consultation with the State Historical Preservation Office (SHPO) and other parties. The APE is defined

as the geographic area(s) "within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." The APE for the proposed project is defined as the expected area of direct effects from ground disturbance and infrastructure demolition, renovation, and development within the proposed project area and indirect effects such as temporary construction noise and visual effects from changes to the visual landscape. The specific APE for the proposed project comprises both the site for Alternative 1, the Chisolm Avenue Site, encompassing an approximately 5.3-acre area at the northwest corner of 3rd Street and Chisholm Avenue, and the site for Alternative 2, the Ernie Pyle Drive Street Site, encompassing approximately 6.0 acres of a 13.8-acre site at 9th and Ernie Pyle Streets. The historic properties evaluated in this EA were identified previously pursuant to Section 110 of the NHPA, which requires federal agencies to establish programs to inventory and nominate cultural resources under their purview to the NRHP.

3.11.1 Affected Environment

Cultural resources on Fort Meade are detailed in FMMD's Integrated Cultural Resources Management Plan (ICRMP). An update to the installation's 2011 ICRMP was completed in 2018 (FMMD 2018b). The ICRMP offers guidelines and procedures aimed at assisting FMMD in fulfilling its legal obligations concerning historic preservation and cultural-resources management at the installation. Comprehensive Phase I archaeological investigations have been conducted across the entirety of Fort Meade to assess the presence of archaeological resources. Information regarding previous cultural-resources investigations and their results are specified in detail in the ICRMP.

Architectural Resources. FMMD has five historic properties that have been determined as eligible for listing in the NRHP and are subject to the regulatory requirements of the NHPA. The historic architectural properties are the Fort Meade Historic District, three culverts built by German prisoners of war during World War II, and the water treatment plant (Building 8688). The Fort Meade Historic District encompasses 13 contributing buildings that are a mix of barracks and administrative and support buildings in the central portion of FMMD. Nineteen of these buildings evaluated for NRHP eligibility since the last ICRMP update (FMMD 2018b) were determined not eligible by FMMD, and the Maryland Historical Trust (MHT) concurred in 2019. Additionally, 23 buildings are currently undergoing evaluation. None of the historic properties fall within the alternative sites for the Proposed Action at FMMD.

Archaeological Sites and Cemeteries. According to the 2018 ICRMP, FMMD has a total of 33 prehistoric and/or historic archaeological sites, with none currently listed in the NRHP. All these sites underwent evaluations for NRHP eligibility. Out of the evaluated sites, only one, 18AN1240, a prehistoric site, was deemed eligible. Thirty-two sites were found not eligible for NRHP inclusion. The other nine sites are historic cemeteries, which were evaluated in the 2007 ICRMP update and found to be not eligible for inclusion in the NRHP. Because of the presence of buried human remains, these cemeteries are recommended for maintenance and avoidance. None of these sites fall within the alternative sites for the Proposed Action (FMMD 2018b).

Resources of Traditional, Religious, or Cultural Significance to Native American Tribes. While no federally recognized tribes are present in Maryland, seven federally recognized tribes elsewhere in the United States have historical affiliations with the land occupied by Fort Meade (FMMD 2018b). At present, no known traditional cultural properties or Native American sacred sites are known to occur within or near the sites for the Proposed Action or at Fort Meade.

3.11.1.1 Alternative 1: Chisolm Avenue Site

No specific architectural resources, archaeological sites, cemeteries, or resources of traditional, religious, or cultural significance to Native American tribes have been identified at the Chisholm Avenue Site.

3.11.1.2 Alternative 2: Ernie Pyle Street Site

No specific architectural resources, archaeological sites, cemeteries, or resources of traditional, religious, or cultural significance to Native American tribes have been identified at the Ernie Pyle Street Site.

3.11.2 Environmental Consequences

Evaluation Criteria

Adverse effect on cultural resources can include physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the resource's significance; introducing visual or audible elements that are out of character with the property or that alter its setting; neglecting the resource to the extent that it deteriorates or is destroyed; or selling, transferring, or leasing the property out of agency ownership (or control) without adequate legally enforceable restrictions or conditions to ensure preservation of the property's historic significance. Both temporary and long-term project effects on cultural resources were considered and evaluated for their potential effects.

3.11.2.1 Alternative 1: Chisolm Avenue Site

Under Alternative 1, no identified cultural resources are located within or in close proximity to the project area, and adjacent Building 2234 is not historic. The construction of the new facility at the Alternative 1 location would have no adverse effect on historic properties. Letters were sent to Native American tribes informing them of the Proposed Action and no responses have been received (see **Appendix A**).

Excavation and earth-moving activities pose the risk of causing damage to both known and undiscovered archaeological sites that may exist near or beneath the ground surface. In the event of discovering such a site during the execution of the Proposed Action, adherence to standard operating procedures outlined in the installation's ICRMP would be mandatory to comply with the NHPA.

3.11.2.2 Alternative 2: Ernie Pyle Street Site

Similar to Alternative 1, Alternative 2 does not hold any cultural resources within or in close proximity to the project area. Alternative 2 would have no adverse effect on historic properties.

3.11.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented, and existing conditions would remain. No intentional ground disturbance would affect archaeological; architectural; or traditional, religious, or culturally significant resources. Therefore, no impacts on cultural resources would be expected.

3.11.2.4 Cumulative Impacts

Past construction activities both on and off Fort Meade have likely resulted in impacts on archaeological sites and architectural resources, as these areas experienced disturbances from prior development activities. No cumulative impacts would be expected to occur on any previously recognized archaeological or architectural resources in connection with the construction of the Proposed Action or other reasonably foreseeable actions nearby. The Proposed Action does not involve the demolition of any NRHP-eligible buildings, and no adverse effects are anticipated on archaeological sites. Furthermore, there is no knowledge of any traditional cultural properties or Native American sacred sites within the sites for the Proposed Action.

3.12 TRANSPORTATION AND TRAFFIC

3.12.1 Affected Environment

Gate Access. Both the Chisolm Avenue and Ernie Pyle Street Sites are within the eastern portion of Fort Meade. Three access control points (ACPs) provide access from Maryland Route 175 to the eastern portion of Fort Meade : the Rockenbach Road Gate to the northeast, the Reece Road Gate in the east-central portion, and the Mapes/175 Gate to the south. The Mapes/175 Gate is open 24 hours per day, 7 days per week. The

Rockenbach Road Gate is open from 5:30 a.m. to 9:00 p.m. Monday through Friday and also operates as the commercial gate. The Reece Road Gate is currently closed to all traffic to allow for a complete renovation, which is scheduled for completion later in 2024. During the renovation, access to the Reece Road Gate is limited to the Fort Meade Visitor Control Center. Visitors to the installation must exit the installation from the Visitor Control Center and enter the installation through either the Rockenbach Road Gate or the Mapes/175 Gate (U.S. Army 2024).

In 2014 and 2015, traffic data were collected as part of the 2016 *Base-Wide Traffic and Engineering Study* (hereafter, 2016 Traffic Study) (FMMD 2016). The results of the 2016 Traffic Study for morning, evening, and 24-hour traffic volumes for the three gates providing access to the eastern portion of Fort Meade are shown in **Table 3-9**. Existing facilities are generally adequate to handle the traffic volumes entering and exiting the installation; however, short delays may occur when vehicle-processing capacity at the gates is exceeded. The renovation of the Rockenbach Road Gate in 2021, along with the planned completion of the Reece Road Gate renovation in 2024, are expected to alleviate potential congestion and queuing for vehicles accessing Fort Meade.

Table 3-9. Daily Traffic Volume Data for Eastern Fort Meade Access Control Points

ACP	Morning Inbound Volume (percent)	Afternoon Outbound Volume (percent)	24-Hour Inbound Volume (percent)	24-Hour Outbound Volume (percent)
Rockenbach Road Gate	2,440 (27%)	2,895 (26%)	6,318 (27%)	6,348 (24%)
Reece Road Gate	2,706 (30%)	2,982 (27%)	10,302 (44%)	9,931 (38%)
Llewellyn Gate (replaced by Mapes/175 Gate)	1,961 (22%)	1,691 (15%)	2,097 (9%)	1,945 (8%)

Source: FMMD 2016

Roadways. Fort Meade is within a well-developed urban roadway system composed of all levels of roads. Limited-access highways serving Fort Meade include Maryland Route 32 (Patuxent Freeway) to the south, Maryland Route 295 (Baltimore–Washington Parkway) to the north, and Maryland Route 175 (Annapolis Road) to the east and north. Maryland Route 32 connects with Maryland Route 175 to the southeast of Fort Meade and Maryland Route 295 via interchanges, and provides access to Interstate 95, a major north–south highway that runs along the eastern side of the United States. These roads, along with other surrounding roadways, connect the installation to the surrounding communities and cities in all directions, including Washington D.C., which is approximately 27 miles to the southwest, and Baltimore, approximately 21 miles to the northeast. The Maryland Department of Transportation State Highway Administration (MDT SHA) publishes annual average daily traffic (AADT) data for major highways in Maryland. AADT data for the regional roadways surrounding Fort Meade are shown in **Table 3-10**.

Table 3-10. 2022 AADT Data for Regional Roadways near Eastern Fort Meade

Roadway	Cross Section	AADT
Maryland Route 175 between Maryland Route 295 and Reece Road	4-lane undivided	29,163
Maryland Route 175 between Reece Road and Maryland Route 32	2- to 4-lane divided	36,285
Maryland Route 32 between Maryland Route 175 and Mapes Road	4-lane divided	66,433
Maryland Route 295 between Maryland Route 32 and Maryland Route 175	4-lane divided	107,221

Source: MDT SHA 2023

Roadways on the installation can be classified as arterial roadways, which move traffic through the broader installation with minimal access to adjacent properties; collector roadways, which move traffic from arterial roadways to more localized areas; or local roadways, which provide access to adjacent properties and move traffic onto collector and arterial roadways. The primary arterial roadways in the eastern portion of Fort Meade that connect with the rest of the installation include Rockenbach, Mapes, and Reece Roads running in an east–west direction, and Ernie Pyle Street running in a north–south direction. Collector roads include Llewellyn and Rock Avenues running in an east–west direction, and Chamberlain, Cooper, and Chisolm Avenues running in a north–south direction. Local roadways connect these arterial and connector roadways to more specific areas and provide access to installation facilities.

The results of the 2016 Traffic Study for primary intersections near the Proposed Action alternative sites are shown in **Table 3-11**. The data shown in the table represent the peak traffic volume for morning, midday, and afternoon periods in 2014–2015. A level-of-service (LOS) analysis was performed as part of the 2016 Traffic Study that characterized the operational condition for key intersections based on service measures such as speed, travel time, freedom to maneuver, traffic interruptions, delays, and convenience. LOS ranges from LOS A, or best operating conditions, to LOS F, or worst operating conditions. LOS can very throughout the day and may be worse during higher traffic periods. In general, the key intersections within the eastern portion of Fort Meade are adequate for traffic. Congestion and delays nonetheless occur during morning and evening peak hours.

Table 3-11. Peak Daily Traffic Volume Data for Key Fort Meade Intersections

Intersection	Peak Morning Volume	Peak Midday Volume	Peak Evening Volume	LOS
Maryland Route 175 and Llewellyn Avenue (former Llewellyn Avenue Gate)	3,766	2,131	3,903	B–E
Maryland Route 175 and Mapes Road (Mapes/175 Gate)	2,592	N/A	2,903	A–D
Maryland Route 175 and Reece Road (Reece Road Gate)	2,834	2,302	3,953	C–F
Rockenbach Road and Cooper Avenue	1,787	1,015	1,900	B–D
Reece Road and Cooper Avenue	1,185	817	1,431	A–D
Reece Road and MacArthur Road	901	855	1,261	B–F
Reece Road and Rose Street	978	1,136	1,170	A–F
Mapes Road and Rose Street	856	1,071	1,015	A–F
Mapes Road and Cooper Avenue	1,915	1,616	1,934	B–C
Mapes Road and MacArthur Road	1,076	1,284	1,645	B–D
Reece Road and Ernie Pyle Street (East)	1,128	1,515	1,617	A–B
Reece Road and Ernie Pyle Street (West)	933	1,018	1,294	A–E
Mapes Road and Ernie Pyle Street	758	1,063	808	A–D
Ernie Pyle Street and Llewellyn Avenue	993	730	767	A–F

Source: FMMD 2016, MDT SHA 2023

3.12.1.1 Alternative 1: Chisolm Avenue Site

The Chisholm Avenue Site can be accessed on four sides via Chisholm Avenue to the east, 3rd Street to the south, Pepper Road to the west, and Huber Road to the north. No existing roadways or any other transportation infrastructure are located within the site. The closest ACP to the site is the Mapes/175 Gate, approximately 1.2 route miles to the north, and access to the streets that border the site is provided by Mapes Road and Ernie Pyle Street.

A surface parking lot with approximately 118 delineated parking spaces is located north of the site, adjacent to Huber Road to the north. The parking lot connects with both Huber Road and Ernie Pyle Street. Two additional parking lots, with 34 and 30 delineated parking spaces, respectively, are located adjacent to Building 2234.

3.12.1.2 Alternative 2: Ernie Pyle Street Site

The Ernie Pyle Street Site can be accessed on three sides via Ernie Pyle Street to the east, 9th Street to the north, and an unnamed road to the west. No existing roadways are located within the site. The closest ACP to the site is the Mapes/175 Gate, approximately 0.5 route mile to the northeast, and access to the site is provided by Mapes Road and Ernie Pyle Street. The intersection between Ernie Pyle Street and Mapes Road, which is approximately 0.15 mile north of the site, is known to become congested during the evening peak hour, when traffic from the eastern and central portions of Fort Meade travel to exit the installation via Mapes Road.

An access road and surface parking lot with approximately 28 delineated parking spaces is located within the western portion of the Ernie Pyle Street Site. The parking lot is generally used for the recreational baseball field and soccer field to the southwest and south of the site, respectively.

3.12.2 Environmental Consequences

Evaluation Criteria

Analysis of impacts on transportation and traffic considers changes to traffic volumes, and the operational conditions of roadways and intersections. Impacts on transportation could be considered significant if the Proposed Action resulted in an increase in traffic volumes or delays to levels that impair a roadway's handling capacity, degradation of an intersection's LOS from existing conditions to LOS F, or substantial and permanent changes to roadway accessibility.

3.12.2.1 Alternative 1: Chisolm Avenue Site

Alternative 1 would result in short-term, minor, adverse impacts on regional roadways. No construction would occur beyond the Fort Meade perimeter; therefore, impacts on regional roadways would be limited to additional traffic. Additional construction traffic, including daily commutes from construction crews and material hauling, would increase the number of vehicles transiting on regional roadways, such as Maryland Routes 175, 32, and 295. Construction crews would enter Fort Meade through the Mapes/175 Gate and travel approximately 1.2 miles on Mapes Road and Ernie Pyle Street to access the site. Commercial deliveries and heavy construction vehicle traffic would enter Fort Meade through the Rockenbach Road Gate and would travel approximately 3.2 miles on Rockenbach Road, Cooper Avenue, Mapes Road, and Ernie Pyle Street to access the site. Both gates would be accessed via Maryland Route 175 and traffic would likely enter Fort Meade during the peak morning and evening weekday traffic periods. Additional traffic from construction would be minimal when compared with the AADT of regional roadways shown in **Table 3-9**; therefore, impacts on roadway surfaces and functionality would be minimal. To reduce potential delays, construction-related vehicles could travel to the installation during non-peak hour volumes. Construction equipment and many of the required construction vehicles would be kept on site for the duration of construction activities, resulting in relatively few additional trips. Any increases in traffic on regional roadways from construction would cease after the 2-year construction period.

Alternative 1 would result in short-term, minor, adverse impacts on Fort Meade roadways from the construction crews traveling within the installation, delivery of materials to the Chisolm Avenue Site, and removal of debris from the site, which would cause an increase in on-installation traffic. It is estimated that construction traffic would compose a small percentage of the total on-installation traffic when compared with existing conditions and would be localized to Rockenbach Road, Cooper Avenue, Mapes Road, and

Ernie Pyle Street. Following completion of the Reece Road Gate renovation planned for later in 2024, construction crews also could enter the Reece Road Gate and use Reece Road to travel to and from the site. It is not anticipated that construction traffic would affect the LOS of installation intersections; however, the increases in construction traffic on the installation may increase the rate of deterioration for the select roadways used by construction vehicles. The amount of deterioration is in part a function of the materials used to construct the roadway, the amount of vehicular traffic, and the mix of vehicles (trucks versus cars). Although deterioration is expected to varying degrees, it is not possible to estimate the extent of the deterioration because current pavement condition and the existing vehicle mix are unknown. To help rectify potential roadway deterioration, the roadways that would be used for construction could be repaired, overlaid, and reinforced as needed, particularly those in the immediate vicinity of the Chisholm Avenue Site to accommodate the additional traffic prior to the start of construction activities. These routes could also be repaired and overlaid as needed upon completion of construction to restore the pavement condition to pre-construction levels. Many of the heavy construction vehicles would remain within a project site for the duration of construction activities, which would help to minimize impacts on installation roadways.

The roadways network within Fort Meade provides sufficient access for any heavy equipment that may be required for construction; therefore, none of the equipment used to construct the 780th Cyber Facility or transport materials to the Chisholm Avenue Site would require temporary modifications to roadway configurations or traffic patterns. It is not anticipated that construction at the Chisholm Avenue Site would require closures of adjacent roadways, such as Ernie Pyle Street, 3rd Street, Pepper Road, or Huber Road.

Alternative 1 would not require permanent reconfiguration of regional or installation roadways. The 435 personnel would be transferred primarily from other areas within Fort Meade to the new facility, which could affect traffic volumes in localized areas of the facilities they would be relocating from and to, such as on Ernie Pyle Street and Mapes Road. A small number of the 435 personnel would come from outside the installation. Any shift in traffic onto and on the installation during operation of the proposed facility would not be substantial enough to cause any installation roadway to function beyond its capacity; therefore, long-term impacts on transportation under Alternative 1 would be negligible. The 118-space and 3-space parking lots near the site would be used for facility personnel. A parking lot with approximately 156 parking spaces would be constructed at the site, which would increase the total parking spaces available to the site to 308 spaces. Total parking would accommodate approximately 71 percent of the facility's personnel, which would meet the requirement to provide parking for 60 percent of the total occupants of the facility.

3.12.2.2 Alternative 2: Ernie Pyle Street Site

Impacts under Alternative 2 would be similar to the impacts described for Alternative 1. Short-term, minor, adverse impacts on regional roadways would occur from additional traffic from construction transiting on regional roadways, such as Maryland Routes 175, 32, and 295. Similar to Alternative 1, construction crews would enter Fort Meade through the Mapes/175 Gate and travel approximately 0.5 mile on Mapes Road and Ernie Pyle Street to access the site. Commercial deliveries and heavy construction vehicle traffic would enter Fort Meade through the Rockenbach Road Gate and would travel approximately 2.7 miles on Rockenbach Road, Cooper Avenue, Mapes Road, and Ernie Pyle Street to access the site.

Alternative 2 would result in short-term, minor, adverse impacts on Fort Meade roadways from the construction crews traveling within the installation, delivery of materials to the Ernie Pyle Street Site, and removal of debris from the site, which would cause an increase in on-installation traffic. Identical to Alternative 1, construction traffic would compose a small percentage of the total on-installation traffic when compared with existing conditions and would be localized to Rockenbach Road, Cooper Avenue, Mapes Road, and Ernie Pyle Street. Because of the proximity of the Ernie Pyle Street Site and the Mapes/175 Gate,

construction traffic would introduce additional vehicles at the intersection of Ernie Pyle Street and Mapes Road, which is known to become congested during the evening peak hour, and may cause additional congestion beyond existing conditions. As described for Alternative 1, additional traffic from construction would be minimal and any increases in traffic on regional roadways from construction would cease after the 2-year construction period. In addition, following completion of the Reece Road Gate renovation planned for later in 2024, construction crews could use the Reece Road Gate to avoid additional congestion. As with Alternative 1, it is not anticipated that construction traffic would affect the LOS of installation intersections or require modification to installation roadways, and any potential degradation of installation roadways would be minimized or addressed as appropriate. Construction at the Ernie Pyle Street Site would not require closures of adjacent roadways, such as Ernie Pyle Street, 9th Street, or the unnamed roadway to the west of the site.

As with Alternative 1, Alternative 2 would not require permanent reconfiguration of regional or installation roadways. Therefore, traffic volumes to and from the installation during operation of the new facility would not appreciably change. The 435 personnel would be transferred primarily from other areas of the installation to the new facility, which could affect traffic volumes in the localized area, such as on Ernie Pyle Street and Mapes Road. Any shift in traffic onto and on the installation during operation of the proposed facility would not be substantial enough to cause any installation roadway to function beyond its capacity; therefore, long-term impacts on transportation under Alternative 2 would be negligible. In addition, the 780th Cyber Facility would become operational following the renovation of the Reece Road Gate, which would alleviate congestion at the Ernie Pyle Street–Mapes Road intersection experienced during the peak evening hour, and personnel transferred to the new facility likely would not experience such congestion while exiting the installation through the Mapes/175 Gate. A parking lot with approximately 275 parking spaces would be constructed at the site, which would accommodate approximately 63 percent of the facility's personnel and would meet the requirement to provide parking for 60 percent of the total occupants of the facility at this location.

3.12.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and existing conditions would remain unchanged. Therefore, transportation and traffic would remain as described in **Section 3.12.1** and no impacts would occur.

3.12.2.4 Cumulative Impacts

Construction traffic associated with reasonably foreseeable future actions within the eastern portion of Fort Meade and near the Chisholm Avenue and Ernie Pyle Street Sites, such as INSCOM occupation of currently vacant Building 2234 adjacent to the Chisholm Avenue Site, the construction of the U.S. Army Field Band Dispatch Building, DPW BASOPS Complex, and Marine Corps Cyber Operations Facility (which would occur within 0.05 and 0.15 mile east of the Chisholm Avenue Site), and demolition of 34 World War II–era buildings, when combined with the Proposed Action, would result in increased vehicle traffic on regional roadways, installation roadways, and at installation gates beyond what is estimated for the Proposed Action. Reasonably foreseeable construction would likely be phased to avoid overlapping construction periods with the Proposed Action, where possible. Reasonably foreseeable projects that require additional permanent personnel to be stationed at Fort Meade would increase daily commuter traffic accessing installation gates and overall traffic volumes on the installation. Any additive increases in temporary construction traffic or permanent personnel traffic could increase the rate of roadway deterioration, degrade roadway LOS, or reduce accessibility and efficiency of roadway networks, which would result in long-term, minor, adverse, cumulative impacts on transportation. Building 2234 adjacent to the Chisolm Avenue Site (Alternative 1) would accommodate up to 155 INSCOM personnel (FMMD

2023d). Building 2234 combined with the 780th Cyber Facility would accommodate up to 590 personnel; however, a combined total of 338 parking spaces would be available, which would be less than the 60 percent parking requirement at 57 percent. Inadequate parking availability may result in long-term, moderate, adverse, cumulative impacts from Alternative 1 when combined with the reasonably foreseeable future action to move INSCOM to Building 2234.

3.13 SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND PROTECTION OF CHILDREN

Socioeconomics. Socioeconomics encompasses economic and social elements such as population levels and economic activity. Several factors can be used as indicators of economic conditions for a geographic area, such as demographics, median household income, unemployment rates, percentage of families living below the poverty level, and employment.

Environmental Justice. EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, pertains to environmental-justice issues and relates to various socioeconomic groups and the disproportionate effects that could be imposed on them. This EO requires that federal agencies' actions substantially affecting human health or the environment do not exclude persons, deny persons benefits, or subject persons to discrimination because of their race, color, or national origin.

EO 14096, *Revitalizing Our Nation's Commitment to Environmental Justice for All*, affirms that environmental justice is central to the implementation of civil rights and environmental laws, and directs agencies to consider measures to address and prevent disproportionate and adverse impacts on communities with environmental-justice concerns, including the cumulative impacts on pollution and other burdens such as climate change.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks,* states that each federal agency "(a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks."

Considerations of concern related to environmental justice and protection of children include race, ethnicity, and the poverty status of populations in the Proposed Action's vicinity. Such information aids in evaluating whether a Proposed Action would render vulnerable any of the groups targeted for protection in EOs 12898, 14096, and 13045. Further, for purposes of this EA, minority and low-income populations are defined as follows:

- **Minority population:** Minority populations are defined as members of the following population groups: Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, multi-race that includes one of the aforementioned races; and Hispanic or Latino (CEQ 1997). The United States Census Bureau (USCB) considers race and Hispanic or Latino origin (ethnicity) as two separate concepts, and these data are recorded separately.
- **Low-income population:** Low-income populations are defined as individuals and households whose income is below the federal poverty threshold based on income data collected in the 2016–2020 American Community Survey.

Additionally, children are defined as those under the age of 18, while elderly citizens are defined as those above the age of 65. Larger populations of children or elderly within an area that may be affected by a

proposed action is an indication that higher proportions of people are within the area who would be more vulnerable to environmental stressors.

3.13.1 Affected Environment

FMMD is home to more than 115 government agencies and all six branches of the military service: Army, Navy, Air Force, Space Force, Marines, and Coast Guard. The installation supports more than 60,000 military and civilian personnel, making it Maryland's largest employer (FMMD 2020). Fort Meade creates or supports 125,729 jobs, earning an estimated $9.2 billion in employee compensation (Fort Meade Alliance 2022). The installation's close proximity to both the Baltimore, Maryland, and Washington, D.C., metropolitan areas allows workers to commute from a large number of communities with varied socioeconomic, racial, and ethnic characteristics.

The USCB collects demographics, economic, and population data across the nation. The project sites on Fort Meade are within Census Block Group 240037406032. Data from this Census Block Group are used to assess impacts to socioeconomics and environmental justice for the Proposed Action. Census Tract 7406.03, which encompasses Census Block Group 240037406032, is used where Census Block Group-level data are not available. Reference communities include Anne Arundel County, which comprises the Census Block Groups, and the state of Maryland.

3.13.1.1 Alternative 1: Chisolm Avenue Site

Demographics. Table 3-12 provides the 2010 and 2020 population estimates from the USCB (USCB 2010, USCB 2020a). Census Block Group 240037406032, which encompasses most of FMMD, experienced population growth between 2010 and 2020, as did the reference communities.

Table 3-12. Population Summary for 2010 and 2020

Location	2010 Population	2020 Population Estimate	Percent Change (2010 to 2020)
Census Block Group			
240037406032[a]	867	3,245	274.0
Reference Communities			
Anne Arundel County	537,656	575,421	7.0
State of Maryland	5,773,552	6,037,624	4.6

Source: USCB 2010, USCB 2020a

Note: Redistricting between the 2010 and 2020 census changed the names and areas encompassed by Census Block Groups in Anne Arundel County.

[a] Census Block Group 240037406032 in 2020 encompassed most of Fort Meade, which was largely covered by the same Census Block Group in 2010. However, in 2010, some of the installation was also encompassed by Census Block Group 240037406031 instead. The remainder of Census Block Group 240037406031 in 2020 is the same as it was in 2010, encompassing the Patuxent Research Refuge and Tipton Airport. Therefore, for accuracy, the census data for the 2010 Census Block Groups 240037406032 and 240037406031 were combined to compare to the 2020 census data for Census Block Group 240037406032.

Employment. Employment characteristics are detailed in **Table 3-13**. The primary employment industry in the reference communities is the educational, health, and social service industry, while the primary employment industry for Census Tract 7406.03 is the armed forces (USCB 2020b). The percentage of people employed in the construction industry in Census Tract 7406.03 is approximately 2 percent, and around 7 percent in both Anne Arundel County and the State of Maryland (USCB 2020b).

Table 3-13. American Community Survey 5-Year Estimates for Employment Sectors by Industry (2016–2020)

Employment Sector	Census Tract 7406.03	Reference Communities	
		Anne Arundel County	State of Maryland
Percentage of persons employed in the armed forces	65.0	3.0	0.7
Agriculture, forestry, fishing and hunting, and mining (percent)	0	0.3	0.5
Construction (percent)	1.8	7.1	7.1
Manufacturing (percent)	0.1	4.9	4.5
Wholesale trade (percent)	0	2.5	1.7
Retail trade (percent)	1.4	9.9	9.3
Transportation and warehousing, and utilities (percent)	0.75	4.5	4.8
Information (percent)	1.0	1.8	1.9
Finance, insurance, real estate, and rental and leasing (percent)	0.8	5.9	6.1
Professional, scientific, management, administrative, and waste management services (percent)	6.1	16.4	15.8
Educational, health, and social service (percent)	4.2	20.6	23.7
Arts, entertainment, recreation, accommodation, and food services (percent)	4.5	8.1	8.1
Other services (except public administration) (percent)	0.3	5.2	5.4
Public administration(percent)	10.0	12.7	10.9

Source: USCB 2020b

Environmental Justice. Minority, low-income, child, and elderly populations are characterized in **Table 3-14** (USCB 2020c, 2020d, 2020e, 2020f). Census Block Group 240037406032, containing the project sites on Fort Meade, was evaluated for minority and low-income populations and compared to the reference communities. Census Block Group 240037406032 has a minority population of approximately 34 percent of the total population, which is lower than that of the State of Maryland (46 percent), but higher than that of Anne Arundel County (29 percent) (USCB 2020c). Census Block Group 240037406032 has a higher Hispanic and Latino population than that of both reference communities (USCB 2020d). Census Block Group 240037406032 has a higher percentage of families below the poverty line than the reference communities at approximately 7 percent, and a median household income that is lower than that of Anne Arundel County, but higher than that of the State of Maryland (USCB 2020e, 2020f). Census Block Group 240037406032 contains mostly on-installation populations, consisting of personnel and their dependents, and a few outlying residences and businesses in Odenton Township to the south. The Climate and Economic Justice Screening Tool does not identify the project areas as encompassing disadvantaged communities (CEJST 2023).

Census Block Group 240037406032 has a child population lower than that of the reference communities and no elderly population (USCB 2020g).

Table 3-14. Race, Ethnicity, and Poverty Characteristics 2020

Race and Ethnicity	Census Block Group 240037406032	Reference Communities	
		Anne Arundel County	State of Maryland
Total population	3,245	575,421	6,037,624
White (percent)	66.3	71.0	54.2
Black or African American (percent)	16.6	16.7	29.9
American Indian or Alaska Native (percent)	0.7	0.2	0.3
Asian (percent)	4.8	3.8	6.4
Native Hawaiian and Other Pacific Islander (percent)	0	0	0
Other Race (percent)	1.0	2.9	4.7
Two or More Races (percent)	10.6	5.3	4.5
Hispanic or Latino (percent)	12.3	8.0	10.3
Families below federal poverty threshold (percent)	7.1	3.8	5.9
Median household income	$97,378	$103,225	$87,063
Child (under age 18; percent)	15.0	22.3	22.2
Elderly (over age 64; percent)	0	14.8	15.4

Source: USCB 2020c, 2020d, 2020e, 2020f, 2020g

3.13.1.2 Alternative 2: Ernie Pyle Street Site

The affected environment for Alternative 2 is the same as Alternative 1.

3.13.2 Environmental Consequences

Evaluation Criteria

Socioeconomics. Significance of impacts for socioeconomics varies depending on the context of a Proposed Action. The significance of socioeconomic impacts is assessed in terms of whether direct impacts on the local economy and related impacts on other socioeconomic resources (e.g., income, employment) are deemed substantial.

Environmental Justice. Race, ethnicity, and poverty data were examined for Census Block Group 240037406032 and compared to Anne Arundel County and the State of Maryland as reference communities to determine if a minority or low-income population could be disproportionately affected by the Proposed Action.

3.13.2.1 Alternative 1: Chisolm Avenue Site

Socioeconomics. Short-term, negligible, beneficial impacts on socioeconomics would be expected as a result of the Proposed Action. Nearly all the approximately 435 personnel that the facility would accommodate are currently employed on Fort Meade. Because very limited population change is associated with Alternative 1, the number of personnel at the installation or in the surrounding area would not noticeably increase. Construction workers would likely already be coming from jurisdictions around Fort Meade, and they would not be expected to have an impact on socioeconomics, including demographics or employment. Beneficial impacts would result from increased construction spending, benefiting the local economy.

Environmental Justice. No impacts on environmental justice would be expected from implementation of the Proposed Action because Alternative 1 would occur entirely within the installation boundary in an already developed area, characterized mainly by maintenance and training facilities, with no nearby residential neighborhoods that would be affected by construction and operations. Additionally, construction and operations would not occur in areas where children would be anticipated to gather, such as schools, parks, or churches. Therefore, no disproportionate impacts on minority, low-income, child, or elderly populations would be expected.

3.13.2.2 Alternative 2: Ernie Pyle Street Site

Short-term, negligible, beneficial and adverse impacts would be expected as a result of Alternative 2. Beneficial impacts on socioeconomics and no impacts on environmental justice under Alternative 2 would be similar to those described for Alternative 1. During peak afternoon hours, the Alternative 2 site is located next to a known traffic congestion area that runs along Ernie Pyle Street. Construction could cause short-term, negligible, adverse impacts on emergency response time because of construction-related traffic. See **Section 3.12** for more information on traffic-related impacts.

3.13.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented, and existing conditions would remain unchanged. Therefore, no impacts on socioeconomics and environmental justice would be expected.

3.12.2.4 Cumulative Impacts

Short-term, minor to moderate, beneficial and minor, adverse, cumulative effects on socioeconomics would be expected from implementing the Proposed Action when combined with the other reasonably foreseeable actions, identified in **Section 3.0**. Short-term, beneficial impacts on the local economy are expected cumulative impacts because of increased construction labor force employment and expenditures for construction workers' wages and taxes, construction materials, and purchase of other goods and services. Short-term cumulative impacts on law enforcement and emergency service response capability would be expected during periods of increased construction-related traffic and congestion. The Proposed Action and other reasonably foreseeable actions are not expected to disproportionately affect minority or low-income populations, so no cumulative impacts on environmental justice are anticipated.

4.0 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

As described in **Section 3.0** 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.

Minor or negligible, adverse impacts caused by construction of the Proposed Action would be temporary, occurring during the approximately 2-year construction phase, and would be limited in extent to the Proposed Action site.

Beneficial impacts caused by operating the Proposed Action would be permanent. The Proposed Action would provide a consolidated, secure building to house the 780th MI and subordinate units.

Table 4-1 summarizes the potential impacts of the Proposed Action and the No Action Alternative. The summary is based on information discussed in detail in **Section 3.0** of this EA and includes a concise definition of the issues addressed and the potential environmental impacts associated with each phase of the Proposed Action and its potential cumulative impacts.

Table 4-1. Summary of Environmental Consequences

Resource Area	Construction	Operation	Cumulative Impacts	No Action
Land use	No impacts would occur on land use in a short-term phase.	Long-term, negligible, adverse and beneficial impacts because of the development of forested areas and conformity to land use planning regulations.	Long-term, minor adverse and beneficial impacts expected from the Proposed Action in combination with the listed reasonably foreseeable actions are expected.	No impact on land use.
Air quality	Short-term, minor, adverse impacts on air quality because of the presence and operation of construction equipment, use of machinery for hauling/transportation of supplies and additional personal vehicles. GHGs would also be generated during construction.	Long-term, minor, adverse impacts on air quality because of sustained air emissions and increased continuous GHG production.	Short- and long-term, negligible to minor, adverse impacts expected from the Proposed Action in combination with the listed reasonably foreseeable actions are expected.	No impact on air quality.
Hazardous and toxic materials and solid wastes	Short-term, negligible to minor, adverse impacts from the use of hazardous materials and petroleum products, as well as the	Long-term, negligible, adverse impacts because of solid-waste generation.	Short- and long-term, negligible to minor, adverse impacts from the Proposed	No impact on hazardous and toxic materials and solid wastes.

Resource Area	Construction	Operation	Cumulative Impacts	No Action
	generation of hazardous waste.		Action in combination with the listed reasonably foreseeable actions are expected.	
Noise	Short-term, minor, adverse impacts because of construction and the use of machinery/ equipment associated with construction.	No long-term impacts on noise are expected.	Short-term, minor, adverse impacts from the Proposed Action in combination with the listed reasonably foreseeable actions are expected.	No impact on noise.
Visual aesthetics	Short-term, minor, adverse impacts because of vegetation removal, presence of construction vehicles and materials, and associated disturbances.	Long-term, negligible to minor, adverse impacts because of an increase in vehicle traffic, parking, and additional personnel in the area.	Short- and long-term, minor, adverse impacts from the Proposed Action in combination with the listed reasonably foreseeable actions are expected.	No impact on visual aesthetics.
Geology, soils, and topography	Short-term, minor, adverse impacts because of clearing the construction site and disturbance of soils.	Long-term, minor, adverse impacts on soils because of ground disturbance and an increase in impervious surface cover.	Short-term, minor, adverse impacts from the Proposed Action in combination with the listed reasonably foreseeable actions are expected.	No impact on geology, soils, and topography.
Water resources and water quality	Short-term, negligible, adverse impacts because of effects of ground disturbance.	Long-term, minor, direct, adverse impacts expected because of an increase in stormwater runoff and associated erosion.	Long-term, minor to moderate, adverse impacts from the Proposed Action in combination with the listed reasonably foreseeable actions are expected.	No impact on water resources and water quality.

Resource Area	Construction	Operation	Cumulative Impacts	No Action
Coastal zone management	No impact to coastal zone management is expected during construction.	No impact to coastal zone management is expected during operation.	No change in impact findings.	No impact on coastal zone management.
Biological resources	Short-term, minor, adverse impacts on vegetation because of site clearing and alterations. Short-term, minor, adverse impacts on wildlife and protected species because of the loss of loss/permanent conversion of habitat, construction-related noise and tree removal.	Long-term, minor, adverse impacts on vegetation because of permanent removal. Long-term, minor, adverse impacts on wildlife and protected species from the permanent loss of vegetation and potential habitat.	Short- and long-term, minor to moderate, adverse impacts from the Proposed Action in combination with the listed foreseeable actions are expected.	No impact on biological resources.
Energy and utilities	Short-term, negligible, adverse impacts because of potential disruptions in service during construction.	Long-term, negligible to minor, adverse impacts because of additional demand on utilities and energy resources in an operation phase.	Long-term, negligible to minor, adverse impacts from the Proposed Action in combination with the listed foreseeable actions are expected.	No impact on energy and utilities.
Cultural resources	No impacts are expected to occur on cultural resources during construction.	No impacts are expected to occur on cultural resources during an operational phase.	No change in impact findings.	No impact on cultural resources.
Traffic and transportation	Short-term, minor, adverse impacts are due to additional traffic and construction within and immediately outside of the proposed project sites.	Long-term, negligible, adverse impacts due a slight increase of personnel required to commute to the installation.	Long-term, minor, adverse impacts from the Proposed Action in combination with the listed foreseeable actions are expected.	No impact on traffic and transportation.
Socioeconomics, environmental justice, and protection of children	Short-term, negligible, beneficial impacts on socioeconomics because of the influx of personnel and associated economic impacts.	No long-term impacts on socioeconomics are expected to occur in an operational phase.	Short-term, minor to moderate, adverse impacts are from the Proposed Action in combination	No impacts on socioeconomics, environmental justice, and protection of children.

Resource Area	Construction	Operation	Cumulative Impacts	No Action
	No impacts on environmental justice communities or children are expected.	No long-term impacts to environmental justice populations or the welfare of children by the continued operation of the Proposed Action.	with the listed foreseeable actions are expected.	

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6.0 ACRONYMS AND ABBREVIATIONS

µg	microgram(s)
°F	degree(s) Fahrenheit
AADT	annual average daily traffic
AAC	Anne Arundel County
ACP	access control point
ADP	Area Development Plan
amsl	above mean sea level
AOI	area of interest
APE	Area of Potential Effects
BASOPS	Base Operations
BCC	Bird of Conservation Concern
BG&E	Baltimore Gas and Electric Company
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
CAA	Clean Air Act
CEJST	Climate and Economic Justice Screening Tool
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	equivalent emissions of carbon dioxide
COMAR	Code of Maryland Regulations
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program
dB	decibel(s)
dBA	A-weighted decibel(s)
DERP	Defense Environmental Restoration Program
DoD	U.S. Department of Defense
DOS	U.S. Department of State
DPW	Directorate of Public Works
EA	Environmental Assessment
EO	Executive Order
EOP	U.S. Executive Office of the President
ESA	Endangered Species Act
ESCP	Erosion and Sediment Control Plan
ESD	environmental site design
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FMMD	Fort George G. Meade, Maryland
FONSI	Finding of No Significant Impact
ft^2	square foot/feet
FY	fiscal year
GHG	greenhouse gas
gpm	gallon(s) per minute

HVAC	heating, ventilation, and air conditioning
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resource Management Plan
INSCOM	Intelligence and Security Command
IPaC	Information for Planning and Consultation
IRP	Installation Restoration Program
ISCP	Installation Spill Contingency Plan
LEED	Leadership in Energy and Environmental Design
LOS	level of service
m^3	cubic meter(s)
MD	Maryland
MBTA	Migratory Bird Treaty Act
MDE	Maryland Department of the Environment
MDNR	Maryland Department of Natural Resources
MDT SHA	Maryland Department of Transportation State Highway Administration
mgd	million gallons per day
MGS	Maryland Geological Survey
MHT	Maryland Historical Trust
MMRP	Military Munitions Response Program
MS4	municipal separate storm sewer system
N_2O	nitrous oxide
N/A	not applicable
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historical Preservation Act
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O_3	ozone
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
OWS	oil/water separator
PA	preliminary assessment
PCB	polychlorinated biphenyl
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
PM_{10}	particulate matter less than or equal to 10 microns in diameter
ppb	parts per billion
ppm	parts per million
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RI	remedial investigation
ROI	return on investment
SGCN	Species of Greatest Conservation Need
SHPO	State Historical Preservation Office
SI	site inspection
SIP	State Implementation Plan
SO_2	sulfur dioxide

SO_x	sulfur oxides
SPCCP	Spill Prevention Control and Countermeasure Plan
SVOC	semi-volatile organic compound
SWPPP	Stormwater Pollution Prevention Plan
SWMU	Solid Waste Management Unit
THP	total petroleum hydrocarbons
TPH-DRO	total petroleum hydrocarbons- diesel range organics
TPH-GRO	total petroleum hydrocarbons- gasoline range organics
tpy	ton(s) per year
TRS	Tontechnik-Rechner-SengPiel Audio
UFC	Unified Facilities Criteria
USC	United States Code
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEIA	United States Energy Information Administration
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOC	volatile organic compound
VTCMI	Virginia Tech Conservation Management Institute
WOTUS	waters of the United States
WWTP	wastewater treatment plant

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APPENDIX A

Public Involvement

DEPARTMENT OF THE ARMY
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UNITED STATES ARMY GARRISON 4551 LLEWELLYN AVENUE, SUITE 5000
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Month Day, 2024

Directorate of Public Works

Mr. Devon Frazier-Smith
Tribal Historic Preservation Officer
Absentee Shawnee Tribe of Indians of Oklahoma
2025 South Gordon Cooper Drive
Shawnee, Oklahoma 74801

Dear Mr. Frazier-Smith,

The Army recognizes its responsibilities to maintain Government-to-Government relationship with all tribes affected by activities on Army Installations and our federal trust responsibility for those lands. In the interest of early and frequent communication under Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, pursuant to 36 Code of Federal Regulations (CFR) Part 800.3(f)(2) and as part of the Department of Defense's policy for Government-to-Government consultation with Native American tribes, I am writing to inform you that the Army is beginning the scoping process to prepare an Environmental Assessment (EA) for a new undertaking on Fort Meade, Maryland (FMMD), to provide a consolidated, secure facility to house the newly established U.S. Army Intelligence and Security Command (INSCOM) Cyber Brigade (780th MI) and subordinate units. This correspondence would serve to initiate consultation under Section 106 of the NHPA.

The Army will be preparing the EA under the National Environmental Policy Act of 1969 (NEPA) (42 United States Code Section 4321 et seq.), the Council on Environmental Quality regulations implementing NEPA (40 CFR Parts 1500–1508), and the Army's regulations implementing NEPA (32 CFR Part 651). This project is in the early stages of planning. As soon as more detailed project information has been developed, formal tribal consultation will be initiated.

The purpose of this EA is to inform decision-makers, tribes, stakeholders, and the public of the potential environmental consequences and any associated mitigations, as applicable. Affected Native American tribes and interested persons, organizations, and agencies will have multiple opportunities to provide input on the proposed project. The following resources are evaluated in this EA: land use; airspace; noise; air quality; water resources; biological resources; cultural resources; geology, topography, and soils; hazardous and toxic materials and waste (HTMW); traffic and transportation; infrastructure and utilities; socioeconomics, environmental justice, and protection of children; and human health and safety.

At this early stage in the analysis, the geographic boundaries of the Area of Potential Effects (APE) for this undertaking are conservatively estimated to be the project boundaries depicted in Figure 1 and those areas from which the construction would be visible. The Army anticipates the APE would include areas where the construction and operation of the facility may directly or indirectly cause changes in the character or use of historic properties.

As we are beginning the analysis of the above-referenced resource areas, I would like to invite your input on the anticipated APE for this undertaking. As discussed previously, more information about specific

project plans will be available for review as they are developed to better assist in evaluating the impacts the proposed project may create. I understand that information that you provide on tribal religious or cultural items will be offered voluntarily in the spirit of assisting with our decision making for the project. Based on the available information regarding the proposed action, we welcome any information you would like to share that might be relevant to potential impacts and should be evaluated in the EA.

Any information pertaining to whether this action has the potential to affect tribal trust, subsistence, and/or cultural resources or if tribal rights and/or any protected resources may be affected by this proposed action would be greatly appreciated. Any general comments you may have on the proposed action and proposed alternatives, including discussing possible actions that would benefit your tribe, would also be welcome. I would be happy to answer any questions you may have about the project at this stage. Feel free to connect with me about the project via the contact information listed below. All information provided will be treated with the utmost confidentiality and in accordance with your wishes of how and whether this information can be used. I am also interested in locating any official tribal histories or historical reference materials that are more accurate and/or preferred by your tribe.

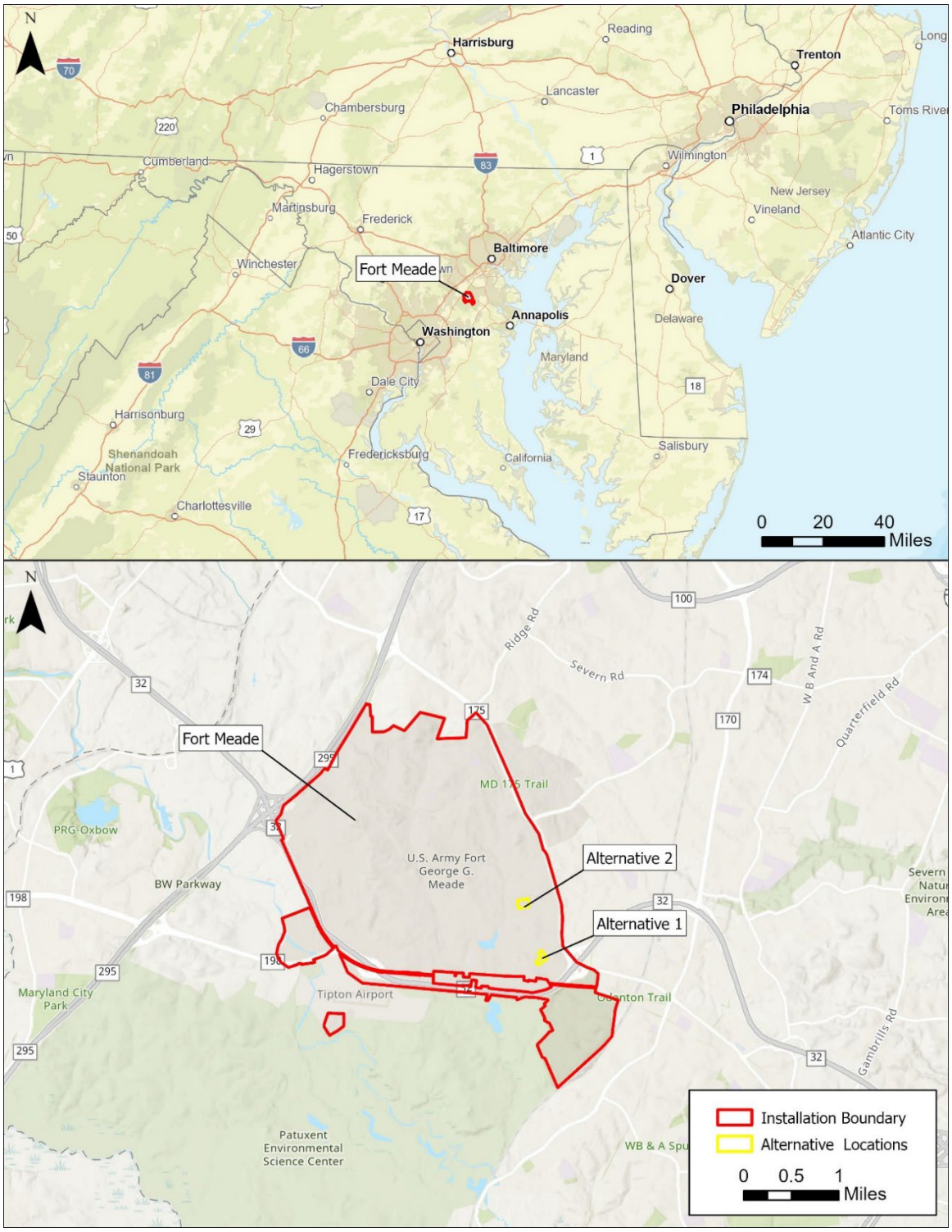
Determinations on the Army's process to identify historic properties within the APE and evaluation and effects determinations made in accordance with Section 106 of the NHPA will be made in consultation with all affected Native American tribes, as well as the State Historic Preservation Offices, and the interested public.

If you have questions or concerns, or require further information, please feel free to contact our Cultural Resource Manager, Jerald Glodeck, at 4216 Roberts Avenue, Fort Meade, Maryland, 20755, by phone at 301-677-9179 or by email: Jerald.W.Glodek.civ@army.mil .

Sincerely,

George B. Knight
Environmental Division Chief

Enclosure: Project Location Maps
Figure 1- Proposed Action Locations on Fort Meade



Enclosure 1- Proposed Action Location on Fort Meade

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APPENDIX B

Air Quality Analysis

Appendix B: Air Quality Analysis Supporting Documentation and Record of Non-Applicability

B.1 Emissions Estimation Methodology

The Army has considered net emissions generated from all sources of air emissions that may be associated with the Proposed Action. More specifically, project-related direct emissions would result from the following:

- **Site preparation and construction activities:** use of heavy construction equipment, worker vehicles traveling to and from the project area, construction of facilities, use of paints and architectural coatings, paving off gases, and fugitive dust from ground disturbance
- **Operational activities:** use of boilers and emergency generators

Emissions factors are representative values that attempt to relate the quantity of a pollutant released with the activity associated with the release of that pollutant. These factors are usually expressed as the weight of pollutant emitted per unit weight, volume, distance, or duration of the pollutant-emitting activity. In most cases, these factors are simply an average of all available data of acceptable quality and are generally assumed to be representative of long-term averages for all emitters in the source category. The emission factors presented in this appendix are generally from the *Compilation of Air Pollutant Emission Factors* (AP-42) and *WebFIRE* (USEPA's online emissions factor database).

All direct and indirect emissions associated with the Proposed Action were estimated. Construction emissions were estimated using predicted equipment use for demolition, site grading, trenching/excavation, construction, architectural coatings, and paving. Operational emissions were estimated using predicted equipment use for facility operation. Operational equipment considered include boilers and emergency generators.

The construction period would involve the use of various non-road equipment, power generators, and trucks. Pieces of equipment to be used for building construction include, but are not limited to, backhoes, loaders, excavators, air compressors, chainsaws, chipping machines, dozers, cranes, pavers, graders, rollers, and heavy trucks. Information regarding the number of pieces and types of construction equipment to be used on the project, the schedule for deployment of equipment (monthly and annually), and the approximate daily operating time (including power level or usage factor) were estimated for each individual construction project based on a schedule of construction activity.

The following on-road vehicle type abbreviations and their definitions are used throughout this appendix:

- LDGV: light-duty gasoline vehicle (passenger cars)
- LDGT: light-duty gasoline truck (0–8,500 pounds gross vehicle weight rating [GVWR])
- HDGV: heavy-duty gasoline vehicle (8,501 to > 60,000 pounds GVWR)
- LDDV: light-duty diesel vehicle (passenger cars)
- LDDT: light-duty diesel truck (0–8,500 pounds GVWR)
- HDDV: heavy-duty diesel vehicle (8,501 to > 60,000 pounds GVWR)
- MC: motorcycles (gasoline)

B.1.1 Construction: Demolition Phase (Alternative 2 only)

B.1.1.1 Assumptions

Average days worked per week: 5

Construction Exhaust

Equipment Name	Number Of Equipment	Hours per Day
Concrete/Industrial Saws Composite	1	8
Rubber Tired Dozers Composite	1	1
Tractors/Loaders/Backhoes Composite	2	6

Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20

Average Hauling Truck Round Trip Commute (mile): 20

Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

Worker Trips

Average Worker Round Trip Commute (mile): 20

Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

B.1.1.2 Emission Factors

Construction Exhaust Emission Factors (lb/hour)

Concrete/Industrial Saws Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0336	0.0006	0.2470	0.3705	0.0093	0.0093	0.0030	58.539
Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

Vehicle Exhaust and Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.192	000.002	000.099	002.870	000.004	000.004	000.000	000.024	00303.869
LDGT	000.209	000.003	000.175	003.239	000.006	000.005	000.000	000.026	00396.310
HDGV	000.856	000.006	000.851	013.446	000.024	000.021	000.000	000.051	00912.039
LDDV	000.074	000.001	000.080	003.109	000.003	000.002	000.000	000.008	00307.078
LDDT	000.081	000.001	000.120	002.137	000.003	000.003	000.000	000.009	00358.668
HDDV	000.118	000.004	002.424	001.549	000.042	000.039	000.000	000.032	01234.892
MC	002.457	000.003	000.660	012.092	000.022	000.020	000.000	000.054	00389.894

B.1.1.3 Formulas

Fugitive Dust Emissions per Phase

$PM10_{FD} = (0.00042 * BA * BH) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (tons)

0.00042: Emission Factor (lb/ft^3)
BA: Area of Building to be demolished (ft^2)
BH: Height of Building to be demolished (ft)
2000: Conversion Factor pounds to tons

Construction Exhaust Emissions per Phase

CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000
CEE_{POL}: Construction Exhaust Emissions (tons)
NE: Number of Equipment
WD: Number of Total Workdays (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

Vehicle Exhaust Emissions per Phase

VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building being demolish (ft^2)
BH: Height of Building being demolish (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
0.25: Volume reduction factor (material reduced by 75% to account for air space)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000
V_{POL}: Vehicle Emissions (tons)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

Worker Trips Emissions per Phase

VMT_{WT} = WD * WT * 1.25 * NE
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Workdays (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000
V_{POL}: Vehicle Emissions (tons)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

B.1.2 Construction: Site Grading Phase

B.1.2.1 Assumptions

Average days worked per week: 5

Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Tractors/Loaders/Backhoes Composite	3	8

Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20
Average Hauling Truck Round Trip Commute (mile): 20

Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

Worker Trips

Average Worker Round Trip Commute (mile): 20

Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

B.1.2.2 Emission Factors

Construction Exhaust Emission Factors (lb/hour)

Graders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0676	0.0014	0.3314	0.5695	0.0147	0.0147	0.0061	132.89
Other Construction Equipment Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Rubber Tired Dozers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

Vehicle Exhaust and Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.192	000.002	000.099	002.870	000.004	000.004	000.000	000.024	00303.869
LDGT	000.209	000.003	000.175	003.239	000.006	000.005	000.000	000.026	00396.310

HDGV	000.856	000.006	000.851	013.446	000.024	000.021	000.000	000.051	00912.039
LDDV	000.074	000.001	000.080	003.109	000.003	000.002	000.000	000.008	00307.078
LDDT	000.081	000.001	000.120	002.137	000.003	000.003	000.000	000.009	00358.668
HDDV	000.118	000.004	002.424	001.549	000.042	000.039	000.000	000.032	01234.892
MC	002.457	000.003	000.660	012.092	000.022	000.020	000.000	000.054	00389.894

B.1.2.3 Formulas

Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (tons)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)

ACRE: Total acres (acres)

WD: Number of Total Workdays (days)

2000: Conversion Factor pounds to tons

Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (tons)

NE: Number of Equipment

WD: Number of Total Workdays (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)

$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)

HC: Average Hauling Truck Capacity (yd^3)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (tons)

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

WD: Number of Total Workdays (days)

WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$
V_{POL}: Vehicle Emissions (tons)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

B.1.3 Construction: Trenching/Excavating Phase

B.1.3.1 Assumptions

Average Days worked per week: 5

Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipment Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20
Average Hauling Truck Round Trip Commute (mile): 20

Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

Worker Trips

Average Worker Round Trip Commute (mile): 20

Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

B.1.3.2 Emission Factors

Construction Exhaust Emission Factors (lb/hour)

Excavators Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0559	0.0013	0.2269	0.5086	0.0086	0.0086	0.0050	119.70
Other Construction Equipment Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0442	0.0012	0.2021	0.3473	0.0068	0.0068	0.0039	122.60
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

Vehicle Exhaust and Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.192	000.002	000.099	002.870	000.004	000.004	000.000	000.024	00303.869
LDGT	000.209	000.003	000.175	003.239	000.006	000.005	000.000	000.026	00396.310
HDGV	000.856	000.006	000.851	013.446	000.024	000.021	000.000	000.051	00912.039
LDDV	000.074	000.001	000.080	003.109	000.003	000.002	000.000	000.008	00307.078
LDDT	000.081	000.001	000.120	002.137	000.003	000.003	000.000	000.009	00358.668
HDDV	000.118	000.004	002.424	001.549	000.042	000.039	000.000	000.032	01234.892
MC	002.457	000.003	000.660	012.092	000.022	000.020	000.000	000.054	00389.894

B.1.3.3 Formulas

Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (tons)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Workdays (days)
2000: Conversion Factor pounds to tons

Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (tons)
NE: Number of Equipment
WD: Number of Total Workdays (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (tons)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

Worker Trips Emissions per Phase

VMT_{WT} = WD * WT * 1.25 * NE
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Workdays (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000
V_{POL}: Vehicle Emissions (tons)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

B.1.4 Construction: Building Construction Phase

B.1.4.1 Assumptions

Average Days worked per week: 5

Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20

Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

Worker Trips

Average Worker Round Trip Commute (mile): 20

Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

Vendor Trips

Average Vendor Round Trip Commute (mile): 40

Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

B.1.4.2 Emission Factors

Construction Exhaust Emission Factors (lb/hour)

Cranes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0680	0.0013	0.4222	0.3737	0.0143	0.0143	0.0061	128.77
Forklifts Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0236	0.0006	0.0859	0.2147	0.0025	0.0025	0.0021	54.449
Generator Sets Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0287	0.0006	0.2329	0.2666	0.0080	0.0080	0.0025	61.057
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872
Welders Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0214	0.0003	0.1373	0.1745	0.0051	0.0051	0.0019	25.650

Vehicle Exhaust and Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.192	000.002	000.099	002.870	000.004	000.004	000.000	000.024	00303.869
LDGT	000.209	000.003	000.175	003.239	000.006	000.005	000.000	000.026	00396.310
HDGV	000.856	000.006	000.851	013.446	000.024	000.021	000.000	000.051	00912.039
LDDV	000.074	000.001	000.080	003.109	000.003	000.002	000.000	000.008	00307.078
LDDT	000.081	000.001	000.120	002.137	000.003	000.003	000.000	000.009	00358.668
HDDV	000.118	000.004	002.424	001.549	000.042	000.039	000.000	000.032	01234.892
MC	002.457	000.003	000.660	012.092	000.022	000.020	000.000	000.054	00389.894

B.1.4.3 Formulas

Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (tons)

NE: Number of Equipment

WD: Number of Total Workdays (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

BA: Area of Building (ft^2)

BH: Height of Building (ft)

(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 trip / 1000 ft^3)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (tons)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Workdays (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$
V_{POL}: Vehicle Emissions (tons)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

Vender Trips Emissions per Phase

$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$
V_{POL}: Vehicle Emissions (tons)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

B.1.5 Construction: Architectural Coatings Phase

B.1.5.1 Assumptions

Average Days worked per week: 5

Worker Trips

Average Worker Round Trip Commute (mile): 20

Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

B.1.5.2 Emission Factors

Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.192	000.002	000.099	002.870	000.004	000.004	000.000	000.024	00303.869
LDGT	000.209	000.003	000.175	003.239	000.006	000.005	000.000	000.026	00396.310
HDGV	000.856	000.006	000.851	013.446	000.024	000.021	000.000	000.051	00912.039
LDDV	000.074	000.001	000.080	003.109	000.003	000.002	000.000	000.008	00307.078
LDDT	000.081	000.001	000.120	002.137	000.003	000.003	000.000	000.009	00358.668
HDDV	000.118	000.004	002.424	001.549	000.042	000.039	000.000	000.032	01234.892
MC	002.457	000.003	000.660	012.092	000.022	000.020	000.000	000.054	00389.894

B.1.5.3 Formulas

Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

1: Conversion Factor man days to trips (1 trip / 1 man * day)

WT: Average Worker Round Trip Commute (mile)

PA: Paint Area (ft^2)

800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (tons)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (tons)

BA: Area of Building (ft^2)

2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)

0.0116: Emission Factor (lb/ft^2)

2000: Conversion Factor pounds to tons

B.1.6 Construction: Paving Phase

B.1.6.1 Assumptions

Average Days worked per week: 5

Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day

Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	8
Paving Equipment Composite	2	8
Rollers Composite	2	6

Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20

Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

Worker Trips

Average Worker Round Trip Commute (mile): 20

Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

B.1.6.2 Emission Factors

Construction Exhaust Emission Factors (lb/hour)

Cement and Mortar Mixers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0085	0.0001	0.0533	0.0413	0.0020	0.0020	0.0007	7.2673
Pavers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0717	0.0008	0.3858	0.4744	0.0219	0.0219	0.0064	78.094
Paving Equipment Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0547	0.0007	0.3280	0.3992	0.0189	0.0189	0.0049	69.059
Rollers Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0409	0.0007	0.2500	0.3762	0.0122	0.0122	0.0036	67.123

Vehicle Exhaust and Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.192	000.002	000.099	002.870	000.004	000.004	000.000	000.024	00303.869
LDGT	000.209	000.003	000.175	003.239	000.006	000.005	000.000	000.026	00396.310
HDGV	000.856	000.006	000.851	013.446	000.024	000.021	000.000	000.051	00912.039
LDDV	000.074	000.001	000.080	003.109	000.003	000.002	000.000	000.008	00307.078
LDDT	000.081	000.001	000.120	002.137	000.003	000.003	000.000	000.009	00358.668
HDDV	000.118	000.004	002.424	001.549	000.042	000.039	000.000	000.032	01234.892
MC	002.457	000.003	000.660	012.092	000.022	000.020	000.000	000.054	00389.894

B.1.6.3 Formulas

Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (tons)

NE: Number of Equipment
WD: Number of Total Workdays (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$
V_{POL}: Vehicle Emissions (tons)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Workdays (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$
V_{POL}: Vehicle Emissions (tons)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$
VOC_P: Paving VOC Emissions (tons)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43,560 ft^2 / acre)^2 / acre)

B.1.7 Operation: Heating

B.1.7.1Assumptions

Heating Calculation Type: Heat Energy Requirement Method
Type of fuel: Natural Gas
Type of boiler/furnace: Commercial/Institutional (0.3 - 9.9 MMBtu/hr)
Heat Value (MMBtu/ft^3): 0.00105
Energy Intensity (MMBtu/ft^2): 0.0648
Operating Time Per Year (hours): 900

B.1.7.2 Emission Factors

Heating Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
5.5	0.6	100	84	7.6	7.6	0.0	0.0	120390

B.1.7.3 Formulas

Heating Fuel Consumption ft^3 per Year

FC_{HER}= HA * EI / HV / 1000000

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
HA: Area of floorspace to be heated (ft^2)
EI: Energy Intensity Requirement (MMBtu/ft^2)
HV: Heat Value (MMBTU/ft^3)
1000000: Conversion Factor

Heating Emissions per Year

HE_{POL}= FC * EF_{POL} / 2000

HE_{POL}: Heating Emission Emissions (tons)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

B.1.8 Operation: Emergency Generator

B.1.8.1Assumptions

Type of fuel: Natural Gas—4 Stroke Lean Burn
Number of Emergency Generators: 1
Emergency Generator Horsepower: 135
Average Operating Hours per Year: 30

B.1.8.2 Emission Factors

Heating Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
0.000927	0.000005	0.006656	0.004377	0.000001	0.000001	0.000000	0.000000	0.920156

B.1.8.3 Formulas

Emergency Generator Emissions per Year

AEPOL= (NGEN * HP * OT * EFPOL) / 2000

AEPOL: Activity Emissions (tons per Year)

NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EFPOL: Emission Factor for Pollutant (lb/hp-hr)

B.2 Alternative 1 Air Emissions Analysis

Action Location

State: Maryland
County: Anne Arundel
Regulatory Areas: Baltimore, MD; Anne Arundel County and Baltimore County, MD

Construction Period

Start: October 2027
End: September 2029

Operations Period

Start: October 2029
End: Indefinite

B.2.1 Action Description

The Proposed Action includes construction and operation of an approximately 94,500-square-foot (ft^2) facility to accommodate approximately 435 personnel currently employed on Fort George G. Meade, Maryland (FMMD). The facility would include office space, operations areas, conference rooms, classrooms, secure compartmented information facility spaces, server space, arms vault, building utilities and connections, redundant mechanical and electrical systems, secure telecommunication distribution systems, backup (standby) power generation, and an approximately 275-space paved parking lot. Alternative 1 involves an approximately 5.3-acre area at the northwest corner of 3rd Street and Chisholm Avenue, adjacent to existing Building 2234, in the southeastern portion of the installation.

The analysis assumes that construction would occur over a 2-year period from October 2027 through September 2029. It was assumed that facility operations would begin following completion of construction, or October 2029.

Site grading would occur on an approximately 5.25-acre (228,700 ft^2) area. Site grading would begin in October 2027 and last approximately 2 months. It was assumed that 79,400 cubic yards (yd^3) of material would need to be hauled on or off site.

Trenching would be required for utility installation and extension. Utilities that would be installed underground include electric distribution lines (200 linear feet), communications lines (4,000 linear feet), sanitary sewer lines (200 linear feet), fire water service lines (200 linear feet), potable-water distribution lines (200 linear feet), and storm sewer lines (200 linear feet). The total trench length was estimated at 5,000 linear feet. A 3-foot trench width was assumed. Therefore, the total area of disturbance was estimated at 15,000 ft^2. Trenching would begin in December 2027 and last approximately 2 months.

Construction would include the 94,500 ft^2 facility. Height of the facility was assumed to be 30 feet. Construction would begin in February 2028 and last approximately 18 months.

Architectural coatings would be applied to the new facility for a total of 94,500 ft^2. Architectural coating application would begin in July 2029 and last approximately 1 month.

Paving would be required for the new parking area (approximately 68,400 ft^2), access road (approximately 50,000 ft^2), and sidewalks (approximately 2,600 ft^2), for a total of 121,000 ft^2. Paving would begin in August 2029 and last approximately 2 months.

Heating/cooling would be required for the new facility (94,500 ft^2) following construction. It was assumed that the facility would be heated using a natural gas–fired boiler. Heating would begin following construction, or October 2029, and would continue indefinitely.

An emergency generator would be installed at the facility to provide backup power. It was assumed that the generator would run on natural gas. Operation of the generator would begin following construction, or October 2029, and would continue indefinitely.

B.2.2 Assumptions

Site Grading Phase

Start: October 2027
Phase duration: 2 months
Area of site to be graded (ft^2): 228,690
Amount of material to be hauled offsite (yd^3): 79,400

Trenching/Excavating Phase

Start: December 2027
Phase duration: 2 months
Area of site to be trenched/excavated (ft^2): 15,000
Amount of material to be hauled on or offsite (yd^3): 0

Building Construction Phase

Start: February 2028
Phase duration: 18 months
Area of building (ft^2): 94,500
Height of building (ft): 30

Architectural Coatings Phase

Start: July 2029
Phase duration: 1 month
Total square footage (ft^2): 94,500

Paving Phase

Start: August 2029
Phase duration: 2 months
Paving area (ft^2): 121,000

Heating

Start: October 2029
End: Indefinite
Area of floorspace to be heated (ft^2): 94,500
Type of fuel: Natural Gas
Type of boiler/furnace: Industrial (10-250 MMBtu/hr)
Heat Value ($MMBtu/ft^3$): 0.00105

Energy Intensity (MMBtu/ft^2): 0.0743

Emergency Generator

Start: October 2029
End: Indefinite
Type of fuel used in emergency generator: Natural Gas—4 Stroke Lean Burn
Number of emergency generators: 1
Emergency generator's horsepower: 135
Average operating hours per year: 30

B.2.3 Alternative 1 Emissions Summary

Alternative 1 Total Estimated Construction Emissions (tons)

	VOC	NO_x	CO	SO_x	PM_{10}	PM2.5	Lead	CO_2e
Emissions	1.601942	3.066699	4.224720	0.009569	4.952876	0.103967	0.000000	1035.8

Alternative 1 Estimated Operations Emissions: Heating (tons)

	VOC	NO_x	CO	SO_x	PM_{10}	PM2.5	Lead	CO_2e
Emissions	0.018389	0.334350	0.280854	0.002006	0.025411	0.025411	0.000000	402.5

Alternative 2 Estimated Operations Emissions: Emergency Generator (tons)

	VOC	NO_x	CO	SO_x	PM_{10}	PM2.5	Lead	CO_2e
Emissions	0.001877	0.013478	0.008863	0.000010	0.000002	0.000002	0.000000	1.9

Alternative 1 Total Estimated Emissions by Year (tpy)

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	Lead	CO_2e
2027	0.090	0.639	0.701	0.002	4.719	0.019	<0.001	256.9
2028	0.237	1.388	2.042	0.005	0.195	0.046	<0.001	462.0
2029	1.281	1.127	1.554	0.004	0.045	0.045	<0.001	418.0
2030 (steady state)	0.020	0.348	0.290	0.002	0.025	0.025	<0.001	404.4

B.3 Alternative 2 Air Emissions Analysis

Action Location

State: Maryland
County: Anne Arundel
Regulatory Areas: Baltimore, MD; Anne Arundel County and Baltimore County, MD

Construction Period

Start: October 2027
End: September 2029

Operations Period

Start: October 2029
End: Indefinite

B.3.1 Action Description

The Proposed Action includes construction and operation of an approximately 94,500 ft^2 facility to accommodate approximately 435 personnel currently employed on FMMD. The facility would include office space, operations areas, conference rooms, classrooms, secure compartmented information facility

spaces, server space, arms vault, building utilities and connections, redundant mechanical and electrical systems, secure telecommunication distribution systems, backup (standby) power generation, and an approximately 275-space paved parking lot. The Alternative 2 site is approximately 6.0 acres of a 13.8-acre site at 9th and Ernie Pyle Streets in the eastern portion of the installation. Improvements and/or retrofitting of the existing stormwater management pond within the western portion of the 6-acre site would be included as part of Alternative 2.

The analysis assumes that construction would occur over a 2-year period from October 2027 through September 2029. It was assumed that facility operations would begin following completion of construction, or October 2029.

Demolition would be required for the existing parking lot (approximately 12,000 ft^2) in the western portion of the Alternative 2 site. Demolition would begin in October 2027 and last approximately 1 month.

Site grading would occur on an approximately 6-acre (261,360 ft^2) area. Site grading would begin in November 2027 and last approximately 2 months. It was assumed that 79,400 yd^3 of material would need to be hauled on or off site.

Trenching would be required for utility installation and extension. To be consistent with Alternative 1, a total trench length of 5,000 linear feet was assumed. A 3-foot trench width was assumed. Therefore, the total area of disturbance was estimated at 15,000 ft^2. Trenching would begin in January 2028 and last approximately 1 month.

Construction would include the 94,500 ft^2 facility. Height of the facility was assumed to be 30 feet. Construction would begin in February 2028 and last approximately 18 months.

Architectural coatings would be applied to the new facility for a total of 94,500 ft^2. Architectural coating application would begin in July 2029 and last approximately 1 month.

Paving would be required for the new parking area (approximately 110,000 ft^2), access road (approximately 50,000 ft^2), and sidewalks (approximately 4,000 ft^2), for a total of 164,000 ft^2. Paving would begin in August 2029 and last approximately 2 months.

Heating/cooling would be required for the new facility (94,500 ft^2) following construction. It was assumed that the facility would be heated using a natural gas–fired boiler. Heating would begin following construction, or October 2029, and would continue indefinitely.

An emergency generator would be installed at the facility to provide backup power. It was assumed that the generator would run on natural gas. Operation of the generator would begin following construction, or October 2029, and would continue indefinitely.

B.3.2 Assumptions

Demolition Phase

Start: October 2027
Phase duration: 1 month
Area of building to be demolished (ft^2): 12,000
Height of building to be demolished (ft): 1

Site Grading Phase

Start: October 2027
Phase duration: 2 months

Area of site to be graded (ft^2): 261,360
Amount of material to be hauled offsite (yd^3): 79400

Trenching/Excavating Phase
Start: December 2027
Phase duration: 2 months
Area of site to be trenched/excavated (ft^2): 15,000
Amount of material to be hauled on or offsite (yd^3): 0

Building Construction Phase
Start: February 2028
Phase duration: 18 months
Area of building (ft^2): 94,500
Height of building (ft): 30

Architectural Coatings Phase
Start: July 2029
Phase duration: 1 month
Total square footage (ft^2): 94,500

Paving Phase
Start: August 2029
Phase duration: 2 months
Paving area (ft^2): 164,000

Heating
Start: October 2029
End: Indefinite
Area of floorspace to be heated (ft^2): 94,500
Type of fuel: Natural Gas
Type of boiler/furnace: Industrial (10-250 MMBtu/hr)
Heat Value ($MMBtu/ft^3$): 0.00105
Energy Intensity ($MMBtu/ft^2$): 0.0743

Emergency Generator
Start: October 2029
End: Indefinite
Type of fuel used in emergency generator: Natural Gas—4 Stroke Lean Burn
Number of emergency generators: 1
Emergency generator's horsepower: 135
Average operating hours per year: 30

B.3.3 Alternative 2 Emissions Summary

Alternative 2 Total Estimated Construction Emissions (tons)

	VOC	NO_x	CO	SO_x	PM_{10}	PM2.5	Lead	CO_2e
Emissions	1.612858	3.125661	4.318785	0.009746	5.607444	0.106013	0.000000	1053.7

Alternative 2 Estimated Operations Emissions: Heating (tons)

	VOC	NO_x	CO	SO_x	PM_{10}	PM2.5	Lead	CO_2e
Emissions	0.018389	0.334350	0.280854	0.002006	0.025411	0.025411	0.000000	402.5

Alternative 2 Estimated Operations Emissions: Emergency Generator

	VOC	NO_x	CO	SO_x	PM_{10}	PM2.5	Lead	CO_2e
Emissions	0.001877	0.013478	0.008863	0.000010	0.000002	0.000002	0.000000	1.9

Alternative 1 Total Estimated Emissions by Year (tpy)

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	Lead	CO_2e
2027	0.099	0.697	0.795	0.002	5.373	0.021	<0.001	274.2
2028	0.237	1.388	2.042	0.005	0.195	0.046	<0.001	462.0
2029	1.282	1.128	1.554	0.004	0.045	0.045	<0.001	418.6
2030 (steady state)	0.020	0.348	0.290	0.002	0.025	0.025	<0.001	404.4

B.4 Record of Non-Applicability (RONA) to the General Conformity Rule for 780th Cyber Facility Construction and Operation, Fort Meade, Maryland

Record of Non-Applicability
In Accordance with the Clean Air Act – General Conformity Rule for the
780TH CYBER FACILITY
FORT MEADE, MARYLAND

FMMD proposes the construction and operation of an approximately 94,500 square-foot facility to accommodate approximately 435 personnel currently employed on Fort Meade. The facility would include office space, operations areas, conference rooms, classrooms, secure compartmented information facility spaces, server space, arms vault, building utilities and connections, redundant mechanical and electrical systems, secure telecommunication distribution systems, backup (stand-by) power generation, and an approximately 275-space paved parking lot.

The Proposed Action is described in detail in the accompanying Environmental Assessment (EA). The air quality impacts associated with the two alternatives considered for constructing and operating the Proposed Action, including the estimated emissions calculations, are presented in Section 3.2 of the EA. For both action alternatives, the 780th Cyber Facility would be constructed from Fiscal Year 2028 through Fiscal Year 2029, with operation beginning in Fiscal Year 2030. Emissions from demolition, site grading, excavation, building construction, architectural coatings, and paving were assessed. Operational emissions from boilers and emergency generators were assessed. Emissions from mobile emissions sources would not increase from existing conditions because additional vehicle trips to and from Fort Meade would not change as a result of the Proposed Action. General Conformity under the Clean Air Act, Section 176 has been evaluated according to the requirements of 40 CFR 93.153, Subpart B. Regardless of the alternative ultimately implemented, the requirements of this rule are not applicable because:

The maximum total annual direct emissions for each criteria pollutant from implementation of either alternative for the Fort George G. Meade 780th Facility have been estimated at 1.388 tons per year (tpy) for NO_X, 1.282 tpy for VOCs, 2.042 tpy for CO, 0.005 tpy for SO_X, 5.373 tpy for PM_{10}, 0.046 tpy for $PM_{2.5}$, and 0.0 tpy for lead. These emissions would be below the *de minimis* threshold levels for nonattainment pollutants of Anne Arundel County, which are 50 tpy for VOCs, and 100 tpy for NO_X and SO_X.

Supporting documentation and emissions estimates appear in the NEPA documentation (Section 3.2 and Appendix A of the EA).