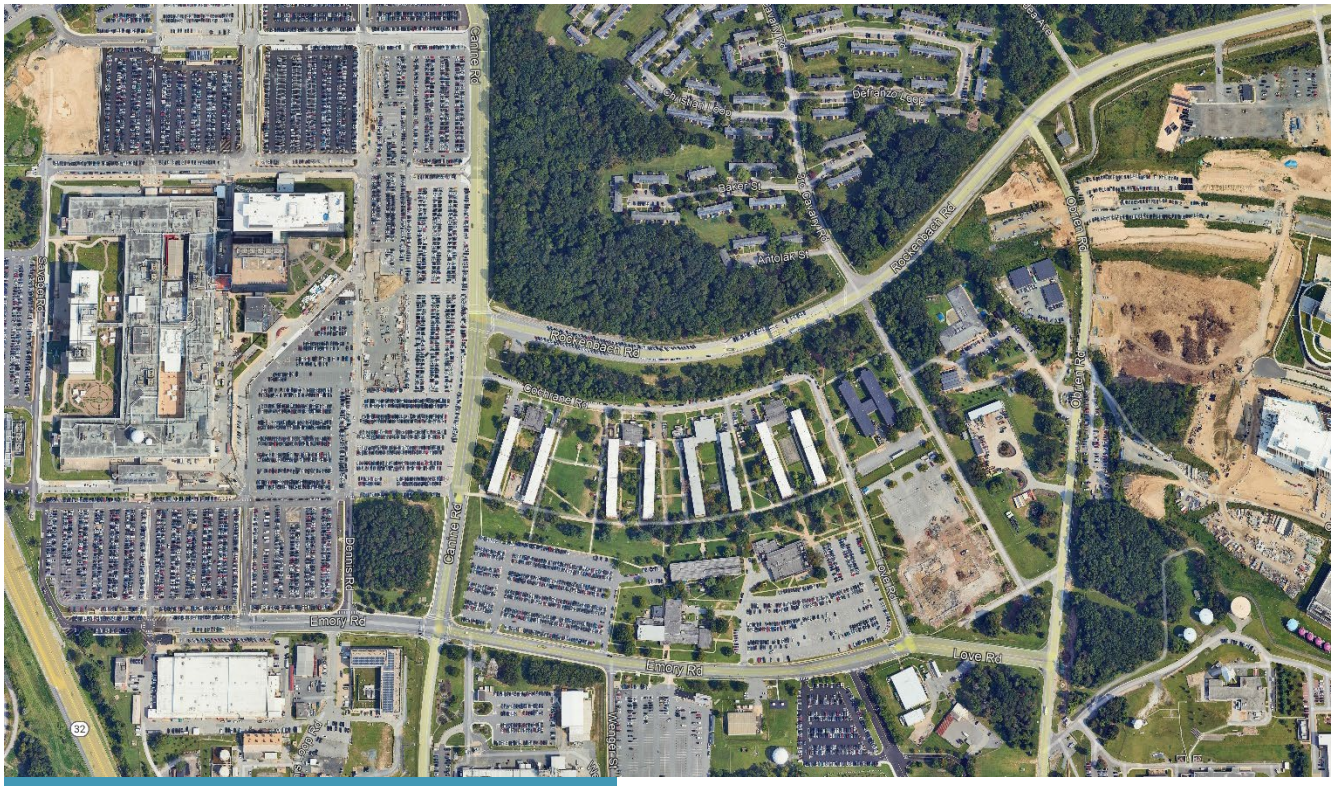

Draft

Environmental Assessment

Addressing Central Campus Development

Fort Meade, Maryland

US Army Corps of Engineers
Baltimore District

September
2025

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ABBREVIATIONS

µg	microgram(s)
AAC	Anne Arundel County
ACM	asbestos-containing material
ADP	Area Development Plan
American Water	American Water Operations and Maintenance, Inc.
AOI	Area of Interest
APE	Area of Potential Effects
AST	aboveground storage tank
BGEPA	Bald and Gold Eagle Protection Act
BMP	best management practice
CCD	Central Campus Development
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHC	Center for Hearing and Communication
cm^2	square centimeter(s)
CMI	(Virginia Tech) Conservation Management Institute
CMSF	Consolidated Military Support Facility
CNMF	Cyber National Mission Force
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	equivalent emissions of carbon dioxide
COMAR	Code of Maryland Regulations
CSS	Central Security Service
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program
dB	decibel(s)
dBA	A-weighted decibel(s)
DNL	day-night average sound level
DoD	U.S. Department of Defense
DoDI	U.S. Department of Defense Instruction
DOE	Determination of Eligibility
DOH	(Maryland) Department of Health
DOS	U.S. Department of State
DPW	Directorate of Public Works
EA	Environmental Assessment
ECB	East Campus Building
ECPS	East Campus Parking Structure
EISA	Energy Independence and Security Act
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

FAA	Federal Aviation Administration
FCA	Forest Conservation Act
FEMA	Federal Emergency Management Agency
Fort Meade	Fort George G. Meade
FRP	Facility Response Plan
ft^2	square foot/feet
FY	fiscal year
GHG	greenhouse gas
GHGRP	Greenhouse Gas Reporting Program
gpd	gallon(s) per day
HVAC	heating, ventilation, and air conditioning
HWMP	Hazardous Waste Management Plan
Hz	hertz
I-	Interstate
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
ISWMP	Integrated Solid Waste Management Plan
IT	information technology
IWSC	Integrated Workforce Support Center
L	liter(s)
lb	pound(s)
LBP	lead-based paint
LEED	Leadership in Energy and Environmental Design
LOS	level of service
m^3	cubic meter(s)
MBTA	Migratory Bird Treaty Act
MD	Maryland State Route
MDE	Maryland Department of the Environment
MD GIO	Maryland Geographic Information Office
MDNR	Maryland Department of Natural Resources
MDOT	Maryland Department of Transportation
mg	milligram(s)
mgd	million gallons per day
MGS	Maryland Geological Survey
MHT	Maryland Historical Trust
MOF	Mission Operations Facility
MOSF	Mission Operations Support Facility
MOU	Memorandum of Understanding
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFA	No Further Action
NHPA	National Historic Preservation Act
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
NSA	National Security Agency

NSAW	National Security Agency Washington
O_3	ozone
OHWB	Occupational Health and Well-Being
ORAM	O'Brien Road Access Modernization
OSHA	Occupational Safety and Health Administration
OTM	*OSHA Technical Manual*
OWS	oil/water separator
P2	Pollution Prevention
PAF	Publishing and Archives Facility
PCB	polychlorinated biphenyl
pCi	picoCurie(s)
PM_{10}	particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
ppb	part(s) per billion
PPE	personal protective equipment
ppm	part(s) per million
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
ROI	region of influence
SHA	State Highway Administration
SIP	State Implementation Plan
SMP	Site Management Plan
SO_2	sulfur dioxide
SO_x	sulfur oxides
SPCC	Spill Prevention, Control, and Countermeasure
State	State of Maryland
SWMU	Solid Waste Management Unit
tpy	ton(s) per year
TRB	Transportation Research Board
TSA	Troop Support Area
UFC	Unified Facilities Criteria
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
UXO	unexploded ordnance
VCP	vehicle control point
VOC	volatile organic compound
WBC	Well-Being Center
WCPS	West Campus Parking Structure
WWTP	wastewater treatment plant

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COVER SHEET

Draft Environmental Assessment
Addressing Central Campus Development

Responsible agency: U.S Department of Defense (DoD), National Security Agency (NSA), Fort George G. Meade (Fort Meade), Maryland

Affected location: Fort Meade, Maryland

Report designation: Draft Environmental Assessment (EA)

Proposed action: DoD proposes to demolish antiquated buildings and utility infrastructure and construct new operational facilities and upgraded utilities on NSA's Central Campus.

Abstract: DoD has proposed to demolish relevant existing structures and infrastructure and construct new operational facilities and upgraded utilities with a purpose of allowing for greater personnel and mission consolidation and effectiveness, along with more efficient land uses throughout NSA's Central Campus. The project is needed because the Central Campus currently consists of antiquated buildings that have insufficient utility infrastructure and discontinued operational missions that do not support modernization of NSA space. Three alternatives were identified that include varying combinations of four new facilities and associated parking, as well as the No Action Alternative.

The analyses in this EA consider alternatives for the Proposed Action, including the No Action Alternative. Resource areas analyzed in this EA include land use and visual resources, transportation, noise, air quality, geological resources, water resources, biological resources, cultural resources, infrastructure, sustainability, hazardous materials and wastes, and socioeconomics.

In accordance with DoD National Environmental Policy Act (NEPA) Procedures dated June 30, 2025 (Federal Register Volume 90 page 27857), the analysis in this EA is certified to have considered the factors mandated by NEPA, represents DoD's good-faith effort to prioritize documentation of the most important considerations required by the statute within the congressionally mandated page limits, and this prioritization reflects DoD's expert judgment.

For additional information, contact Mr. Jeffrey Williams, Senior Environmental Engineer, Office of Occupational Health and Well Being, by mail to 9800 Savage Road, Suite 6218, Fort Meade, MD 20755; telephone at 301-688-2970; or email to jdwill2@nsa.gov.

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Table of Contents

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Appendices

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1. Purpose of and Need for the Proposed Action

This chapter presents the purpose of and need for the Proposed Action, including an introduction and background, purpose of and need for action, scope of the Environmental Assessment (EA), interagency/intergovernmental coordination and consultations, and public participation.

1.1 Introduction and Background

An EA is being prepared to address the U.S. Department of Defense's (DoD's) proposal for demolition of relevant existing structures and infrastructure and construction of new operational facilities and upgraded utilities on the National Security Agency's (NSA's) Central Campus at Fort George G. Meade (Fort Meade), Maryland. **Figure 1-1** shows the location of Fort Meade. The EA complies with the requirements and guidance of the National Environmental Policy Act of 1969 (NEPA), as amended (United States Code [USC] Title 42 Sections 4321−4347); DoD Instruction 4715.9 (*Environmental Planning and Analysis*); DoD NEPA Procedures dated June 30, 2025 (Federal Register Volume 90 page 27857); Department of the Army Interim Final Rule for NEPA dated July 3, 2025 (Federal Register Volume 90 page 29450); and NSA's *National Environmental Policy Act Procedures*.

NSA is a cryptologic intelligence agency administered as part of DoD and the Office of the Director of National Intelligence. It is responsible for the collection and analysis of foreign communications and foreign signals intelligence. NSA is a tenant DoD agency on Fort Meade, occupying approximately 840 acres of the 5,100-acre installation.

NSA's Central Campus consists of 1950s-era antiquated buildings that are an ineffective land use, have insufficient utility infrastructure, and have discontinued operational missions. To support the modernization of NSA space, the old buildings and utility infrastructure would be demolished and new operational facilities and upgraded utilities would be installed. The project would, through the Central Campus development, bridge the proximity gap between the East Campus and West Campus, allowing for greater mission-oriented organization, efficiencies in critical national security operations, and meeting mission requirements for NSA and the intelligence community.

This EA is organized into five chapters and three appendices. **Chapter 1** states the purpose, need, scope, and public involvement efforts for the Proposed Action. **Chapter 2** contains a detailed description of the Proposed Action and alternatives considered. **Chapter 3** presents the affected environment and environmental consequences anticipated from implementing the Proposed Action. **Chapter 4** lists the references used to support the analysis. **Chapter 5** provides the names of those persons who prepared this document. **Appendix A** includes documentation of interagency coordination and public involvement activities. **Appendix B** includes documentation supporting the air quality analysis. **Appendix C** includes a Coastal Zone Management Act (CZMA) Federal Consistency Determination. **Appendix D** includes a definition for each resource category analyzed.

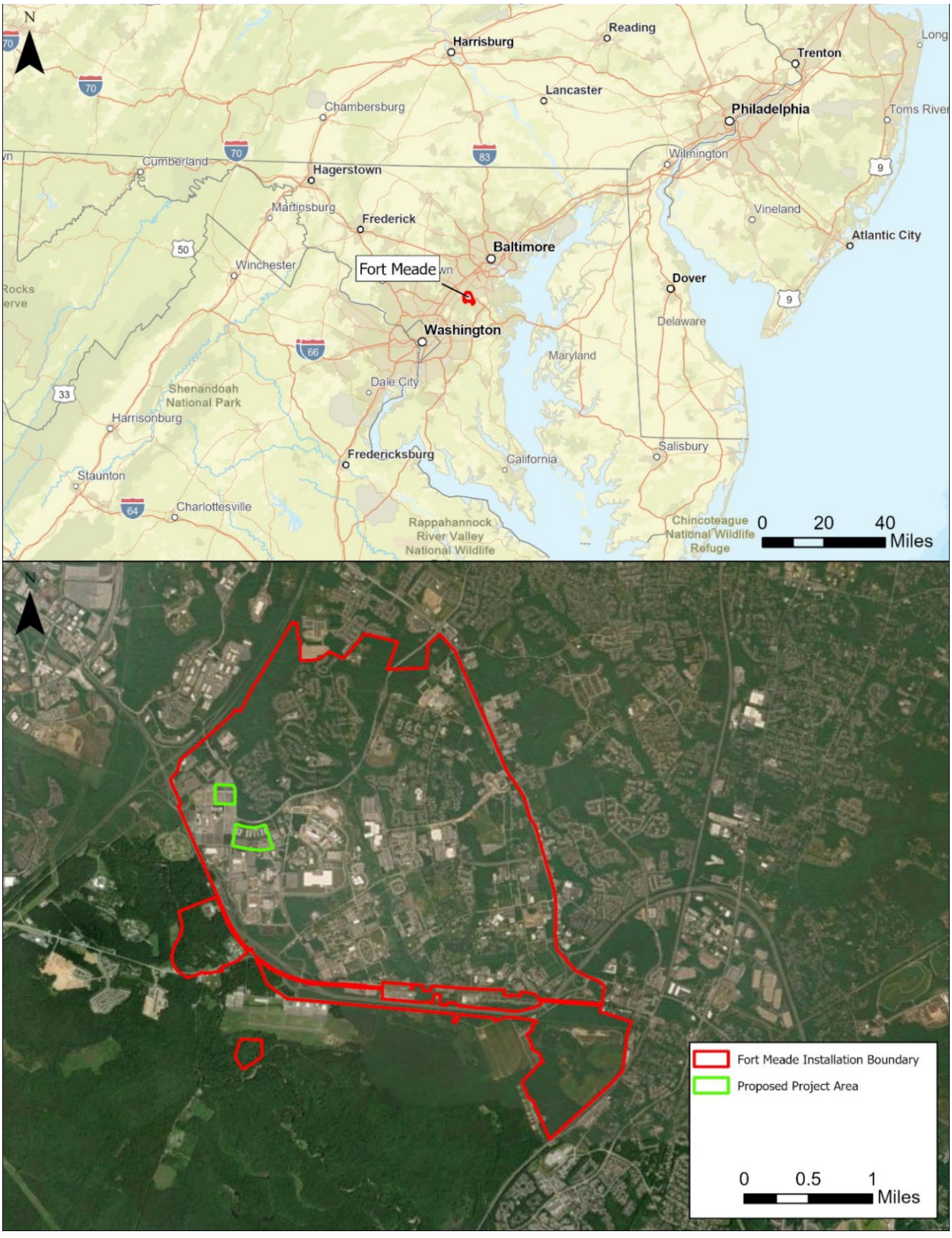


Figure 1-1. Location of Fort Meade and Proposed Project Area

1.2 Purpose and Need

The purpose of the Proposed Action is to allow for greater personnel and mission consolidation and effectiveness, along with more efficient land uses throughout NSA's Central Campus. The Proposed Action is needed because the Central Campus currently consists of antiquated buildings that have insufficient utility infrastructure and discontinued operational missions that do not support modernization of NSA space. The buildings that would be demolished are former barracks constructed in the 1950s that have outlived their useful life and troops stationed at the NSA campus now use Freedom Barracks on Fort Meade Garrison. More efficient use of space would allow for greater mission-oriented organization.

1.3 Scope of the EA

The scope of this EA consists of the Proposed Action, range of alternatives, and impacts to be considered. The purpose of this EA is to inform decision makers and the public of the likely environmental consequences of implementing the Proposed Action and alternatives.

Chapter 2 provides details on the Proposed Action and alternatives for implementing this action. The No Action Alternative is analyzed to provide a baseline against which the environmental impacts of implementing the range of alternatives addressed can be compared. This EA identifies appropriate measures not already included in the Proposed Action or alternatives to avoid, minimize, reduce, or compensate for any adverse environmental impacts.

1.3.1 Environmental Laws, Regulations, and Executive Orders

To comply with NEPA, the planning and decision-making process refers to other relevant environmental laws, regulations, and Executive Orders (EOs). The NEPA process does not replace procedural or substantive requirements of other environmental laws; it addresses them collectively in an analysis, which enables decision makers to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action.

This EA examines the environmental impacts of the Proposed Action and reasonable alternatives on the following resource areas: land use and visual resources, transportation, noise, air quality, geological resources, water resources, biological resources, cultural resources, infrastructure, sustainability, hazardous materials and wastes, and socioeconomics. Where relevant, environmental laws, regulations, and EOs that might apply to the proposed project are described in the appropriate resource areas to be presented in **Chapter 3** of the EA. The scope of the analyses of potential environmental consequences to be provided in **Chapter 3** will consider environmental and reasonably foreseeable effects under each alternative.

1.3.2 Other Relevant Laws, Regulations, and Executive Orders

The policies and goals of NEPA supplement an agency's existing authorizations (42 USC 4335). DoD adheres to mission requirements as identified in the National Security Act of 1947 (50 USC 3002) and EO 12333, *United States Intelligence Activities*, as

amended by EO 13470, *Further Amendments to Executive Order 12333, United States Intelligence Activities.* The EA, however, presents the Proposed Action and alternatives in sufficient detail to adequately describe the types and magnitudes of environmental impacts potentially associated with the Proposed Action and alternatives while ensuring that sensitive information is safeguarded.

1.4 Interagency and Public Involvement

Agency and public participation in the NEPA process promotes open communication between the proponent and regulatory agencies, the public, and potential stakeholders. All persons and organizations having a potential interest in the Proposed Action or alternatives are encouraged to participate in the public involvement process. Public participation opportunities with respect to the Proposed Action and this EA are guided by NEPA, Army NEPA regulations, and DoD Directive 4715.1E. EO 12372, *Intergovernmental Review of Federal Programs*, as amended by EO 12416 of the same name, requires federal agencies to provide opportunities for consultation and review by state and local governments that would be directly affected by a federal proposal.

Appendix A contains the list of potentially interested parties and scoping letters provided along with any responses received.

2. Description of the Proposed Action and Alternatives

This chapter presents a description of the Proposed Action and alternatives, including screening criteria, alternatives considered and eliminated from further analysis, alternatives carried forward for analysis, and identification of reasonably foreseeable effects.

2.1 Proposed Action

NSA proposes to demolish antiquated buildings and utility infrastructure and construct new operational facilities and upgraded utilities on NSA's Central Campus to allow for greater personnel and mission consolidation and effectiveness, along with more efficient land uses. The Proposed Action would include site preparation to include demolition of any relevant existing structures and infrastructure in the Troop Support Area (TSA), including Buildings 9802 through 9804 (barracks) and 9805 (administrative/office building), Six Hats Dining Hall, Eagle Fitness Center, and T22 and T23 parking lots. In addition to new facilities, vehicle parking, access roads, sidewalks, life-safety generators, utilities, and related infrastructure would be constructed and installed. Environmental Site Design (ESD), including stormwater management facilities, would be installed as required for all facilities and roadways. Additionally, Sigaba Way would be extended from its current terminus from the east to Canine Road to the west, allowing for direct shuttle bus access from the Main and Central Campuses to the East Campus.

The proposed Central Campus Development (CCD) would consist of construction of up to four new facilities, including a Cyber National Mission Force (CNMF) Mission Operations Support Facility (MOSF), Consolidated Military Support Facility (CMSF), Integrated Workforce Support Center (IWSC), Well-Being Center (WBC), and surface parking or a parking structure (West Campus Parking Structure [WCPS]). The new facilities are described in more detail in the following sections, providing information such as square footage, building heights, and number of personnel for occupation. Building heights are currently tentative; as CCD planning progresses, coordination between NSA and Fort Meade Directorate of Public Works (DPW) regarding heights would continue, with consideration given to distances to sensitive receptors and use of appropriate building facades.

2.1.1 Cyber National Mission Force Mission Operations Support Facility

Construction and operation of the MOSF would consolidate mission operations, headquarters, and key partners supporting CNMF and U.S. Cyber Command. Construction would include administrative, conference, and meeting spaces, operations and operations support areas, support services (e.g., cafeteria, fitness), and a loading dock/platform. The MOSF would allow for a variety of tenant occupancy functions and flexible size and configurations to conduct mission support through administrative and support services. All required utilities and connections and secure telecommunication distribution systems would be fully integrated into the facilities (USACE 2022). Construction would be expected to start in fiscal year (FY) 2031 and occur for

approximately 2 years. MOSF operations would be expected to be initiated within 2 years of construction completion.

Site preparation for the proposed MOSF would include demolition of any relevant existing structures and infrastructure in the area, such as buildings and parking, clearing and grubbing, cut/fill and grading, and erosion and sediment control measures (USACE 2022).

Supporting facilities would include site preparation for infrastructure features such as general site circulation, perimeter security, fencing, stormwater management, lighting, and landscaping. Improvements would include new or expansion of existing utility services and distribution systems, site security systems, and the transportation network. Construction of the proposed MOSF would include Architectural Barriers Act/Americans with Disabilities Act accessible walkways and courtyard areas; landscaping; inspection canopies; diesel life-safety generator; access roads; utilities and related infrastructure; and installation of ESD stormwater management techniques as required for all roadways, facilities, and utilities (USACE 2022, 2023b).

The planned occupancy is 2,500 personnel (50 percent currently on campus, 50 percent planned from new hires or off campus). The facility would have approximately 750,000 square feet (ft^2) of floor space and be up to 160 feet in height, distributed among eight stories (including a basement to support mechanical and electrical systems). The first floor would be approximately 115,000 ft^2, and the remaining seven levels would be approximately 91,000 ft^2 each.

Parking with the ability to accommodate personnel located in the MOSF and any parking displaced by the development is also planned. The features have yet to be finalized, as they are dependent on planning for the other CCD facilities.

2.1.2 Consolidated Military Support Facility

The CMSF would provide consolidated administrative space for 2,200 Cryptologic Support Element personnel (25 percent on campus, 75 percent planned from new hires or off campus), as well as unify, collocate, and consolidate operations, leverage shared requirements, and ensure inclusiveness and mission effectiveness in support of Joint Operations (CSS 2024).

The CMSF would be a multi-story structure separated by a common entry pavilion with a full basement. Redundant primary power systems would ensure continuity of operations. The facility would have 563,000 ft^2 in floor space and be up to 120 feet in height, distributed among six stories. A service area/courtyard would be provided at the lower level for the loading dock, logistics area, and access to the utilities' infrastructure. The building would also include roof-mounted mechanical equipment with required screening (CSS 2024). Construction would be expected to start in FY 2032 and occur for approximately 2 years.

2.1.3 Integrated Workforce Support Center

Construction and operation of the IWSC would accommodate 2,500 personnel (70 percent currently on campus, 30 percent planned from new hires or off campus) and consolidate NSA support functions including human resources, installation and logistics,

and security administration functions. Construction would include administrative, conference, and meeting spaces; support services (e.g., cafeteria, fitness); and a loading dock/platform. The IWSC would allow for a variety of tenant occupancy functions and flexible size and configurations to support those functions. The IWSC would have approximately 700,000 ft^2 of floor space and be up to 120 feet in height, distributed among six stories. Associated utilities and infrastructure would be similar to those proposed and described for the CMSF in **Section 2.1.2**. All required utilities and connections and secure telecommunication distribution systems would be fully integrated into the facilities. Construction would be expected to start in FY 2032 and occur for approximately 4 years. IWSC operations would be expected to be initiated within 2 years of construction completion.

2.1.4 Well-Being Center

The WBC would accommodate 70 personnel (50 percent currently on campus, 50 percent planned from new hires or off campus) and serve as a hub for a centralized consolidation of Behavioral Health and Life Services and its three principal sections: Employee Assistance Services, Workplace Psychological Consultation, and Work/Life Services. These functions are currently in discrete locations and ad hoc spaces. Consolidation would allow improved efficiency and efficacy for both the workforce and providers.

The WBC would provide whole-person consultation, treatment, services, education, and resources for the workforce, NSA organizations, and their family members. The facility would consist of clinical peer meeting spaces, conference rooms for psycho-education sessions, video teleconference spaces, and administrative offices.

The WBC would have approximately 70,000 ft^2 of floor space and be up to 40 feet in height, distributed between two stories. The WBC would include a dining facility and 20,000 ft^2 fitness center to replace outdated facilities that would be demolished as a result of campus redevelopment. The WBC would also include 40,000 ft^2 of outdoor amenity/garden space. Associated utilities and infrastructure would be similar to those proposed and described for the CMSF in **Section 2.1.2**, but on a smaller scale. Construction would be expected to start in FY 2031 and occur for approximately 2 years.

2.1.5 West Campus Parking Structure

The WCPS would include site preparation and site development features to create a complete and usable project. Site preparation would include demolition, site clearing and grubbing, cut/fill and grading, and erosion and sedimentation control features. Site development would include utility connections as well as stormwater management, site access, adjacent roadway improvements, pedestrian improvements, and the provision of a transit stop adjacent to the parking structure. An emergency/life-safety generator would be sized and installed to accommodate emergency/life-safety loads plus 15 percent future growth (USACE 2023a, 2023b).

The proposed WCPS would accommodate 4,600 parking spaces, with 2,300 being designated to accommodate the CCD. It would be located in a parcel to the northwest of the TSA, near the intersection of north–south and east–west Canine Road with

Connector Road. The WCPS would be constructed on the surface parking lots north of Building 9800D and east of Towler Road. It would be a 9-level parking structure, up to 125 feet in height, and have an approximate footprint of 360 by 490 feet. The structure would have a 14-foot ground floor level, with the levels above 10 to 16 feet in height. There would be four vertical pedestrian circulation elements, two stair towers on the north side, and two stair towers and elevator banks on the south side. The proposed WCPS would replace existing surface parking in this area and support near- and long-term parking requirements for the entire NSA campus. This site is currently a paved area consisting of four surface parking lots with 1,700 surface parking spaces. Upon completion of the WCPS, there would be approximately 730 surface parking spaces retained adjacent to the parking structure (USACE 2023a, 2023b).

2.2 Screening Criteria

In addition to meeting the purpose and need of the proposed project, the alternatives must meet the following screening criteria:

- **Site repurposing:** The alternatives must maximize use of the existing Central Campus and redevelop the space into a modernized facility.
- **Site accessibility:** The alternatives must use sites that would be accessible to personnel employed by the units that would use the facilities.
- **Mission requirements:** The alternatives must meet mission requirements.

Based on these screening criteria, DoD considered three alternatives to meet the purpose of and need for the Proposed Action.

2.3 Alternatives Considered and Eliminated from Further Analysis

All the action alternatives considered for the Proposed Action are being carried forward; therefore, no alternatives were dismissed from further analysis in this EA.

2.4 Alternatives Carried Forward for Analysis

Three action alternatives located within the project area, as shown in **Figure 1-1**, have been identified and carried forward for further analysis. Although a No Action Alternative would not meet the purpose and need for the Proposed Action, this alternative provides a baseline comparison for the Proposed Action and alternatives. The project area for the Proposed Action contains two parcels: the TSA and the WCPS parcel. The TSA is approximately 31 acres, bounded on the north, west, south, and east by Cochrane, Canine, Emory, and Love Roads, respectively. The WCPS parcel is approximately 13 acres, located northwest of the TSA, near the main entrance to the NSA campus, and bounded on the north and east by Canine Road.

2.4.1 Alternative 1

As shown in **Figure 2-1**, Alternative 1 would include construction of the MOSF in the northeast portion of the TSA, west of Love Road from the proposed CNMF, as well as construction of the WBC in the southeast portion of the TSA. Sigaba Way would be

extended to connect the East and West Campuses in FY 2031, serving as a pedestrian and transit-only road, encouraging pedestrian circulation and use of convenient mass transit and bisecting the TSA in an east–west direction. All existing buildings in the TSA would be demolished, to include three barracks (Buildings 9802, 9803, and 9804); one administrative/office building (Building 9805); and the Six Hats Dining Hall, Eagle Fitness Center, and two parking lots (T22 and T23), totaling 1,028 parking spaces. The remainder of the TSA would be converted to surface parking.

2.4.2 Alternative 2

As shown in **Figure 2-2**, Alternative 2 would include all development proposed under Alternative 1, as well as construction of the CMSF in the southeast portion of the TSA. Structured parking would also replace the surface parking proposed under Alternative 1 in the southwest portion of the TSA.

2.4.3 Alternative 3

As shown in **Figure 2-3**, Alternative 3 (the Preferred Alternative) would include all development proposed in Alternatives 1 and 2, as well as construction of the IWSC in the northwest portion of the TSA. Under Alternative 3, the WCPS would be constructed north of the administrative facilities of NSA's West Campus in an existing surface parking lot, bounded on the north and east by Canine Road.

2.4.4 No Action Alternative

Because DoD has identified a need for the Proposed Action (i.e., to meet mission requirements of NSA and the intelligence community), taking no action does not meet the project purpose and need. The No Action Alternative is analyzed to provide a baseline of the existing conditions against which potential environmental and socioeconomic impacts of the Proposed Action can be compared. Under the No Action Alternative, CCD construction would not occur and operations would remain decentralized across the NSA campus and leased facilities off campus.

2.5 Identification of Reasonably Foreseeable Effects

DoD NEPA Implementing Procedures Part 6 defines a reasonably foreseeable effect as "…sufficiently likely to occur such that a person of ordinary prudence would take it into account in reaching a decision." Informed decision making is served by consideration of reasonably foreseeable effects resulting from projects geographically or temporally relevant to the Proposed Action that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

Past actions are those actions, and their associated impacts, that occurred within the geographical extent of reasonably foreseeable effects that have shaped the current environmental conditions of the project area and, therefore, are now part of the existing environment, in addition to present actions included in the affected environments for each resource area. An example of past and present actions are the completed and ongoing development and construction activities on NSA's East Campus (NSA 2010, 2017). Reasonably foreseeable actions that could have a causal relationship to the Proposed Action and alternatives as well as contribute to additional impacts on the human environment are discussed in this section. The following discussion presents

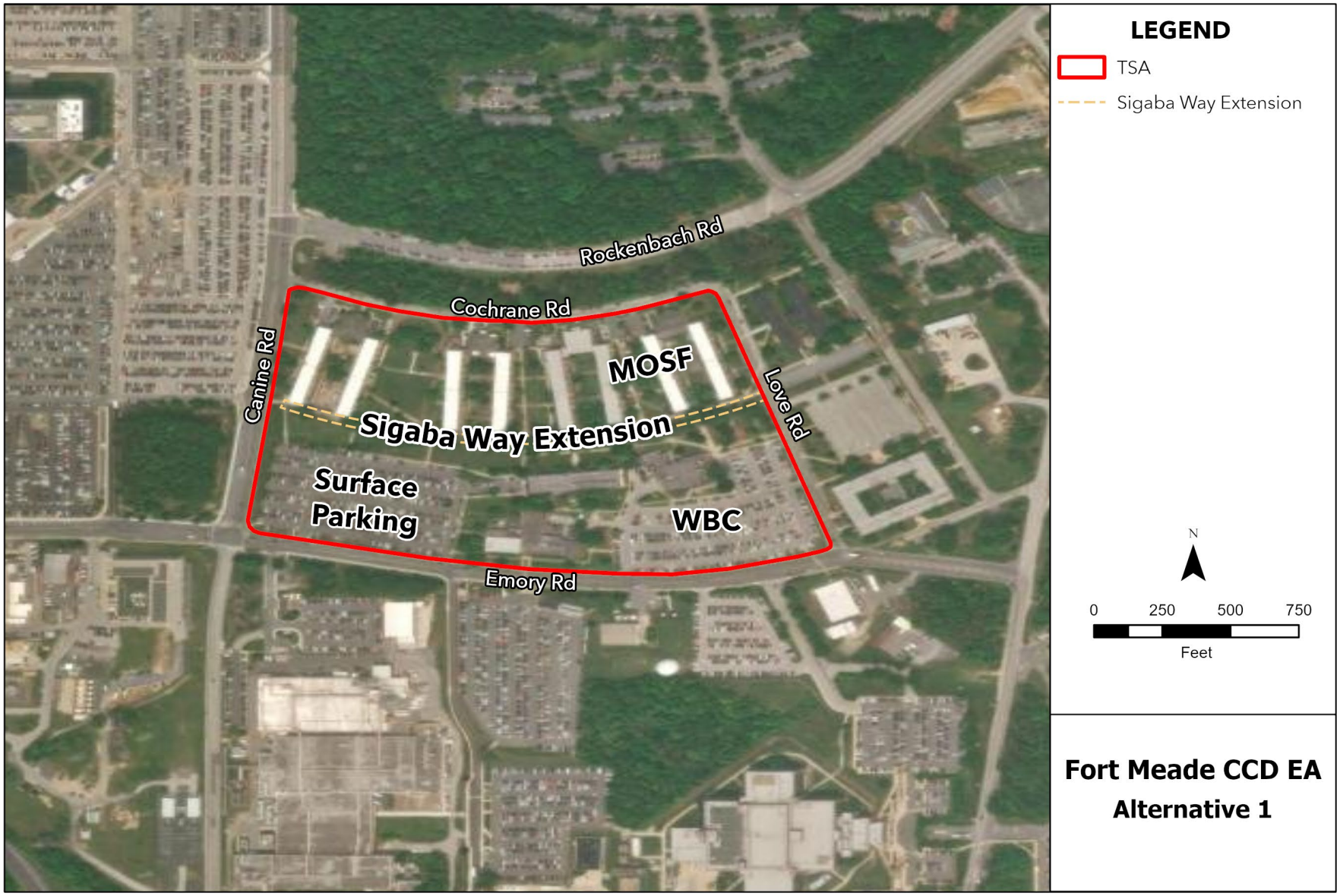


Figure 2-1. Alternative 1 Site Layout

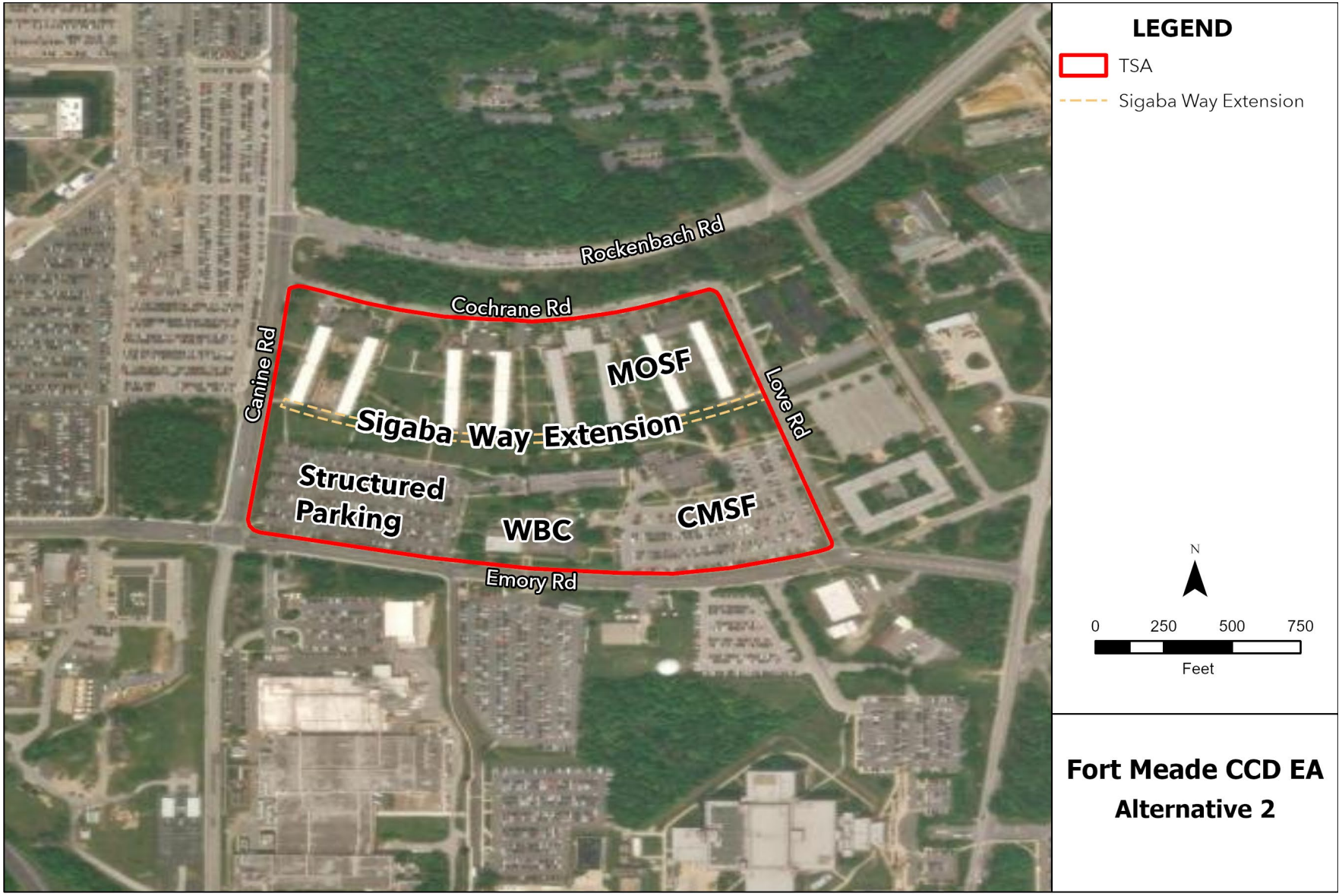


Figure 2-2. Alternative 2 Site Layout

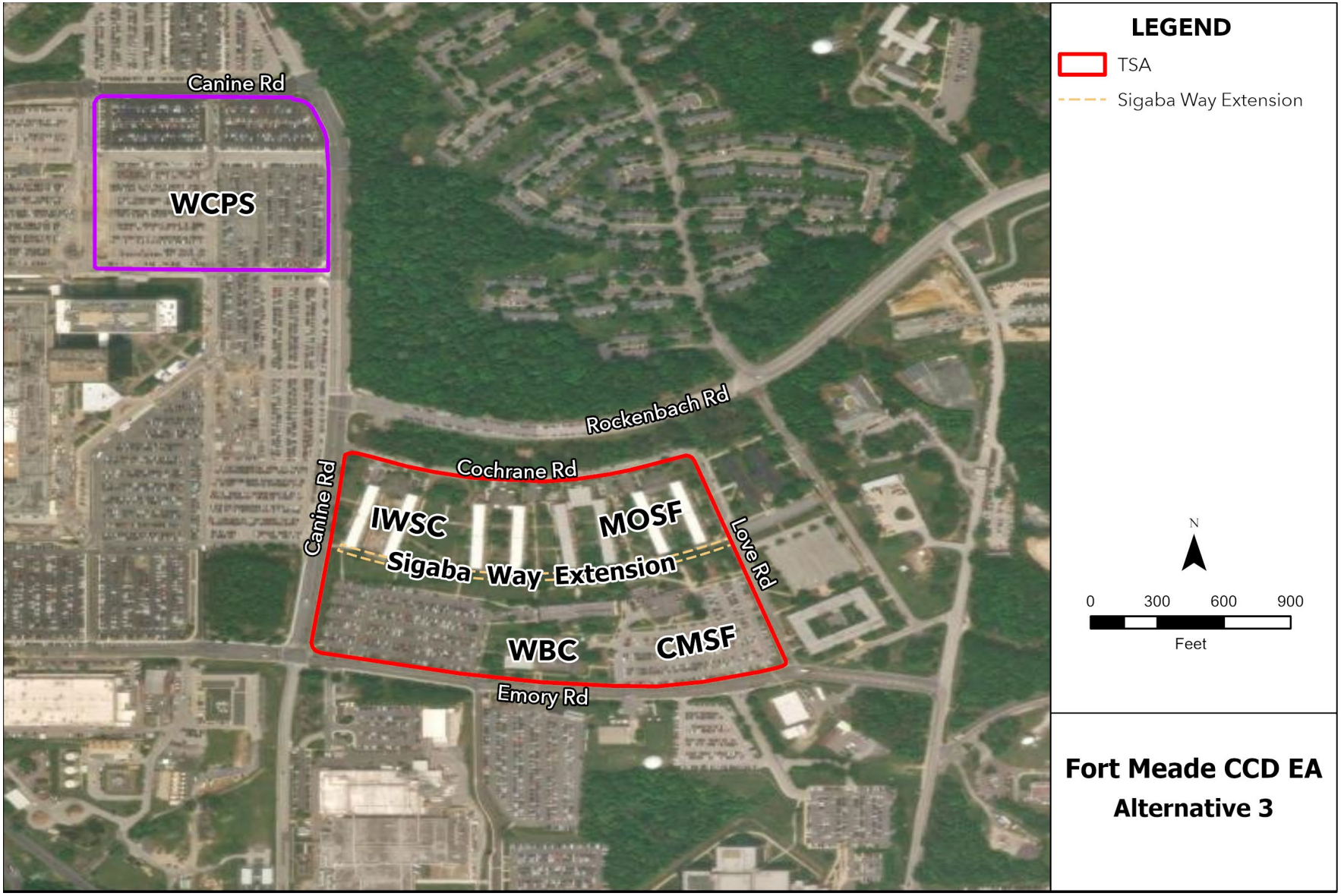


Figure 2-3. Alternative 3 Site Layout

those actions or projects that are temporally or geographically related to the Proposed Action and, as such, have the potential to result in reasonably foreseeable effects. These analyses are presented by resource area in **Chapter 3**.

2.5.1 Future Actions on Fort Meade

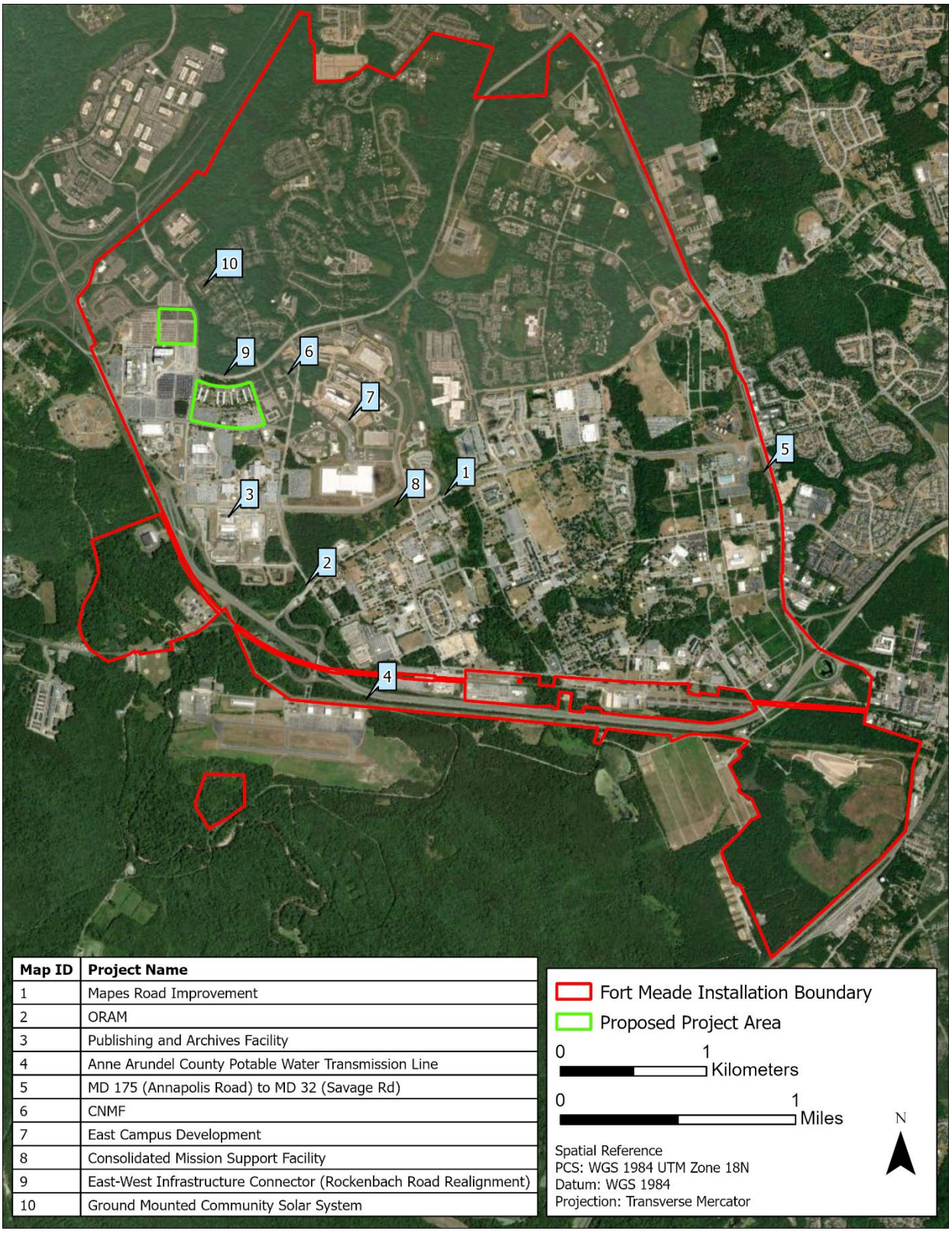
The known, reasonably foreseeable future projects that would occur on Fort Meade are described herein and depicted in **Figure 2-4**.

Roadway Improvements and Access Control Points. The following projects are planned on Fort Meade to improve access control facilities, intersections, and general transportation on the installation. The descriptions for these projects were obtained from the *Fort Meade Area Development Plan* (ADP) and other sources (U.S. Army 2020).

- **Mapes Road:** Fort Meade proposes to widen Mapes Road from two to four lanes between O'Brien Road and Cooper Avenue. This project is in the initial planning stages and does not currently have an identified construction timeline.
- **Venona Road:** NSA proposes to widen Venona Road from two to four lanes from O'Brien Road east to where Venona Road turns north and currently expands to four lanes, and add a curved intersection to elevate the corridor to a primary connection. Reconfiguration and improvement of the Samford, O'Brien, and Venona Roads intersection is also planned. Construction for the Venona Road widening is anticipated to begin in FY 2026.
- **Rockenbach Road:** Rockenbach Road on Fort Meade Garrison would be realigned to terminate in the Midway Commons Housing Community. The existing western portion of Rockenbach Road would become an extension to Venona Road and connect the East Campus to the West Campus. Construction is proposed to occur in FY 2027.

East Campus Development. NSA is currently developing 2.9 million ft^2 in the East Campus. East Campus Building (ECB) 3 would be approximately 952,000 ft^2 and include a mixture of support groups. The other projects include ECB4 and ECB5, each at 950,000 ft^2 (NSA 2025). Construction for ECB4 and ECB5 is currently ongoing. Construction for ECB4 is slated for completion by late 2028, with completion of ECB5 by early 2030. Two parking structures (East Campus Parking Structure [ECPS] 3 and ECPS4) are also under construction, providing parking close to the new administrative facilities on the East Campus. ECPS3 is planned to accommodate approximately 3,200 spaces with a potential expansion capacity of approximately 750 parking spaces. ECPS4 is planned to accommodate approximately 2,100 parking spaces with a potential expansion capacity of approximately 1,700 parking spaces.

Publishing and Archives Facility (PAF). NSA is currently constructing a PAF, warehouse, associated parking facilities, and supporting facilities on Fort Meade within the main NSA campus. The PAF would accommodate approximately 725 employees associated with the publishing and archives mission. Up to approximately 605 personnel would be relocated to the PAF from within the NSA campus, while approximately 120 personnel relocating to the PAF would come from off-installation facilities. The net



Map ID	Project Name
1	Mapes Road Improvement
2	ORAM
3	Publishing and Archives Facility
4	Anne Arundel County Potable Water Transmission Line
5	MD 175 (Annapolis Road) to MD 32 (Savage Rd)
6	CNMF
7	East Campus Development
8	Consolidated Mission Support Facility
9	East-West Infrastructure Connector (Rockenbach Road Realignment)
10	Ground Mounted Community Solar System

Figure 2-4. Locations of Other Reasonably Foreseeable Actions on Fort Meade

increase in personnel would be approximately 100 people because 20 personnel on campus potentially displaced by the Proposed Action would move off-installation. Construction is anticipated to be completed by FY 2026 (NSA 2018).

O'Brien Road Access Modernization (ORAM). NSA proposes to implement the ORAM project, which would entail renovation and upgrade of inspection facilities, upgrade of access facilities, and corresponding roadway improvements for Mapes, O'Brien, Perimeter, and Venona Roads in the southwestern portion of Fort Meade. Construction for the ORAM project is expected to begin in FY 2029 and occur for 2 years (NSA 2024a).

CNMF Mission Operations Facility (MOF). CNMF and NSA propose to construct and operate a new 750,000 ft^2 CNMF MOF, an administrative complex for approximately 2,500 personnel, and associated infrastructure. The proposed MOF would be approximately 115,000 ft^2, and 122 feet above grade distributed among seven levels, excluding mechanical rooms and utilities located on the roof level. Features within the MOF would include administrative, conference, and meeting spaces; operations and operations support areas; support services (e.g., cafeteria and fitness center); and a loading dock/platform. 1,700 personnel would come from facilities already on Fort Meade, and 800 would transition from off-site facilities and future growth (NSA 2024b).

Ground Mounted Community Solar System*.* Fort Meade and its housing privatization contractor propose to install ground mounted solar panels on the site of previously demolished housing units in the western portion of the Midway Commons Housing Community.

2.5.2 Other Actions outside the NSA Campus and Fort Meade

The following actions are the known, reasonably foreseeable future projects located outside Fort Meade that are considered in the reasonably foreseeable effects analysis (see **Figure 2-4**).

Anne Arundel County Maryland State Route (MD) 32 Potable Water Transmission Line. Anne Arundel County proposes to install approximately 20,000 linear feet of new potable water transmission main along MD 32 across the southern portion of Fort Meade and the northern portion of the Patuxent National Wildlife Refuge, and an associated booster pump station. The transmission main and pump station would provide a redundant water source to the Maryland City Pressure Zone. The water transmission main would extend from the intersection of Annapolis Road (MD 175) and Town Center Boulevard in Odenton to the intersection of Fort Meade Road (MD 198) and Center Avenue in Laurel, primarily along the MD 32 corridor, including a portion of Fort Meade on the southern side of MD 32 (AAC 2021a). This project is in the initial planning stage with no identified construction timeline.

MD 175 (Annapolis Road) Mapes Road to MD 32 (Savage Road). The purpose of this Maryland Department of Transportation State Highway Administration project is to widen and resurface the existing four-lane roadway to convert it to a six-lane roadway. The new roadway would include a raised median, sidewalk, and shared-use path. Currently, the project is at the 30 percent design phase and awaiting further funding (MDOT SHA 2025).

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3. Affected Environment and Environmental Consequences

Chapter 3 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. Definitions for each resource is provided in **Appendix D**. Baseline conditions represent current conditions. This chapter also describes the potential environmental impacts of the Proposed Action on the baseline conditions of each environmental resource.

3.1 Land Use and Visual Resources

This section presents the affected environment and environmental consequences of the project as it relates to land use and visual resources, including existing conditions and environmental consequences.

3.1.1 Existing Conditions

The region of influence (ROI) for the analysis of impacts on land use includes the project area and surrounding areas.

Land Use. Fort Meade encompasses approximately 5,067 acres. It is located in Anne Arundel County, Maryland, approximately 18 miles southwest of Baltimore, Maryland. The installation is bordered to the south and west by the Patuxent Freeway (MD 32) and to the northwest by the Baltimore–Washington Parkway. Land use, planning, and future development plans for Fort Meade are detailed in the installation's ADP.

The NSA campus is determined via a Host-Tenant Agreement with Fort Meade on the west side of the installation, and a 21-acre site along the northern border of the installation. It has its own Master Plan that details land use, installation planning standards, and future development plans (CSS 2024, NSA 2025).

National Security Agency Washington (NSAW) is generally divided into operations, support, parking, green space, community, and information technology (IT) centers on its campus on Fort Meade. The West Campus consists primarily of administrative functions, facility support, emergency services, substation, and generator facility. Parking associated with these facilities lines this campus. The Central Campus consists primarily of support facilities, warehouse and storage facilities, and industrial facilities such as the Vehicle Cargo Inspection Facility. The East Campus consists of administrative facilities and generator and utility plant. The Proposed Action would cover two areas depending on the alternative. The MOSF, CMSF, IWSC, and WBC would be in an operations-designated area in the existing TSA, while the WCPS would be in a parking-designated area (NSA 2025).

Visual Resources. Fort Meade and the NSA campus are divided into six visual themes (administrative, industrial, troop, residential, community, and campus) by architectural design and land use. The site for the Proposed Action is within the NSA campus, primarily in the TSA within an administrative district.

3.1.2 Environmental Consequences

This section presents the environmental consequences of the project as it relates to land use and visual resources, including evaluation criteria; Alternatives 1, 2, and 3 and the No Action Alternative; and reasonably foreseeable effects.

3.1.2.1 EVALUATION CRITERIA

Impacts to land use and visual resources would be considered significant if a proposed action would result in new buildings or structures that conflict with real property classifications or adjacent land uses, or if new additions substantially conflict with the visual character of the area, such as having a noticeably different architectural design or blocking a scenic vista, or introducing excessive light at night or glare during the day.

3.1.2.2 ALTERNATIVE 1

Land Use. Under Alternative 1, short-term, negligible to minor, adverse impacts and long-term beneficial impacts on land uses on the NSA campus would occur. Demolition of the majority of buildings in the TSA, along with the construction of the MOSF, WBC, Sigaba Way extension, and surface parking would result in temporary, minor, adverse impacts to the surrounding area, restricting access and full operations of nearby facilities for the duration of construction activities because of an increase in noise and traffic. The planned area for the MOSF and WBC within the existing TSA would remain similar to its current use as operations space. The rest of the TSA, however, would be converted from operations to parking. Some landscape trees may be lost during redevelopment and would be reestablished to the extent practicable. The area designated for Alternative 1 development would be consistent with the NSA and Fort Meade Master Plans, and no adverse impacts on land use would be expected. A CZMA Federal Consistency Determination for the proposed CCD was developed to confirm whether the Proposed Action would be conducted in a manner consistent with the Coastal Zone Management Program (CZMP). The determination is provided in **Appendix C**.

Long-term, minor, beneficial impacts would occur from the operation of the MOSF and WBC. Operation of the MOSF would be consistent with ongoing mission activities and adjacent land uses on the campus. The facility would provide amenities and administrative spaces, improving operational efficiency and operational load on the campus. Operation of the expanded parking spaces on the TSA would not appreciably change land use designations but would accommodate more personnel.

Visual Resources. Short- and long-term, negligible to minor, adverse impacts, and long-term, minor, adverse and beneficial impacts on visual resources would occur because of the presence of construction equipment and activities, tree clearing, and demolition of outdated buildings under Alternative 1. Clearing of the TSA for development of surface parking could remove up to approximately 2 acres of open space, although this depends on the amount of open space maintained during development. This open space is not marked on the NSA Campus Master Plan and thus would not be considered a substantial change to land use (NSA 2025). It is expected that landscape trees would be reestablished after construction, but the area could have less vegetation overall.

The proposed MOSF would be larger than the existing facility that would be replaced and, with the demolition of existing TSA buildings, would continue to encompass an aesthetic of built landscape. The WBC would likely not be as prominent because of its smaller size. During construction, the visual aesthetic of the area would temporarily be slightly degraded from the presence of construction equipment and demolition and development actions in the viewscape.

Long-term, minor, adverse and beneficial impacts would occur from demolition and construction under the Proposed Action. Demolition of the older buildings would beneficially contribute to creation of a more uniform aesthetic across the campus. Additionally, the MOSF, WBC, surface parking, and Sigaba Way extension would align more with the surrounding visual theme and built landscape. Development would be styled in alignment with the NSA campus and intends to follow a Techno Modern architectural style, which would create a contrast between the NSA campus and styles typically found elsewhere on Fort Meade (CSS 2024). The presence of the MOSF would also potentially adversely contribute to visual impacts on the Midway Commons Housing Community to the north on Fort Meade. Due to the size of the facility, it would likely be visible above nearby trees to residents, negatively impacting the natural landscape that is visible from the housing area. Building heights are currently tentative; as CCD planning progresses, coordination between NSA and Fort Meade Directorate of Public Works (DPW) regarding heights would continue, with consideration given to distances to sensitive receptors and use of appropriate building facades to help reduce potential impacts.

3.1.2.3 ALTERNATIVE 2

Land Use. Short-term, negligible to minor, adverse and long-term, beneficial impacts that would occur on land uses under Alternative 2 would be similar to those described for Alternative 1. Further, development of the TSA would be in accordance with the NSA and Fort Meade Master Plans. Thus, the addition of structured parking and the CMSF would be similar to impacts under Alternative 1. Access to the affected land may be temporarily restricted for longer than in Alternative 1.

Long-term, minor, beneficial impacts would occur from the operation of the CMSF. Operation of the CMSF coupled with the MOSF would be consistent with ongoing mission activities and adjacent land uses on the campus. The facility would improve operational efficiency and operational load greater than under Alternative 1 and would not appreciably change land use designations.

Visual Resources. Short- and long-term, negligible to minor, adverse impacts, and long-term, minor, adverse and beneficial impacts on visual resources anticipated under Alternative 2 would be similar to but slightly greater than those described for Alternative 1. Some additional open space may be maintained, because parking would be centralized to one structure. Construction would last longer because of the CMSF, which would increase the amount of time that visual resources would be temporarily degraded. The presence of the parking structure would negligibly detract from the overall aesthetic of the administrative theme in the area but would be consistent with the surrounding parking areas.

Long-term, minor, adverse and beneficial impacts would occur from demolition and construction. Construction of the CMSF would beneficially contribute to the creation of a more uniform aesthetic across the NSA campus and its surroundings. The proposed CMSF would be designed and constructed to the same aesthetic as the MOSF, and would consist of compatible materials and color palettes, and massing and material selection to visually break down the large scale of the building (CSS 2024). The CMSF and MOSF would set the visual aesthetic for the TSA, which would contribute to the modernization of the visual theme and built landscape of the area closest to the NSA campus to the west. These buildings, however, would adversely impact the visual landscape of the Midway Commons Housing Community to the north to a greater extent than under Alternative 1.

3.1.2.4 ALTERNATIVE 3

Land Use. Short-term, negligible to minor, adverse and long-term, beneficial impacts would occur on land uses under Alternative 3, similar to those under Alternatives 1 and 2. The addition of the IWSC and WCPS would be in accordance with the NSA and Fort Meade Master Plans. Access to the affected land may be temporarily restricted for longer than in Alternative 2.

Long-term, minor, beneficial impacts would occur from the operation of the IWSC in conjunction with the other buildings planned for construction. Operation of these buildings would be consistent with ongoing mission activities and adjacent land uses on the campus. The facilities would improve operational efficiency and operational load more than under Alternative 2 and would not appreciably change land use designations.

Visual Resources. Short- and long-term, minor, adverse impacts, and long-term, minor, adverse and beneficial impacts on visual resources would occur under Alternative 3, similar to but greater than those under Alternatives 1 and 2. The amount of open space would likely be the same, as the areas to be developed for the IWSC and WCPS are already developed as parking areas. The proposed IWSC would follow the same aesthetic as the MOSF and CMSF and would set the visual aesthetic for the TSA. The MOSF, CMSF, IWSC, and WBC would embody a uniform administrative architecture and parking structures with pockets of green space, while the WCPS would follow standard parking architecture (NSA 2025). These buildings would support a more unified theme than Alternatives 1 and 2 and would align with the surrounding built landscape. The WCPS would be consistent with the visual aesthetics of the parking area, though its height would draw more attention to the surrounding visual landscape. Because it would be consistent with other structures nearby, impacts would be expected to be negligible.

Long-term, minor, beneficial impacts would occur from demolition and construction. Construction of the IWSC would beneficially contribute to the creation of a more uniform aesthetic across the NSA campus and its surroundings. The IWSC with the rest of the buildings would contribute to the modernization of the visual theme and built landscape of the area closest to the NSA campus to the west. The IWSC, MOSF, and CMSF would adversely impact the visual landscape of the Midway Commons Housing Community to the north to a greater extent than under Alternative 2.

3.1.2.5 NO ACTION ALTERNATIVE

Under the No Action Alternative, CCD construction at Fort Meade would not occur. Operations would remain decentralized across the NSA campus and leased facilities off campus and the existing conditions discussed in **Section 3.1.1** would remain unchanged, resulting in continued inefficient land use patterns. Therefore, minor to moderate impacts on land use and visual resources would be expected.

3.1.2.6 REASONABLY FORESEEABLE EFFECTS

Land Use. Short-term, negligible to minor, adverse, and long-term, minor, beneficial reasonably foreseeable effects on land use would be expected from the Proposed Action, in combination with the reasonably foreseeable future projects occurring on Fort Meade discussed in **Section 2.5**. Projects such as the East Campus Development and CNMF MOF would have similar impacts to construction under the Proposed Action. Construction would temporarily restrict access to the affected land but would result in the development of buildings that support the administrative themes of the West and East Campuses. Additional development would continue to consolidate operational efficiency for the NSA campus into the planned campuses.

Visual Resources. Short-term, negligible to minor, adverse and long-term, minor, beneficial reasonably foreseeable effects on land use would be expected from the Proposed Action in combination with the reasonably foreseeable future projects occurring on Fort Meade discussed in **Section 2.5**. Projects such as the East Campus Development and CNMF MOF would have similar impacts to construction under the Proposed Action. Construction would temporarily alter the aesthetics of the affected campuses, but upon completion would add a modernized look that is consistent with the administrative theme of the West and East Campuses. The East Campus development project and CNMF would enhance the visual aesthetics of the campus in line with the buildings developed under the Proposed Action. Additional facilities constructed would continue to use similar design elements, enhancing the overall aesthetics of the NSA campus.

3.2 Transportation

This section presents the affected environment and environmental consequences of the project as it relates to transportation, including existing conditions and environmental consequences.

3.2.1 Existing Conditions

The ROI for analysis of impacts on transportation includes the NSA campus, surrounding Fort Meade Garrison campus (particularly around the Mapes Tract), and the adjacent off-installation transportation corridors.

Fort Meade is located north of the Patuxent Freeway (MD 32) and east of the Baltimore–Washington Parkway (MD 295), on the western edge of Anne Arundel County, Maryland. It is favorably situated in proximity to regional arterial and freeway facilities. Primary highways serving Fort Meade include MD 295, Interstate (I-) 95, MD 32, MD 175, and Laurel-Fort Meade Road (MD 198). The following list describes each of these roadways:

- **The Baltimore–Washington Parkway (MD 295)** is located along the west side of Fort Meade. It traverses in a north–south direction connecting Baltimore to the north and Washington, D.C. to the south and carries two lanes of traffic in each direction.
- **I-95** is located approximately 4 miles west of Fort Meade. It traverses in a north–south direction connecting Baltimore and Washington, D.C. and carries four lanes of traffic in each direction.
- **The Patuxent Freeway (MD 32)** forms the southern boundary of Fort Meade. It connects I-95 to the northwest and beyond to I-97 to the southeast. It carries two lanes of traffic in each direction.
- **Annapolis Road (MD 175)** forms the northeastern boundary of Fort Meade connecting I-95 to the north and MD 32 to the south. It is a two- to four-lane road in the vicinity of Fort Meade with auxiliary lanes at intersections.
- **Laurel-Fort Meade Road (MD 198)** is a two-lane undivided roadway from east of the Baltimore–Washington Parkway to MD 32. It widens to a four-lane divided roadway west of the Baltimore–Washington Parkway. Traffic from MD 198 can continue onto Fort Meade via the Mapes Road Gate to the east.

MD 295 and MD 32 also provide direct access to the NSA campus on the installation. Smaller, internal access roads connect throughout the installation. The following describes the primary and secondary roadways on Fort Meade, with emphasis on the NSA campus:

- **Rockenbach Road (MD 713)** is a four-lane undivided roadway connecting MD 175 (Annapolis Road) to the east and Canine Road and the NSA campus to the west and borders the East Campus to the north.
- **Reece Road** is a two-lane undivided roadway connecting MD 175 to the east and Cooper Avenue to the west. Cooper Avenue is a two-lane undivided roadway east of the East Campus connecting Llewellyn Avenue to the south and Rockenbach Road to the north.
- **Mapes Road** is a two-lane undivided roadway connecting MD 175 to the east and the Mapes Road Gate to the west, and a four-lane divided roadway with roundabouts outside the installation from the gate to the MD 32 interchange and transitions into MD 198.
- **Canine Road** varies between a three- and four-lane road within the NSA campus. It has two connections with MD 32 (one west and one south of the East Campus) and borders the west side of the 9800 TSA.
- **Connector Road** varies between a two- and four-lane road from northwest of the campus off the Baltimore–Washington Parkway through vehicle control point (VCP) 2 onto the NSA campus.
- **Other primary roadways** on Fort Meade and the NSA campus include Clark, O'Brien, MacArthur, Ernie Pyle, and Samford Roads and Taylor Avenue.

Vehicle access to NSA is through the following six VCP access gates:

- **VCP1**: Canine Road (accessible from MD 32)
- **VCP2**: Connector Road (accessible from southbound Baltimore–Washington Parkway)

- **VCP5**: O'Brien Road near Perimeter Road
- **VCP6**: Samford Road (accessible from MD 32/Samford Road)
- **VCP7**: Perimeter Road (commercial vehicles)
- **VCP8**: Ultra Road (Fort Meade access) (NSA 2017)

Traffic for the Proposed Action would be expected to enter the NSA campus through VCP1, VCP2, and VCP6 and use Canine, Emory, Samford, and Venona Roads depending on the alternative selected. According to a 2023 Traffic Study for the NSA campus, the identified peak hours on NSA are 7:00 to 8:00 a.m. and 3:00 to 4:00 p.m. During the morning peak period on an average typical weekday, 6:00 to 7:00 a.m. has the highest volume entering VCP1 and VCP2 as well as the second-highest volume entering VCP6. During the afternoon peak period, slight delays are experienced at the Venona/O'Brien Roads intersection and at the Emory/Canine Roads intersection (DoD 2023). Traffic is concentrated on the west side of the campus during peak hours. A 2022 Feasibility Study was conducted as part of a separate action for the CNMF complex that identified existing 2019 level of service (LOS) at the NSA campus. Existing LOS was identified for morning and afternoon delays:

- **O'Brien/Emory Roads** and **Canine/Samford Roads** intersections, approximately one block to the east and southwest of the TSA, respectively, have free flow with minimal delay (LOS A) in the morning and afternoon.
- **Canine/Connector Roads** and **O'Brien/Venona Roads** intersections, approximately one block to the northwest and 0.4 miles southeast of the TSA respectively, have stable flow with slight delays (LOS B) in the morning and afternoon.
- **Canine/Emory Roads** intersection, at the southwestern corner of the TSA, is approaching unstable with tolerable delays (LOS D) in the morning and has stable flow with slight delays (LOS B) in the afternoon (USACE 2022).

Traffic congestion surrounding and on Fort Meade and the NSA campus is expected to worsen as development continues. Anne Arundel County has planned projects surrounding Fort Meade to help alleviate growing congestion including improvements to MD 32, I-97, I-95, and MD 295. As a planning tool for future development, NSA is currently developing an update of its 2019 *National Security Agency/Central Security Service (NSA/CSS) Washington* (*NSAW) Master Plan*, which was amended by the *2021 Central and West Campus Area Development Plan* (NSA 2025). A future traffic study for future development actions, including those identified in the updated NSA Campus Master Plan, would indicate if additional traffic measures or mitigation would be required for the installation.

Existing parking on the NSA campus consists of surface lots, ECPS1, and ECPS2. Overflow parking is in satellite locations accessible by shuttle and includes other government facilities and adjacent business parks. Two parking garages that are near the TSA are currently under construction or in design. ECPS3, currently under construction, will accommodate approximately 3,200 spaces with a potential expansion capacity of approximately 750 parking spaces. ECPS4, in design and planned for future construction, would accommodate approximately 2,100 parking spaces with a potential expansion capacity of approximately 1,700 parking spaces.

3.2.2 Environmental Consequences

This section presents the environmental consequences of the project as it relates to transportation, including evaluation criteria; Alternatives 1, 2, and 3 and the No Action Alternative; and reasonably foreseeable effects.

3.2.2.1 EVALUATION CRITERIA

Impacts on transportation are assessed with respect to the potential for disruption or improvement of current transportation patterns and systems, deterioration or improvement of existing LOSs, and changes in existing levels of transportation safety. Impacts may arise from physical changes (e.g., closing, rerouting, or creating roads), construction activity and introduction of construction-related traffic on local roads, or changes in daily traffic or peak-hour traffic volumes created by either direct or indirect workforce and population changes related to installation activities. Impacts on roadway capacities would be significant if a road with no history of capacity exceedances were forced to operate at or above its design capacity. Impacts would also be significant if additional traffic was added to roads already having significant traffic issues.

3.2.2.2 ALTERNATIVE 1

Short- and long-term, minor to moderate, adverse, and beneficial impacts on transportation would be expected under Alternative 1. It is assumed that commuter traffic would likely enter the NSA campus through VCP1, VCP2, and VCP6 and access the converted surface parking within the CCD project area via Canine and Emory Roads. If traffic were to enter through VCP5 and VCP8, commuter traffic would travel via Ultra, Venona, and O'Brien Roads.

The demolition and construction phases for Alternative 1 would require removal of debris and delivery of materials from and to the site. Construction-related traffic would temporarily increase the total existing traffic on the installation. However, many of the heavy construction vehicles would be driven to the site and kept on site for the duration of construction and demolition activities, resulting in relatively few additional trips. Potential increases in traffic volume associated with construction and demolition would be temporary, contributing to short-term, moderate, adverse impacts.

Long-term, minor to moderate, adverse impacts on transportation would be expected from approximately 1,285 additional personnel commuting from off-installation. While these additional commuters would adversely contribute to the existing traffic, the commuting duration and peak traffic times would be expected to remain relatively the same. Intersections in the vicinity of the project area currently operate at LOS B or higher, with the exception of the Canine/Emory Roads intersection, which operates at LOS D in the morning peak hour. Based on the 2023 Traffic Study for the NSA campus, 2031 conditions assume that the East Campus would be fully built out and includes roadway and intersection improvements. These future improvements would allow intersections on campus to operate at an LOS C or better during peak hours (DoD 2023). Therefore, during peak traffic periods, LOS for intersections near the Proposed Action would be expected to have stable flow with acceptable delays.

Sigaba Way would be extended through the existing TSA to connect the East and West Campuses, serving as a pedestrian and transit-only road, encouraging pedestrian

circulation and use of convenient mass transit, which would contribute long-term, beneficial impacts on the transportation network.

All areas of the TSA not proposed for construction of facilities would be converted to surface parking to account for the increase in personnel. In addition to the surface parking proposed under this alternative, ECPS3 (under construction) is planned, under a separate action, to accommodate approximately 3,200 spaces with a potential expansion capacity of approximately 750 parking spaces. ECPS4 (in design and planned for construction), under a separate action, would accommodate approximately 2,100 parking spaces with a potential expansion capacity of approximately 1,700 parking spaces. ECPS3, ECPS4, and other East Campus parking are approximately a 5-minute walk from the Proposed Action. Therefore, impacts on parking are expected to be negligible.

3.2.2.3 ALTERNATIVE 2

Impacts on transportation under Alternative 2 would be similar to but greater than those described for Alternative 1. Short- and long-term, moderate, adverse, and beneficial impacts on transportation would be expected. Similarly, potential temporary increases in traffic volume associated with construction and demolition would be temporary, contributing to short-term, moderate, adverse impacts.

Long-term, moderate, adverse impacts on transportation would be expected from the additional personnel commuting from off-installation. While this alternative would contribute approximately 2,935 additional commuters from outside Fort Meade, intersections across the campus would be expected to operate at LOS C or better with future roadway/intersection improvements by 2031. The extension of Sigaba Way would similarly be expected to contribute long-term, beneficial impacts on the transportation network.

Alternative 2 would include structured parking in the southwest portion of the TSA. A parking structure with the ability to accommodate personnel located in the MOSF, WBC, and CMSF and any parking displaced by the development would be constructed. The parking structure would be sized to accommodate CCD personnel, depending on the finalization of other ongoing parking facility projects associated with the East Campus. Remaining areas within the TSA would be converted to surface parking or green space. Therefore, long-term, beneficial impacts on parking are expected under this alternative.

3.2.2.4 ALTERNATIVE 3

Similar to Alternative 2, short- and long-term, moderate, adverse and beneficial impacts on transportation would be expected.

Potential increases in traffic volume associated with construction and demolition would be temporary, contributing to short-term, moderate, adverse impacts. Long-term, moderate, adverse impacts on transportation would be expected from the additional personnel commuting from off-installation. While this alternative would contribute approximately 3,685 additional commuters, intersections across the campus would be expected to operate at LOS C or better with future roadway/intersection improvements by 2031. The extension of Sigaba Way would similarly be expected to contribute long-term, beneficial impacts on the transportation network.

Under Alternative 3, the proposed WCPS would be a 15-minute walk to the CCD facilities and would accommodate 4,600 parking spaces, with 2,300 being designated to accommodate the CCD. The WCPS would be constructed north of the administrative facilities of NSA's West Campus in an existing surface parking lot currently with 1,700 spaces, bounded on the north and east by Canine Road. Upon completion of the WCPS, approximately 730 surface parking spaces would be retained adjacent to the parking structure. The WCPS would also support the short- and long-term parking requirements for the Central, West, and East Campuses resulting in long-term, beneficial impacts. The parking garage may require that the signal on Canine Road just south of the intersection of Canine and Connector Roads be relocated farther south to service the garage entry and exit point. Therefore, long-term, beneficial impacts on parking are expected under this alternative.

3.2.2.5 NO ACTION ALTERNATIVE

Under the No Action Alternative, CCD construction at Fort Meade would not occur. Operations would remain decentralized across the NSA campus and leased facilities off campus and the existing conditions discussed in **Section 3.2.1** would remain unchanged. Sigaba Way would not be extended from its current terminus, and long-term, minor adverse impact would be expected on the transportation network because of the lack of direct shuttle bus access from the Main and Central Campuses to the East Campus. Additionally, the WCPS would not be constructed, and the installation would be void of the 4,600 parking spaces proposed to support the short- and long-term parking requirements for the Central, West, and East Campuses. Therefore, long-term, minor, adverse impacts on the transportation network and parking would be expected.

3.2.2.6 REASONABLY FORESEEABLE EFFECTS

Concurrent construction of the Proposed Action with any of the reasonably foreseeable actions discussed in **Section 2.5** would require coordination with NSA and Fort Meade to reduce potential impacts on traffic flow and congestion. Short-term, moderate, adverse impacts would result from cumulative construction traffic and increased congestion. The reasonably foreseeable roadway improvement and VCP projects, ORAM, and East Campus development would help offset impacts from increased traffic associated with ongoing development on Fort Meade, including the Proposed Action, PAF, and CNMF. Based on the 2023 Traffic Study for the NSA campus, 2031 conditions assume that the East Campus would be fully built out and include roadway and intersection improvements allowing intersections on campus to operate at an LOS C and the reasonably foreseeable project contribute to this projection (DoD 2023). Therefore, short-term, moderate, adverse and long-term, moderate, adverse and beneficial impacts on transportation would be expected from the Proposed Action when combined with the reasonably foreseeable actions.

3.3 Noise

This section presents the affected environment and environmental consequences of the project as it relates to noise, including existing conditions and environmental consequences.

3.3.1 Existing Conditions

The ROI for the analysis of impacts on noise includes the project area and surrounding areas.

The main source of noise on Fort Meade is vehicular traffic. Bound by the Baltimore–Washington Parkway (MD 295) to the northwest, Annapolis Road (MD 175) to the northeast, and the Patuxent Freeway (MD 32) to the south and west, Fort Meade's other significant nearby transportation arteries include U.S. Route 1 and I-95, which run parallel to and approximately 3 and 4 miles west of the Baltimore–Washington Parkway, respectively. I-97, connecting Baltimore to Annapolis, is several miles to the east. MD 295 south- and north-bound provide direct access to the NSA campus via ramps onto Connector Road and Canine Road, respectively. MD 32 also provides direct access onto Canine Road in the northern portion of the NSA campus and to the Canine/Samford Road intersection to the south. Smaller, internal access roads connect throughout Fort Meade. Other minor, low noise-producing sources include heating, ventilation, and air conditioning (HVAC) systems; utility/generator plants; military unit physical training; lawn maintenance; snow removal; a firing range located south of MD 32; and construction activities.

A noise analysis conducted for Fort Meade and NSA in 2009 estimated ambient noise levels at several locations to be between 55 and 65 A-weighted decibels (dBA) day-night average sound level (DNL), depending on the noise-sensitive receptor's proximity to major roadways (NSA 2009). Since the 2009 study no major sources of noise have been added to Fort Meade, but traffic levels and associated noise have increased. It is unlikely that the additional traffic noise would increase the ambient noise levels beyond 65 dBA DNL. Therefore, present ambient noise levels at Fort Meade likely still fall into the "normally acceptable" range, as defined by U.S. Army and U.S. Department of Housing and Urban Development criteria.

The closest on-installation noise-sensitive receptor to the Proposed Action is the Midway Commons Housing Community at 3rd Cavalry Road, with the nearest housing units approximately 500 feet north of the TSA and 500 feet east of the WCPS site. Midway Commons is a military housing community for active-duty personnel and/or their families. Within the Midway Commons Housing Community are two basketball courts, three playgrounds, the Argonne Hills Chapel Center, Midway Commons Community Center, and Pershing Hill Elementary School. These community amenities are approximately 1,100 feet or farther from the project area. Forested areas located between the TSA and WCPS site and the closest on-installation noise sensitive receptors provide a natural vegetative noise buffer. Buildings surrounding the project area are part of the installation's administrative complexes and are not considered sensitive receptors.

The closest off-installation noise-sensitive receptors are the Patuxent Research Refuge and the Capital Guardian Youth Challenge Academy, the boundaries of which are approximately 5,000 feet southeast and 1,800 feet east of the project area, respectively. Noise levels at locations of a distance of 775 feet from general construction activities and 4,725 from pile-driving activities would be less than 65 decibels (dB). Therefore, potential noise impacts on the Patuxent Research Refuge are not discussed further.

3.3.2 Environmental Consequences

This section presents the environmental consequences of the project as it relates to noise, including evaluation criteria; Alternatives 1, 2, and 3 and the No Action Alternative; and reasonably foreseeable effects.

3.3.2.1 EVALUATION CRITERIA

Analysis of potential noise impacts is based on changes to the ambient noise environment or potential changes to land compatibility from noise caused by implementation of the Proposed Action. Impacts on noise would be considered significant if a proposed action were to result in the violation of applicable federal, State of Maryland (State), or local noise regulations; create appreciable areas of incompatible land use outside the installation boundary; or result in noise that would negatively affect the health of the community.

3.3.2.2 ALTERNATIVE 1

Short-term, minor to moderate, adverse impacts on noise would be expected from the operation of heavy equipment and construction vehicles, increased construction-related traffic along the main routes transporting work crews and materials to the project area, the proposed construction and demolition activities, and hauling debris to local landfills.

It is expected that different types of construction equipment would be operated intermittently and for short durations under the Proposed Action. Anticipated noise levels at receptor locations were estimated in accordance with the 2018 *OSHA Technical Manual* (OTM) (OSHA 2018). Calculations conservatively assume a cumulative noise level of 88.7 dB for operation of equipment and construction activities at 50 feet, per United States Environmental Protection Agency (USEPA)-reported dB levels (USEPA 1971) for types of equipment that would be operated at the project area, and 105 dB for maximum pile-driving noise. At receptor distances of 775 feet or greater from a proposed development action, general construction noise levels would be less than 65 dB. During pile-driving activities noise levels would be less than 65 dB at receptor distances of approximately 4,725 feet.

The on-installation noise-sensitive receptor that would be located nearest to the project area and susceptible to increases in ambient noise is the Midway Commons Housing Community, with housing units within 500 to 770 feet. The highest estimated noise level would be 69 dBA, measured from the northwestern corner of the TSA to the southeastern corner of the closest housing unit along Antolak Street. If pile-driving is required, calculated noise at the nearest housing units could temporarily reach 85 dB and all noise-sensitive receptors less than 4,725 feet would be susceptible to increases in ambient noise. However, pile-driving activities, if required, would be temporary, during the daytime, and limited to certain periods during construction. Individuals working, recreating, or outside accessing buildings at locations near the project area may notice or be bothered by the noise. The perceived loudness of construction activities would reduce with distance and when individuals are inside buildings so that construction-related noise would not be perceptible to some sensitive receptors. Construction would typically occur during daytime hours (7 a.m. to 5 p.m.) and based on distances to the closest residences and noise controls, sleep disturbance from construction-related activities would not occur. Adjacent to and just south of the Midway Commons Housing

Community is a 200-foot-wide forested buffer that runs along Rockenbach Road. Across Rockenbach Road north of the TSA is an additional 140-foot-wide forested buffer. The presence of the vegetative buffers provides an existing noise barrier that would reflect, refract, and/or absorb noise as it travels from the source. The highest estimated noise levels do not account for these buffers; it would be expected that the buffers would contribute to noise reduction.

All construction and demolition activities would occur within the installation's boundary where traffic and other types of military operational noise are typical and all related construction noise impacts would cease upon project completion. Operation of construction vehicles transporting equipment, materials, and debris to the installation, regardless of the alternative, would temporarily add to existing traffic noise and be anticipated on- and off-installation. Noise controls would be used to the extent practicable to manage noise reduction. Noise-reducing measures, such as exhaust mufflers, can reduce the noise level by as much as 10 dBA (USEPA 1971).

No long-term noise impacts are expected from operation of the developed facilities and infrastructure. Following completion, commuter vehicle traffic noise along existing commuter routes on and off the installation could increase slightly from the proposed addition of 1,285 potential off-installation commuters. Noise volumes would, however, not appreciably change because the commuting time frame would be the same—peak morning traffic at the start of the workday and evening traffic at the end of the workday.

3.3.2.3 ALTERNATIVE 2

Impacts under Alternative 2 would be similar to those described for Alternative 1. Construction of the CMSF in the southeast portion of the TSA would not increase the cumulative general construction noise level of 88.7 dB. The nearest sensitive receptor would remain the Midway Commons Housing Community, with the highest estimated noise level at 69 dBA, and 85 dB if pile driving is required, measured from the northwestern corner of the TSA to the southeastern corner of the closest housing unit along Antolak Street.

The addition of the CMSF under Alternative 2 would result in a longer duration of the construction noise as well as increase the number of potential off-installation commuters to 2,935; however, the associated commuters would not appreciably change noise volumes because the commuting time frame would continue to be during peak morning traffic at the start of the workday and evening traffic at the end of the workday.

3.3.2.4 ALTERNATIVE 3

Impacts under Alternative 3 would be similar to, but slightly greater than, those described for Alternative 2. Addition of the IWSC in the northwest portion of the TSA and the WCPS north of the administrative facilities of NSA's West Campus would result in a longer duration of construction noise, but would not increase the cumulative general construction noise level of 88.7 dB. The Midway Commons Housing Community residential units nearest the TSA would be expected to experience short-term or extended noise levels from construction activities that approach 69 dBA and 85 dB, if pile driving is required. The highest estimated noise level at the closest noise-sensitive receptor to the WCPS site, within 500 to 770 feet along Eubanks Court in the western

portion of the Midway Commons Housing Community, would be 69 dBA. Pile driving could also occur for construction of the WCPS, and the calculated noise at the nearest housing unit within the Midway Commons Housing Community could temporarily reach 87 dB. Noise or vibration from construction activities, such as pile driving, at the WCPS site could likely be heard or felt at surrounding buildings. Noise-reducing measures, such as exhaust mufflers, can reduce the noise level by as much as 10 dBA (USEPA 1971). Pile-driving activities would be temporary and limited to certain periods during construction. Feasible noise controls and noise abatement measures to reduce the noise to the extent practicable would be used during the construction phase to reduce the effects of construction noise. Given the temporary nature of proposed construction and demolition including pile driving, distance to nearby noise-sensitive areas, presence of vegetative buffers, and use of noise abatement, these impacts would be minor to moderate.

The addition of the IWSC under Alternative 3 would contribute to an increase in potential off-installation commuters to 3,685, but noise volumes would not appreciably change because the commuting time frame would remain during peak morning and evening traffic.

3.3.2.5 NO ACTION ALTERNATIVE

Under the No Action Alternative, CCD construction at Fort Meade would not occur. Operations would remain decentralized across the NSA campus and leased facilities off campus and the existing conditions discussed in **Section 3.3.1** would remain unchanged. Therefore, no impacts on the noise environment would be expected.

3.3.2.6 REASONABLY FORESEEABLE EFFECTS

If construction of the CNMF MOF, identified as a reasonably foreseeable action in **Section 2.5**, were to be implemented concurrently with any of the construction phases of the Proposed Action, impacts on the noise environment in the immediate area from heavy equipment use and construction traffic could increase to moderate but would remain temporary. Best management practices (BMPs), such as noise-reducing measures, controls, and abatement, would be implemented during the construction phase to reduce noise to the extent practicable. The existing ambient noise levels or types of noise would not be expected to change under the Proposed Action following construction. Therefore, short-term, minor to moderate, reasonably foreseeable effects would be expected from the Proposed Action in combination with the reasonably foreseeable actions.

3.4 Air Quality

This section presents the affected environment and environmental consequences of the project as it relates to air quality, including existing conditions and environmental consequences.

3.4.1 Existing Conditions

The ROI for the analysis of impacts on air quality includes the western portion of Anne Arundel County.

National Ambient Air Quality Standards (NAAQS) and Attainment Status. USEPA Region 3 and the Maryland Department of the Environment (MDE) regulate air quality in Maryland. The NSA campus is in Anne Arundel County, which is within the Metropolitan Baltimore Intrastate Air Quality Control Region (40 Code of Federal Regulations [CFR] 81.28). Anne Arundel County is also within the ozone (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 the 2008 8-hour O_3 NAAQS and serious nonattainment for the 2015 8-hour O_3 NAAQS. In addition, the NSA campus is in the portion of Anne Arundel County that is designated as nonattainment for the 2010 sulfur dioxide (SO_2) NAAQS (USEPA 2025a, 2025b). Federal actions occurring in these nonattainment areas are required to comply with State Implementation Plans (SIPs) that include the *Baltimore, MD Ozone Moderate Nonattainment Area State Implementation Plan (SIP) For the 0.070 ppm National Ambient Air Quality Standard for Ozone* (MDE 2023) *and 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). On December 6, 2024, USEPA issued a final rule (Federal Register Volume 89 page 96905) indicating that the Anne Arundel and Baltimore County SO_2 nonattainment area attained the 2010 1-hour SO_2 NAAQS based on certified 2018–2020 ambient air quality monitoring data, relevant modeling analysis, and emissions inventory information. The final rule is effective as of January 6, 2025 (40 CFR 52.1082[m]). The area remains designated as nonattainment until the State formally requests redesignation of the area to attainment and USEPA formally accepts a State-submitted 10-year maintenance plan (Federal Register Volume 87 page 66086). Anne Arundel County is designated as attainment or unclassified for all other criteria pollutants (USEPA 2025a).

Based on the attainment status for the area containing the NSA campus, the General Conformity Rule is potentially applicable to emissions of volatile organic compounds (VOCs) and nitrogen oxide (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 thresholds for these pollutants are 50 tons per year (tpy) for VOCs and NO_X, and 100 tpy for SO_X.

Local Ambient Air Quality. The most recent air pollutant concentrations measured near the NSA campus are shown in **Table 3-1**. Air quality design values are used to indicate compliance with the NAAQS based on 3-year averages, which is the basis for USEPA attainment and nonattainment designations. **Table 3-2** includes the most recent available emissions inventory for Anne Arundel County.

The NSA campus is considered a major source of air emissions, as defined by 40 CFR 70 and Code of Maryland Regulations (COMAR) 26.11.03, meaning that the facility has the potential to emit air pollutants above major source thresholds. Therefore, NSA operates under a Title V air operating permit (24-003-0317) as issued by MDE. Stationary sources of air emissions at the NSA campus include boilers, emergency generators, incinerators, classified-material reclamation furnaces, and painting and plating operations (MDE 2020b). The reported campus-wide air emissions from permitted stationary sources for 2023 are shown in **Table 3-3**.

Table 3-1. 2023 Air Pollutant Concentrations Near the NSA Campus

Criteria Pollutant	Averaging Period	Primary NAAQS	2023 Design Value
Carbon monoxide (CO)	8-hour	9 ppm	0.9 ppm [a]
Nitrogen dioxide (NO_2)	1-hour	100 ppb	45 ppb [a]
O_3	8-hour	0.070 ppm	0.066 ppm [b]
Particulate matter ($PM_{2.5}$)[d]	Annual	9 µg/m^3	7.4 µg/m^3 [a]
$PM_{2.5}$	24-hour	35 µg/m^3	20 µg/m^3 [a]
PM_{10}	24-hour	150 µg/m^3	0.0 µg/m^3 [b]
Lead (Pb)	Rolling 3-month average	0.15 µg/m^3	Not available
SO_2	1-hour	75 ppb	4 ppb [c]

Source: USEPA 2024a.
Key: µg/m^3 = micrograms per cubic meter; ppb = parts per billion; ppm = parts per million.
[a] Design value for Howard County. Monitor located approximately 4.5 miles northwest of the NSA campus.
[b] Design value for Anne Arundel County. Monitory located approximately 8 miles northeast of the NSA campus.
[c] Design value for the Anne Arundel and Baltimore County SO_2 nonattainment area.
[d] Suspended particulate matter is measured as less than or equal to 10 microns in diameter (PM_{10}) and less than or equal to 2.5 micros in diameter ($PM_{2.5}$)

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

County	NO_X (tpy)	VOC (tpy)	CO (tpy)	SO_2 (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Pb (tpy)	CO_2e[a] (tpy)
Anne Arundel	7,961	18,084	50,014	2,285	4,318	1,892	0.3	4,930,793

Source: USEPA 2023.
[a] To calculate the total carbon dioxide equivalent (CO_2e) emissions, all greenhouse gases (GHGs) are multiplied by their global warming potential and the results are added together. Global warming potentials are published in 40 CFR 98 (revised April 2024). The global warming potentials used to calculate CO_2e are as follows: CO_2 = 1; methane = 28; nitrous oxide = 265; sulfur hexafluoride = 23,500.

Table 3-3. 2023 Emissions from Stationary Sources at the NSA Campus

Year	NO_X (tpy)	VOC (tpy)	CO (tpy)	SO_X (tpy)	PM_{10} (tpy)	$PM_{2.5}$[a] (tpy)	Pb (tpy)	CO_2e[b] (tpy)
2023	23.31	3.23	9.82	0.58	0.82	0.22	0.00	19,802.43

Source: NSA 2024c.
[a] Includes filterable $PM_{2.5}$ and condensable particulate matter.
[b] To calculate the total CO_2e, all GHGs are multiplied by their global warming potential and the results are added together. Global warming potentials are published in 40 CFR 98 (revised April 2024). The global warming potentials used to calculate CO_2e are as follows: CO_2 = 1; methane = 28; nitrous oxide = 265.

Permitted stationary sources of air emissions within the Central Campus project area include one water heater, two boilers, and two generators at Building 9802; two boilers at Building 9803; and one boiler at Building 9804.

Stationary sources of air emissions at Building 9828, which is just east of the Six Hats Dining Hall, include one generator. No permitted sources of air emissions are located within the WCPS portion of the project area (MDE 2020b, Fort Meade 2022a).

Weather Trends and GHG Emissions. The climate in central Maryland is affected by its proximity to 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 in the hottest month of July and an average low temperature of 25.4 degrees

Fahrenheit 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 2025). Weather trends in central Maryland include increasing temperatures, more frequent heat waves, increased storm intensity, and changes to precipitation patterns, which can compromise the resilience and efficiency of built infrastructure.

In 2020, Anne Arundel County produced 4,777,329 tons of GHGs (composed of carbon dioxide [CO_2], methane, nitrous oxide, and sulfur hexafluoride), equivalent to 4,930,793 tons of CO_2e. In the same year, Maryland produced approximately 40.3 million tons of CO_2e. Anne Arundel County's CO_2e emissions comprised approximately 12 percent of the state's CO_2e emissions in 2020 (USEPA 2023).

3.4.2 Environmental Consequences

This section presents the environmental consequences of the project as it relates to air quality, including evaluation criteria; Alternatives 1, 2, and 3 and the No Action Alternative; and reasonably foreseeable effects.

3.4.2.1 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 Prevention of Significant Deterioration (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 NO_X, and 100 tpy for 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.

USEPA's PSD permitting change threshold of 75,000 tpy (68,039 metric tpy) of CO_2e was used as a significance indicator for GHG impacts. Any action with net GHG emissions below the indicator is considered too insignificant to warrant any further discussion. In addition, this analysis qualitatively assesses whether elements of the Proposed Action would be affected by regional weather trends.

3.4.2.2 ALTERNATIVE 1

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, demolition and construction of buildings and infrastructure, heavy-duty diesel vehicles hauling supplies and debris to and from the Central Campus, workers commuting daily to and from the Central Campus 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 FY31 through FY32 (October 2030 through September 2032). The estimated net change in annual air emissions from Alternative 1 is shown in **Table 3-4**. Detailed emissions calculations are included in **Appendix B**. The net 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 Change in Annual Emissions from Alternative 1

Year	NO_X (tpy)	VOC (tpy)	CO (tpy)	SO_X (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Pb (tpy)	CO_2e (tpy)
2030 (construction)	0.651	0.064	0.784	0.002	14.605	0.022	<0.001	291.010
2031 (construction)	4.737	0.400	5.672	0.012	1.508	0.141	<0.001	2,525.395
2032 (construction)	3.616	10.940	4.692	0.009	0.194	0.110	<0.001	1,739.447
2033 and later (operations)	4.842	2.067	22.979	0.031	0.457	0.361	<0.001	7,456.032
Maximum	**4.842**	**10.940**	**22.979**	**0.031**	**14.605**	**0.361**	**<0.001**	**7,456.032**
***de minimis* level or PSD threshold**	**50**	**50**	**250**	**100**	**250**	**250**	**25**	**75,000**
Exceeds threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Many criteria pollutants are produced from internal-combustion engines such as those found in gas-powered equipment and generators. Particulate matter, such as fugitive dust, is produced from earth-moving activities, demolition, and vehicles and equipment traveling over paved and unpaved roads. Construction activities would incorporate BMPs and environmental control measures (e.g., wetting the ground surface, using diesel particulate filters in vehicles and equipment, using VOC control technologies for surface coatings) to minimize fugitive dust and other criteria pollutant emissions. Implementation of BMPs and other environmental control measures could reduce particulate matter emissions from a construction site by approximately 50 percent (USEPA 1985).

Alternative 1 would result in long-term, minor, adverse impacts on air quality from operation of the new MOSF and WBC and the additional 1,285 off-site and future personnel who would relocate to the NSA campus and commute to and from the Central Campus daily. Air emissions would be directly produced from a new natural gas–fired boiler required to heat the MOSF and a new diesel life-safety generator that would be installed at the MOSF to provide backup power, which would increase emissions from stationary sources. Long-term, operational air emissions would begin following the construction period and would continue indefinitely. In addition, heating would no longer be needed for demolished buildings (Buildings 9802, 9803, 9804, and 9805; Six Hats Dining Hall; and Eagle Fitness Center) following demolition, which would reduce stationary-source air emissions. The Title V permit for the NSA campus would be

revised and new stationary sources of air emissions would be registered with MDE, as required. The estimated net change in annual operational air emissions from Alternative 1 is summarized in **Table 3-4**. The net increase in operational air emissions would not exceed the *de minimis* level or PSD thresholds. Therefore, a general conformity determination is not required. 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**.

The Proposed Action does not involve the manufacture, modification, or regulation of new motor vehicles or engines and therefore does not fall under the regulatory scope of Section 202 of the Clean Air Act. While indirect mobile source emissions would occur from the additional personnel (i.e., 1,285 under Alternative 1; 2,935 under Alternative 2; and 3,685 under Alternative 3) commuting to and from the NSA campus daily, these emissions would not affect compliance with Section 202 standards or require action by NSA under Section 202.

GHG Emissions and Weather Trends. As shown in **Table 3-4**, construction under Alternative 1 would produce a total of approximately 4,556 tons of CO_2e. Operations under Alternative 1 would result in a net increase of annual CO_2e emissions by 7,456 tpy, which represents approximately 0.2 percent of annual CO_2e emissions in Anne Arundel County and approximately 0.02 percent of annual CO_2e emissions in Maryland.

As shown in **Table 3-4**, the annual net change of GHG emissions from Alternative 1 would not exceed the 75,000 tpy PSD threshold for CO_2e; therefore, net GHG emissions would be considered insignificant. **Table 3-5** provides a relative comparison of the Proposed Action's net annual operational GHG emissions versus state and county projected emissions.

Table 3-5. Relative Comparison of the Proposed Action's Estimated Net Annual Operational GHG Emissions

Reference Scale	CO_2e (tpy)	Comparison to Reference Scale
Maryland	40,285,695[a]	540,310%
Anne Arundel County	4,930,793[a]	66,132%
Alternative 1	7,456.032	100%
Alternative 2	14,605.621	196%
Alternative 3	21,224.998	285%
No Action Alternative	0.0	0%

Source: USEPA 2023.

[a] To calculate the total CO_2e, all GHGs are multiplied by their heat-trapping ability, as published in 40 CFR 98 (revised April 2024) (CO_2 = 1; methane = 28; nitrous oxide = 265; sulfur hexafluoride = 23,500), and the results are added together.

The weather trend with the greatest potential to affect the Proposed Action and mission functions is increasing temperatures, which can lead to greater air conditioning and utility demands and has the potential to damage infrastructure. Enhanced energy efficiency from replacement of outdated buildings, modern building systems, modern construction materials, and other sustainable building practices could result in lower energy demand when compared to existing conditions and indirectly reduce energy production/demand.

3.4.2.3 ALTERNATIVE 2

As with Alternative 1, Alternative 2 would result in short-term, minor, adverse impacts on air quality from construction activities over the 2-year construction period. Emissions from Alternative 2 would be greater than those from Alternative 1 because it would also include construction of the CMSF and a parking structure for Central Campus personnel. An estimated 1,650 personnel in addition to the 1,285 personnel under Alternative 1 would also be included, for a total of 2,935 additional personnel from outside Fort Meade reporting to CCD facilities. The estimated net change in annual air emissions from Alternative 2 is shown in **Table 3-6**. The annual air emissions from construction under Alternative 2 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 3-6. Estimated Net Change in Annual Emissions from Alternative 2

Year	NO_X (tpy)	VOC (tpy)	CO (tpy)	SO_X (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Pb (tpy)	CO_2e (tpy)
2030 (construction)	0.651	0.064	0.784	0.002	14.605	0.022	<0.001	291.010
2031 (construction)	6.922	0.586	8.406	0.018	2.033	0.208	<0.001	3,701.560
2032 (construction)	7.067	20.672	8.918	0.019	1.220	0.216	<0.001	3,771.006
2033 (construction and operations)	6.294	8.722	24.834	0.035	0.546	0.406	<0.001	8,297.095
2034 and later (operations)	9.124	4.608	49.965	0.082	0.917	0.700	<0.001	14,605.621
Maximum	**9.124**	**20.672**	**49.965**	**0.082**	**14.605**	**0.700**	**<0.001**	**14,605.621**
***de minimis* level or PSD threshold**	**50**	**50**	**250**	**100**	**250**	**250**	**25**	**75,000**
Exceeds threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Operational air emissions under Alternative 2 would be similar to those described for Alternative 1 but would be greater because of the addition of the CMSF and 1,650 additional personnel whose jobs would relocate to the NSA campus and commute to and from the Central Campus daily. The estimated net change in annual operational air emissions from Alternative 2 is summarized in **Table 3-6**. The net increase in operational air emissions would not exceed the *de minimis* level or PSD thresholds. Therefore, a general conformity determination is not required. As such, long-term, adverse impacts from Alternative 2 would not be significant.

GHG Emissions and Weather Trends. Construction under Alternative 2 would produce a total of approximately 8,606 tons of CO_2e, which is 89 percent greater than the GHG emissions that would be produced from Alternative 1 over the same construction period. Operations under Alternative 2 would result in a net increase of annual CO_2e emissions by 14,606 tpy, which represents approximately 0.2 percent of

annual CO_2e emissions in Anne Arundel County and approximately 0.02 percent of annual CO_2e emissions in Maryland.

As shown in **Table 3-6**, the annual net change of GHG emissions from Alternative 2 would not exceed the 75,000 tpy PSD threshold for CO_2e; therefore, net GHG emissions are considered insignificant. As shown in **Table 3-6**, annual net operational GHG emissions from Alternative 2 would be 94 percent greater than those from Alternative 1.

As described for Alternative 1, the ongoing changes to GHG emissions in Maryland described in **Section 3.4.1** are also unlikely to affect the ability to implement Alternative 2.

3.4.2.4 ALTERNATIVE 3

As with Alternatives 1 and 2, Alternative 3 would result in short-term, minor, adverse impacts on air quality from construction activities. Emissions from Alternative 3 would be greater than those from Alternative 2 because it would also include construction of the IWSC from FY32 through FY35 and the larger WCPS instead of the Central Campus parking structure. An estimated 750 personnel in addition to the 2,935 personnel under Alternative 2 would also be included, for a total of 3,685 additional personnel from outside Fort Meade reporting to CCD facilities. The estimated net change in annual air emissions from Alternative 3 is shown in **Table 3-7**. The annual air emissions from construction under Alternative 3 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.

The criteria pollutant with the greatest potential to exceed a *de minimis* level threshold from Alternative 3 is VOCs. The highest amount of VOCs would be produced during surface coating and painting application. BMPs and environmental control measures that could reduce VOC emissions include use of low- or no-VOC paints; use of high-efficiency spray systems, such as high-volume low-pressure or airless sprayers that atomize paint more effectively to reduce overspray; installation of ventilation systems or scrubbers that capture and treat VOCs that are released into the air; and use of paints with faster drying times to reduce the risk of evaporation during drying.

Operational air emissions under Alternative 3 would be similar to those described for Alternatives 1 and 2 but would be greater because of the additional facilities and personnel whose jobs would relocate to the NSA campus and the additional generator for the WCPS. The estimated net change in annual operational air emissions from Alternative 3 is included in **Table 3-7**. The net increase in operational air emissions would not exceed the *de minimis* level or PSD thresholds. Therefore, a general conformity determination is not required. As such, long-term, adverse impacts from Alternative 3 would not be significant.

GHG Emissions and Weather Trends. Construction under Alternative 3 would produce a total of approximately 14,774 tons of CO_2e, which is 224 percent and 72 percent greater than the GHG emissions that would be produced by construction under Alternatives 1 and 2, respectively.

Table 3-7. Estimated Net Change in Annual Emissions from Alternative 3

Year	NO_X (tpy)	VOC (tpy)	CO (tpy)	SO_X (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Pb (tpy)	CO_2e (tpy)
2030 (construction)	1.517	0.152	1.700	0.004	21.589	0.053	<0.001	610.680
2031 (construction)	9.499	0.726	10.701	0.024	2.460	0.290	<0.001	5,521.476
2032 (construction)	10.242	30.337	12.538	0.027	1.381	0.302	<0.001	5,697.846
2033 (construction and operations)	8.004	8.892	27.225	0.045	0.591	0.447	<0.001	9,132.647
2034 (construction and operations)	10.834	4.778	52.356	0.091	0.962	0.742	<0.001	15,441.172
2035 (construction and operations)	10.070	12.826	51.301	0.089	0.944	0.726	<0.001	15,046.443
2036 and later (operations)	13.667	5.776	63.890	0.120	1.267	1.047	<0.001	21,224.998
Maximum	13.667	30.337	63.890	0.120	21.589	1.047	<0.001	21,224.998
***de minimis* level or PSD threshold**	**50**	**50**	**250**	**100**	**250**	**250**	**25**	**75,000**
Exceeds threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Operations under Alternative 3 would result in a net increase of annual CO_2e emissions by 21,225 tpy, which represents approximately 0.4 percent of annual CO_2e emissions in Anne Arundel County and approximately 0.05 percent of annual CO_2e emissions in Maryland.

As shown in **Table 3-7**, the annual net change of GHG emissions from Alternative 3 would not exceed the 75,000 tpy PSD threshold for CO_2e; therefore, net GHG emissions would be considered insignificant. As shown in **Table 3-5**, annual net operational GHG emissions from Alternative 3 would be 158 percent greater than those from Alternative 1.

As described for Alternative 1, the ongoing changes to GHG emissions in Maryland described in **Section 3.4.1** are unlikely to affect the ability to implement Alternative 3.

3.4.2.5 NO ACTION ALTERNATIVE

Under the No Action Alternative, CCD construction at Fort Meade would not occur. Operations would remain decentralized across the NSA campus and leased facilities off campus and the existing conditions discussed in **Section 3.4.1** would remain unchanged. Therefore, no impacts on air quality would be expected.

3.4.2.6 REASONABLY FORESEEABLE EFFECTS

Air emissions and GHGs would be produced from all reasonably foreseeable future projects identified in **Section 2.5**. The Proposed Action would result in short- and long-term, minor, adverse impacts on air quality from construction/demolition and operations. Reasonably foreseeable construction within Fort Meade that coincides with the construction period for the Proposed Action would produce emissions of criteria pollutants and GHGs that, 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, reasonably foreseeable effects. BMPs and environmental control measures would be implemented to minimize air emissions from the reasonably foreseeable future actions and reduce the potential for reasonably foreseeable effects on air quality. All such occurrences of additive air emissions during construction would be temporary in nature and cease upon completion of the reasonably foreseeable actions. Operational air emissions would occur from heating systems for new facilities and added vehicle traffic from new personnel on the NSA campus and Fort Meade Garrison for the ECB, PAF, and CNMF MOF projects. These air emissions likely would be negligible compared to the existing emissions potential for Fort Meade and the NSA campus. Because emissions from the Proposed Action would not be considered significant, reasonably foreseeable effects on air quality from the Proposed Action, when combined with other reasonably foreseeable actions, would not be significant.

Ongoing changes to climate patterns in Maryland are described in **Section 3.4.1**. These changes are unlikely to adversely impact construction and operation of the facilities associated with the reasonably foreseeable actions within and outside Fort Meade and the NSA campus.

3.5 Geological Resources

This section presents the affected environment and environmental consequences of the project as it relates to geological resources, including existing conditions and environmental consequences.

3.5.1 Existing Conditions

The ROI for the analysis of impacts on geological resources includes the project area.

Physiography and Topography. The installation and Anne Arundel County lie within the Atlantic Coastal Plain Physiographic Province of Maryland. The Atlantic Coastal Plain is characterized by unconsolidated sediments, including gravel, sand, silt, and clay (MGS 2002). The project area ranges in elevation from approximately 177 to 190 feet mean sea level with slopes between 0.4 and 1.4 percent. Additionally, the proposed WCPS project area under Alternative 3 has an elevation of approximately 183 feet mean sea level and a slope of 0.9 percent (MD GIO 2025).

Geology. The geologic history of the Fort Meade region is characterized by mountain-building processes and the cyclical opening and closing of a proto-Atlantic Ocean. During the Cenozoic Era, the Blue Ridge–South Mountain anticlinorium began to erode, and the Atlantic Coastal Plain sediments were deposited in lower elevations (MGS 2002). Sediments underlying the region 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), the Arundel Clay (0 to 100 feet thick), and the Patuxent Formation (0 to 250 feet thick) (MGS 2002).

Soils. Two soil types have been mapped within the project area: Downer-Hammonton-Urban Land complex, 0 to 5 percent slopes, and Urban Land. Downer-Hammonton-Urban Land complex is described as well drained soils with negligible to high runoff rates and moderate or moderately rapid permeability. Urban Land soil is classified as highly disturbed and retains little of its original properties (USDA NRCS 2025). No prime farmland is present in the CCD project area.

Geologic Hazards. The U.S. Geological Survey has produced seismic hazard maps based on current information about the rate at which earthquakes occur in different areas and on how far strong shaking extends from the quake source. The hazard maps show the levels of horizontal shaking that have a 2-in-100 chance of being exceeded in a 50-year period. Shaking is expressed as a percentage of the force of gravity (percent g) and is proportional to the hazard faced by a particular type of building. According to the 2014 Seismic Hazard Map for Maryland, both Fort Meade and Anne Arundel County have a very low seismic hazard rating of about 6 percent g (MGS 2002).

3.5.2 Environmental Consequences

This section presents the environmental consequences of the project as it relates to geological resources, including evaluation criteria; Alternatives 1, 2, and 3 and the No Action Alternative; and reasonably foreseeable effects.

3.5.2.1 EVALUATION CRITERIA

Protection of unique geological features and minimization of soil erosion and loss of productivity are considered when evaluating potential effects of the 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, including prime farmland and other unique soils, within the environment.

3.5.2.2 ALTERNATIVE 1

Short- and long-term, negligible to minor, adverse impacts on soil and geology could be expected from ground disturbance under Alternative 1. This alternative would result in the demolition of six buildings, extension of Sigaba Way, and conversion of the rest of the project area to surface parking.

This would result in disturbance to the soils from excavation, grading, and compaction associated with demolition and construction. Because these sites have been previously disturbed, the impacts would be minor. Loss of soil structure because of compaction from foot and vehicle 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 help minimize the stormwater discharge. The majority of the proposed facilities would be constructed on existing impervious surfaces with proper drainage techniques. Any remaining open areas affected by construction would be reseeded, as appropriate.

Site-specific soil surveys should be conducted, as appropriate, prior to implementation of the Proposed Action to determine the breadth and severity of any engineering limitations. Per COMAR 26.17.1, *Erosion and Sediment Control*, an ESCP would be required for the Proposed Action, as 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, no major, adverse impacts on soils would be anticipated. BMPs could 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 would occur with MDE's Air and Radiation Management Administration on whether soil remediation would be required and to obtain the appropriate permit, as applicable.

No impacts would be expected from geologic hazards as a result of this alternative. It would be very unlikely for a geologic event to occur at the location of, or near, the project area because geologic events are not very common at Fort Meade or the surrounding area. If a geologic event were to happen, it would most likely be minor in nature and would not be expected to cause significant damage; therefore, no impacts from geological hazards would be expected.

3.5.2.3 ALTERNATIVE 2

Impacts under Alternative 2 would be similar to, but slightly greater than, those described for Alternative 1. All development proposed under Alternative 1 would be included in Alternative 2, as well as construction of the CMSF (500,000 ft^2), and structured parking in place of surface parking, resulting in additional soil disturbance and impervious surface. As for Alternative 1, soil erosion and sediment production would be minimized for all construction activities by following an approved ESCP. Use of stormwater control measures that favor re-infiltration would help minimize the stormwater discharge. Construction BMPs would also be implemented to minimize soil erosion.

3.5.2.4 ALTERNATIVE 3

Impacts under Alternative 3 would be similar to, but slightly greater than, those described for Alternatives 1 and 2. Under Alternative 3 (Proposed Action), all development proposed in Alternatives 1 and 2, as well as construction of the IWSC (700,000 ft^2) and the WCPS, would be implemented, resulting in additional soil disturbance and impervious surface. As for Alternatives 1 and 2, soil erosion and sediment production would be minimized for all construction activities by following an

approved ESCP and obtaining appropriate permits. Use of stormwater control measures that favor re-infiltration would help minimize the stormwater discharge.

3.5.2.5 NO ACTION ALTERNATIVE

Under the No Action Alternative, CCD construction at Fort Meade would not occur. Operations would remain decentralized across the NSA campus and leased facilities off campus and the existing conditions discussed in **Section 3.5.1** would remain unchanged. Therefore, no impacts on geological resources would be expected.

3.5.2.6 REASONABLY FORESEEABLE EFFECTS

Short-term, minor, adverse reasonably foreseeable effects on geological resources could be expected from construction-related ground disturbance, grading, and soil compaction associated with the Proposed Action. In combination with construction and demolition from reasonably foreseeable projects identified in **Section 2.5**, these impacts could be slightly greater. Impacts on topography, geology, and soils from construction would be localized to the site being developed. Construction sites that are greater than 5,000 ft^2 require BMPs, stormwater management plans, and ESCPs to minimize the potential for impacts off site. Long-term, negligible to moderate, adverse reasonably foreseeable effects from the Proposed Action and reasonably foreseeable projects may occur because of the increase in impervious surfaces and the associated potential for increased soil erosion and sedimentation at Fort Meade.

3.6 Water Resources

This section presents the affected environment and environmental consequences of the project as it relates to water resources, including existing conditions and environmental consequences.

3.6.1 Existing Conditions

The ROI for the analysis of impacts on water resources includes the project area and adjacent water features.

Surface Water. The majority of Fort Meade, including the CCD project area, lies within the Little Patuxent River watershed of the Patuxent River Basin. The very northeastern corner of the installation is within the Severn River watershed. The Little Patuxent River, which is designated a “scenic river” under the Maryland Scenic and Wild Rivers Act of 1968, is approximately 0.3 miles west of the installation’s western boundary flowing south, then southeast toward the Patuxent River. More than 7 miles of perennial streams, including intermittent and ephemeral channels, are present within the Fort Meade boundary. Primary surface waters include Burba Lake, Midway Branch and its primary tributary, and the Franklin Branch, the latter two of which are tributaries of the Little Patuxent River. Stormwater at Fort Meade flows through an extensive stormwater drainage network including storm drains, swales, ditches, and retention basins. Primary stormwater flow is ultimately discharged into the Little Patuxent River via the Midway and Franklin Branches (NSA n.d.).

The Little Patuxent River is currently listed on Maryland’s list of impaired waters under Section 303(d) of the Clean Water Act (CWA) with impairments identified as sediments,

metals (cadmium), high nutrient levels (phosphorus), and impacts to biological communities. Total maximum daily loads for chlorides and total suspended solids have been established for multiple segments of the Little Patuxent River and associated tributaries located within the boundaries of Fort Meade. Additionally, to minimize impacts and degradation of local water bodies, Fort Meade maintains a voluntary 100-foot riparian forest buffer along streams and abutting wetlands to the maximum extent possible as established in the Fort Meade Comprehensive Expansion Management Plan (NSA 2024d). While not required as the project area occurs on federal lands, the 100-foot riparian buffer is in line with the State's Critical Area Regulations, which is a designated area that helps protect the Chesapeake Bay and Atlantic Coastal Bays from the impact of development. The minimum width of this buffer is 100 feet and may be expanded in areas of sensitive resources like steep slopes or specific soil types (MDNR 2011).

Fort Meade holds three National Pollutant Discharge Elimination System (NPDES) permits, and NSA holds two permits. These include an NPDES Wastewater Treatment Plant (WWTP) State Discharge Permit issued to American Water Operations and Maintenance, Inc. (American Water), two NPDES General Permits for Small Municipal Separate Storm Sewer Systems (one each for Fort Meade and NSA); and two NPDES General Permits for discharges from stormwater associated with activities for Fort Meade and NSA. Disturbance of over one acre of land for development also requires an NPDES Construction Activities permit. The following plans developed for Fort Meade include required stormwater BMPs and ESD requirements to assist with stormwater management and protection of water resources:

- **NSA and Fort Meade Spill Prevention, Control, and Countermeasure (SPCC) Plans (NSA 2019a, Fort Meade 2022b), as required under 40 CFR 112.5(a):** to help prevent release of oil into the environment
- **Fort Meade Pollution Prevention (P2) Plan (Fort Meade 2011):** identifies installation-specific environmental regulatory requirements including goals and objectives of the water and wastewater programs
- **NSA Campus Master Plan (NSA 2025) and Fort Meade ADP (U.S. Army 2020):** incorporates long-term planning goals including land conservation practices

In-depth resource evaluation of wetland resources is discussed in **Section 3.7** and detailed evaluation of stormwater infrastructure is provided in **Section 3.6**.

Groundwater. Three aquifers are present at Fort Meade—the Upper Patapsco aquifer is the unconfined, shallow water-table aquifer with a variable direction of flow, the Lower Patapsco is separated from the Upper Patapsco by the Middle Patapsco Clay Unit, and the Patuxent aquifer is the deep aquifer with the Arundel Clay as the confining unit. VOCs, pesticides, and explosives have been detected in the Upper and Lower Patapsco aquifer within the installation's boundary. Groundwater quality impacts for these aquifers have also been detected off-installation and beneath the city of Odenton, southeast of Fort Meade (AAC DOH 2025).

The Patuxent aquifer is the deepest aquifer, with a primary groundwater flow direction to the southeast. This aquifer is the primary drinking-water source for Fort Meade. Six on-

installation drinking-water wells, ranging in depths of 500 to 800 feet below ground surface, are present and permitted under an MDE Appropriation and Use Permit. Groundwater sampling results for the six drinking-water wells have not identified water quality concerns associated with the aquifer (American Water 2023). None of the wells are within the vicinity of the CCD sites.

Floodplains. Federal Emergency Management Agency (FEMA) floodplain maps for Anne Arundel unincorporated county areas identified 1 percent annual chance flood hazard areas (100-year floodplains) within Fort Meade along the Midway and Franklin Branch stream segments (see **Figure 3-1**) (FEMA 2012). There are 100-foot riparian buffers in place along these stream segments to help protect the integrity of the streams and associated floodplains.

Coastal Zone. Fort Meade, including the proposed CCD sites, falls within Maryland's Coastal Zone; therefore, the installation is subject to Maryland's CZMP. MDE regulates activities that are proposed within the Coastal Zone through federal consistency requirements. Under these requirements, applicants including federal agencies must certify their proposed activity would be conducted in a manner consistent with the State's CZMP. In accordance with Section 307(c)(3)(A) of the Federal CZMA of 1972, as amended, and 15 CFR 930 subpart D, a CZMA Federal Consistency Determination for the proposed CCD EA has been provided in **Appendix C**. If a state permit is not required for a project, MDE has the authority to "concur" or "object" to the federal consistency determination.

3.6.2 Environmental Consequences

This section presents the environmental consequences of the project as it relates to water resources, including evaluation criteria; Alternatives 1, 2, and 3 and the No Action Alternative; and reasonably foreseeable effects.

3.6.2.1 EVALUATION CRITERIA

Impacts on water resources would be considered significant if a proposed action results in substantial degradation of surface-water or groundwater quality or quantity, modification or damage to existing surface-water drainage patterns, or violation of established water quality or water resource protection laws.

3.6.2.2 ALTERNATIVE 1

Short-term, negligible to minor, adverse and long-term, beneficial impacts on water resources would be expected under Alternative 1. This alternative would result in the demolition of six buildings, construction of the MOSF in the northeast portion of the TSA, construction of the WBC in the southeast portion of the TSA, extension of Sigaba Way, and conversion of much of the rest of the project area to surface parking. Impacts include increased sedimentation and erosion from stormwater runoff from demolition and construction activities. These impacts would be minimized to the greatest extent possible through the incorporation of ESD practices and the implementation of effective stormwater management controls, including stormwater BMPs.

Long-term, while a slight increase in impervious surfaces would result in an increase in runoff, additional new stormwater management techniques implemented for the project

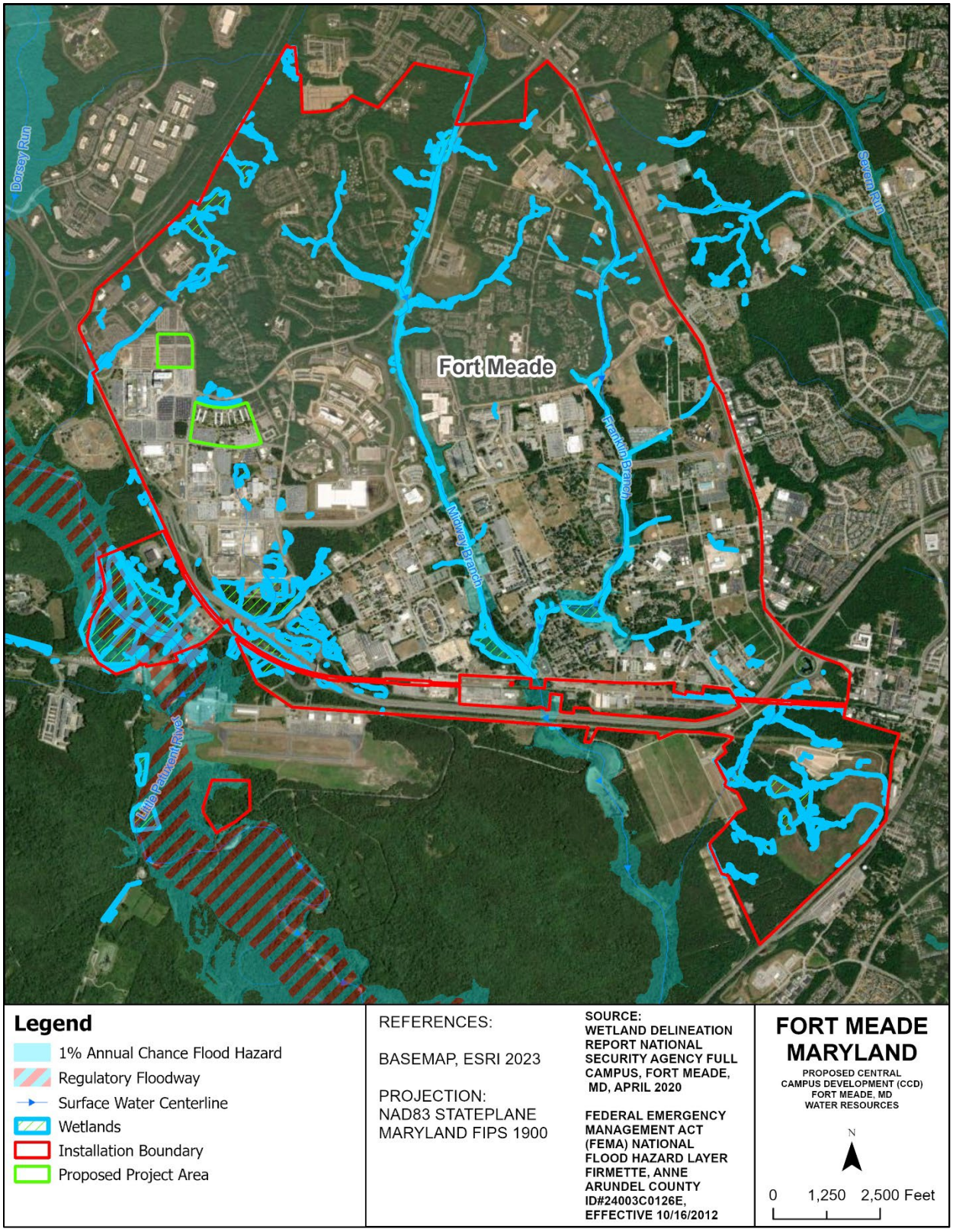

Figure 3-1. Water Resources at Fort Meade

that meet MDE standards would manage the quantities of stormwater runoff such that impacts are negligible, if not improved.

Surface Water. Short-term, negligible to minor, adverse and long-term, beneficial impacts on surface water would be expected due to increased sedimentation and erosion associated with runoff from construction-related ground disturbance and a slight increase in impervious surfaces associated with development. Under Alternative 1, project activities would include soil disturbances greater than 5,000 ft² and more than 1 acre within the northwest watershed basin on Fort Meade. Project design would be required to meet Section 438 of the Energy Independence and Security Act (EISA), which requires federal agencies to manage stormwater runoff from development and redevelopment projects. Additional requirements, as detailed in COMAR 26.17.01, include a Stormwater Management Plan with an approved ESCP. Disturbance of over one acre of land for development would also require an NPDES Construction Activities permit. With the implementation of stormwater BMPs, construction-related stormwater runoff would be contained to the greatest extent possible within the project footprint during construction. BMPs may include:

- Completing work phases to the greatest extent possible to reduce overall soil exposure at one time, thereby reducing sedimentation impacts on nearby waterways
- Implementing erosion control practices, including the installation of silt control devices, check dams, erosion control blankets, and the preservation of vegetation to prevent sediment release into nearby waterways
- Installing grade stabilization structures to minimize erosion along steep grades and using vegetative stabilization practices, such as planting grass or other vegetation

The increase in impervious surfaces would increase stormwater runoff and sediment and erosion potential. These impacts would be minimized due to improved stormwater management on site from implementation of ESD practices and stormwater management controls. At the State level, implementation of improved stormwater management will be achieved by use of ESD practices and stormwater management controls, as detailed in the MDE *Stormwater Design Manual*, which outlines comprehensive guidelines for stormwater management practices in Maryland. Compliance with federal guidelines including Unified Facilities Criteria (UFC) 3-210-10, *Low Impact Development*, which identifies technical criteria for planning, design, construction and maintenance of stormwater management controls, would occur to comply with EISA Section 438 to manage stormwater discharge quantities on site.

Groundwater. Short-term, negligible, adverse impacts on groundwater could result from incidental spills during construction because shallow groundwater is present throughout Fort Meade. With the proper use of BMPs, as required under federal and state policies, permits, and the planning documents identified in **Sections 3.6.2** and **3.9.2**, potential impacts on groundwater would be minimized. Impacts on deeper groundwater aquifers are not anticipated because of their depth and presence of confining layers.

Floodplains. No impacts on floodplains would be expected because Alternative 1 would not occur in a floodplain and would not increase stormwater runoff in the long term (see **Figure 3-1**).

Coastal Zone. Short-term, negligible to minor, adverse impacts on coastal zone resources would be expected because of temporary soil disturbance and the potential for soil erosion or sedimentation during construction. Long-term, negligible, adverse impacts on water resources are not expected because there is no anticipated increase in impervious surfaces under Alternative 1. Long-term, negligible beneficial impacts on water resources would occur from improved stormwater management on the site. Implementation of ESD, BMPs, and a site-specific ESCP, as required under the Stormwater Management Act of 2007 and the MDE *Stormwater Design Manual*. These State regulations ensure that development projects in Maryland effectively manage stormwater, minimize environmental impacts, and protect water quality, and would minimize potential impacts to the greatest extent practicable.

The project area does not lie within lands analogous to the Chesapeake Bay 100-foot Critical Area Buffer. As part of compliance with the federal CZMA and Maryland's CZMP, consideration of the coastal zone would be incorporated into the design of the Proposed Action to minimize adverse impacts wherever possible. The Proposed Action would result in negligible impacts on the coastal zone as demonstrated in the Federal Consistency Determination provided in **Appendix C**. NSA is coordinating with MDE on the consistency determination for the Proposed Action. Therefore, NSA and Fort Meade have determined that the Proposed Action is consistent, to the maximum extent practicable, with the policies of Maryland's federally approved CZMP.

3.6.2.3 ALTERNATIVE 2

All development proposed under Alternative 1 would be included in Alternative 2, as well as the construction of the CMSF (500,000 ft²) in the southeast portion of the TSA, and a structured parking facility which would replace the surface parking proposed in the northwest portion of the TSA. This alternative would result in an increase in the amount of soil disturbance and associated potential for soil erosion or sedimentation into stormwater runoff or surface waters during construction. Impacts on water resources for Alternative 2 would be similar to those described for Alternative 1; however, additional impervious areas would be incorporated under Alternative 2, and impacts would occur at a greater level but remain minor given the incorporation of ESD practices, stormwater management controls, and compliance with the plans and regulations detailed in **Section 3.6.2**.

3.6.2.4 ALTERNATIVE 3

Under Alternative 3, all development proposed in Alternatives 1 and 2 would occur with the additional construction of the IWSC (700,00 ft²) in the northwest portion of the TSA and the WCPS. Construction for the WCPS would take place outside the TSA in the 13-acre WCPS area, where existing surface parking lots would be demolished and the WCPS would be replace the existing impervious surface. Impacts on water resources from Alternative 3 would be greater than those described for Alternatives 1 and 2, because the proposed buildings together are approximately twice as large as those proposed for Alternative 1. Therefore, given the increase in ground disturbance

associated with the construction of the IWSC and the WCPS, impacts on water resources would be similar to those described for Alternatives 1 and 2, but at a greater level of minor to moderate impacts. The overall impacts would remain less than significant given the incorporation of ESD practices, obtaining of appropriate permits, stormwater management controls, and compliance with the plans and regulations detailed in **Section 3.6.2**.

3.6.2.5 NO ACTION ALTERNATIVE

Under the No Action Alternative, CCD construction at Fort Meade would not occur. Operations would remain decentralized across the NSA campus and leased facilities off campus and the existing conditions discussed in Section **3.6.1** would remain unchanged. Therefore, no impacts on water resources would be expected.

3.6.2.6 REASONABLY FORESEEABLE EFFECTS

Development under the Proposed Action, along with the reasonably foreseeable future projects discussed in **Section 2.5**, would lead to minor to moderate, adverse reasonably foreseeable effects on water resources. An increase in impervious surfaces at Fort Meade would contribute to a decrease in groundwater recharge; increased stormwater runoff; and subsequent potential increase in erosion, sedimentation, and pollutant loading. However, the majority of CCD construction is occurring on previously developed land. These impacts would be further minimized in compliance with incorporation of ESD practices, improving groundwater recharge, as well as the implementation of effective stormwater management controls, including stormwater BMPs, and site designs that meet federal standards for runoff control. These measures would help improve groundwater recharge, prevent erosion and sedimentation, and reduce pollutant loading into local surface water and groundwater.

3.7 Biological Resources

This section presents the affected environment and environmental consequences of the project as it relates to biological resources, including existing conditions and environmental consequences.

3.7.1 Existing Conditions

The ROI for analysis of impacts on biological resources includes the project area and surrounding areas.

Vegetation. Vegetative cover at Fort Meade consists of forested areas, open spaces, meadows, wetlands, maintained turf, roadside vegetation, and landscaped areas. The project area covers up to approximately 49 of the 840 acres NSA occupies at Fort Meade. The majority of vegetation in the TSA and Sigaba Way extension is landscaped areas and trees along established pathways. Landscaped areas at Fort Meade are managed primarily through implementation of the 2005 Fort Meade Installation Design Guide, which provides guidance for standardizing and improving the quality of the total environment of the installation. No vegetation is present in the WCPS project area.

The most commonly identified invasive species in the 2012 *Invasive Species Management Plan* for Fort Meade include Asiatic bittersweet (*Celastrus orbiculatus*),

Japanese honeysuckle (*Lonicera japonica*), Nepalese browntop (*Microstegium vimineum*), and mile-a-minute (*Mikania cordata*) (Fort Meade 2012).

Wildlife. The majority of the TSA is landscaped vegetation with trees lining existing pathways, providing limited areas for potential wildlife habitat. A 2014 *Fauna and Wildlife Populations* report conducted at Fort Meade identified 11 mammal, 13 bird, and 11 reptile/amphibian species on the installation. Representative mammals include white-tail deer (*Odocoileus virginianus*), gray squirrel (*Sciurus carolinensis*), groundhog (*Marmota monax*), and raccoon (*Procyon lotor*); representative bird species include Baltimore oriole (*Icterus galbula*), Canada warbler (*Cardellina canadensis*), hooded merganser (*Lophodytes cucullatus*), and scarlet tanager (*Piranga olivacea*) (Fort Meade 2014).

Avian surveys conducted intermittently throughout 2021, studying the five core forest blocks throughout Fort Meade, resulted in observation of 111 species (observed via sight and sound). Two species identified as "State Endangered," according to the Maryland Department of Natural Resources (MDNR) Rare, Threatened and Endangered Species List, are shown in **Table 3-8**. The nearest forest block to the project areas is block H-B, located northeast of the WCPS project area. Pollinator surveys documented 58 bee species from five families and 33 butterfly species, including the federal candidate monarch butterfly (*Danaus plexippus*). Other than the monarch butterfly, no federally or State-listed threatened or endangered butterfly or bee species were observed. None of the designated important pollinator sites overlap with the proposed project sites (CMI 2022).

Special-Status Species. Special-status species include federally listed species protected under the Endangered Species Act (ESA), federal proposed species, federal candidate species, species under federal review for listing, State-listed species, and Bald and Golden Eagle Protection Act (BGEPA)- and Migratory Bird Treaty Act (MBTA)-protected species that occur on or near Fort Meade. The list of special-status species has been developed based on data provided in the Fort Meade Integrated Natural Resources Management Plan (INRMP); threatened and endangered species surveys; the United States Fish and Wildlife Service (USFWS) MBTA list; and the Maryland list of rare, threatened, and endangered wildlife species. The potential for one federally endangered species, two federally proposed species, two State-listed species, two BGEPA species, and 24 MBTA species is possible at Fort Meade (USFWS 2022, 2025a; MDNR 2023; CMI 2018, 2022; MDE 2024; NSA 2025). **Table 3-8** lists potential special-status species that could be present on or around the TSA and WCPS project areas.

Ten bat species were confirmed acoustically during the 2017–2018 surveys. This included two federally endangered bats, northern long-eared bat (*Myotis septentrionalis*) and Indiana bat (*Myotis sodalis*), as well as the proposed endangered tricolored bat (*Perimyotis subflavus*) and under-review little brown bat (*Myotis lucifugus*). A maternity colony is unlikely to be present on Fort Meade as there is no known hibernaculum. Indiana bats, little brown bats, and tricolored bats are associated with forested wetlands and riparian areas. It is unlikely that roosting areas would be present at the TSA or WCPS project areas because there is minimal vegetation that would provide a suitable habitat (CMI 2018).

A 2018 *Wood Turtle* (Gylptemys insculpta) *Habitat and Forest Cover Assessment* conducted for Fort Meade estimated that 1,689 acres of potential wood turtle habitat is present throughout the installation. No suitable habitat for the wood turtle (including basic mesic forest, grassland/open habitat, or mesic mixed hardwood forest) is present at either the TSA or WCPS project areas (CMI 2019).

Adult and caterpillar monarch butterflies were observed on common milkweed and swamp milkweed (*Asclepias incarnata*) during 2021 surveys. No monarch butterfly survey sites are located at the TSA or WCPS project areas (CMI 2022).

Five migratory birds (see **Table 3-8**) have been documented at Fort Meade. None of the observations occurred on or near the TSA or WCPS project areas.

No federally or State-listed plant species or critical habitats for listed flora or fauna have been documented on the installation.

Wetlands. A wetland delineation was conducted for the entire NSA campus in 2020 which identified approximately 23.2 acres of wetlands mostly within the southeastern portion of the installation, 20.6 acres of which are jurisdictional wetlands. Wetlands are present in forested areas along both sides of Rockenbach Road, north of the TSA. A wetland is also present in a forested area 500 feet northeast of the WCPS project area. No wetlands have otherwise been identified within the TSA or WCPS project areas, which are both heavily disturbed (USACE 2020, USFWS 2025b).

3.7.2 Environmental Consequences

This section presents the environmental consequences of the project as it relates to biological resources, including evaluation criteria; Alternatives 1, 2, and 3 and the No Action Alternative; and reasonably foreseeable effects.

3.7.2.1 EVALUATION CRITERIA

Potential impacts on biological resources are evaluated based on the resource that would be affected relative to its occurrence within the region, the sensitivity of the resource to proposed activities, and the duration of ecological impacts. Potential impacts on threatened and endangered species are evaluated based on the potential for the Proposed Action to directly or indirectly adversely affect listed species or designated critical habitat, jeopardize the continued existence of species that are proposed for listing, or adversely modify proposed critical habitat. Consideration is given to context and intensity of the effects, and the measures proposed to avoid effects on listed species.

3.7.2.2 ALTERNATIVE 1

Vegetation. Short- and long-term, minor, adverse impacts are expected to occur on vegetation under Alternative 1. During the construction phase, demolition of all existing structures and site preparation for construction would cause ground disturbance from the use of heavy equipment throughout the 31-acre TSA. Areas of temporary ground disturbance would be reseeded with native vegetation wherever possible. Long-term impacts may result from the additional structures and impervious surface cover, requiring permanent removal of trees and vegetation in areas throughout the TSA, including along existing pathways and buildings. Following construction, landscape

Table 3-8. Special-Status Species that Potentially Occur on Fort Meade

Species Name	Status	Documented on the Installation?
Mammals		
Northern long-eared bat (*Myotis septentrionalis*)	E, SE	Yes
Tricolored bat (*Perimyotis subflavus*)	PE	Yes
Insects		
Monarch butterfly (*Danaus plexippus*)	PT	Yes
Birds[a]		
Bald eagle (*Haliaeetus leucocephalus*)	BGEPA/MTBTA	Yes
Black-billed cuckoo (*Coccyzus erythropthalmus*)	MBTA	No
Blue-winged warbler (*Vermivora cyanoptera*)	MBTA	No
Bobolink (*Dolichonyx oryzvorus*)	MBTA	No
Canada warbler (*Cardellina canadensis*)	MBTA	Yes
Cerulean warbler (*Setophaga cerulea*)	MBTA	No
Chimney swift (*Chaetura pelagica*)	MBTA	Yes
Eastern whip-poor-will (*Antrostomus vociferus*)	MBTA	No
Golden eagle (*Aquila chrysaetos*)	BGEPA/MTBTA	No
Grasshopper sparrow (*Ammodramus savannarum*)	MBTA	No
Kentucky warbler (*Geothypis formosa*)	MBTA	Yes
King rail (*Rallus elegans Audubon*)	MBTA	No
Least tern (*Sternula antillarum*)	MBTA/ST	No
Lesser yellowlegs (*Tringa flavipes*)	MBTA	No
Pectoral sandpiper (*Calidris melanotos*)	MBTA	No
Prairie warbler (*Setophaga discolor*)	MBTA	No
Prothonotary warbler (*Protonotaria citrea*)	MBTA	No
Red-headed woodpecker (*Melanerpes erythrocephalus*)	MBTA	No
Rusty blackbird (*Euphagus carolinus*)	MBTA	No
Scarlet tanager (*Piranga olivacea*)	MBTA	Yes
Semipalmated sandpiper (*Calidris pusilla*)	MBTA	No
Short-billed dowitcher (*Limnodromus griseus*)	MBTA	No
Willet (*Tringa semipalmata*)	MBTA	No
Wood thrush (*Hylocichla mustelina*)	MBTA	Yes

Sources: USFWS 2022, 2025a; MDNR 2023; CMI 2018, 2022; MDE 2024; NSA 2025.
Key: BGEPA = Bald and Golden Eagle Protection Act; E = endangered; F = federal; MBTA = Migratory Bird Treaty Act; R = rare; S = State, T = threatened.
[a] Includes only MBTA-listed species identified in the INRMP and USFWS Information for Planning Level Surveys to Support INRMP Implementation at Fort George G. Meade, Maryland, were not within close proximity to the proposed project sites.

trees would be replanted in the project area, particularly along the Sigaba Way extension.

Wildlife. Short- and long-term, negligible to minor, adverse impacts on wildlife may occur from potential displacement and increased noise during site disturbance and preparation for demolition and construction activities. Short-term impacts on birds, small mammals, invertebrates, and other common small wildlife in the TSA would be potentially displaced during the construction phase while demolition and construction efforts occur. Increased noise from heavy equipment that typically generates noise levels of 80 to 90 dBA at a distance of 50 feet from the source would have adverse impacts on wildlife, but limited to no wildlife would typically be present within the TSA

due to limited habitat. With multiple items of equipment operating concurrently, noise levels can be high within several hundred feet of active construction sites. Wildlife located further than 50 feet from the noise source, such as those in the forested areas along Rockenbach Road north of the TSA, would still be able to temporarily hear increased noise levels during construction. Wildlife species would be expected to use adjacent suitable habitat elsewhere during construction and may return once the noise from heavy equipment use has ceased. Furthermore, wildlife currently occupying habitat near the project areas would be habituated to noise disturbances because of the existing urbanized environment; however, a small increase in the frequency of startle responses or other behavioral modifications caused by the proposed construction activities could occur.

Special-Status Species. Impacts on special-status species under Alternative 1 would be similar to those described for wildlife, in both the short and long term. No special-status species have been documented within the TSA and no critical habitat is present. Potential long-term impacts could include operational noise and lighting on foraging species such as bats, and impacts would be minimized by implementation of BMPs such as using wildlife-friendly construction standards and installation of downward-facing lighting.

Wetlands. No impacts on wetlands are expected to occur under Alternative 1 because no wetlands are located within the TSA project area. The wetland areas north of the TSA and the WCPS site would not be affected by the Proposed Action.

3.7.2.3 ALTERNATIVE 2

Vegetation. Impacts on vegetation under Alternative 2 would be similar to those described under Alternative 1, with the same amount of site disturbance and vegetation loss anticipated.

Wildlife. Impacts on wildlife under Alternative 2 would be similar to those described under Alternative 1.

Special-Status Species. Impacts on special-status species under Alternative 2 would be similar to those described under Alternative 1.

Wetlands. Impacts on wetlands under Alternative 2 would be the same as those described under Alternative 1.

3.7.2.4 ALTERNATIVE 3

Vegetation. Impacts on vegetation under Alternative 3 would be similar to those described under Alternative 1, with the same amount of site disturbance and vegetation loss anticipated. Alternative 3 would also require site disturbance and preparation for the proposed parking structure in the WCPS project area. Because the site has been previously disturbed and no vegetation is located in this 13-acre impervious area, additional impacts on vegetation are not expected.

Wildlife. Impacts on wildlife at the TSA under Alternative 3 would be similar to those described under Alternative 1. No impacts on wildlife from the proposed parking

structure at the WCPS are anticipated because the area is composed entirely of impervious surface as a paved parking lot and no suitable habitat is present at the site.

Special-Status Species. Impacts on special-status species would be similar to those described for wildlife.

Wetlands. No impacts are anticipated because the WCPS area is already an impervious surface and no wetlands are located within the project area.

3.7.2.5 NO ACTION ALTERNATIVE

Under the No Action Alternative, CCD construction at Fort Meade would not occur. Operations would remain decentralized across the NSA campus and leased facilities off campus and the existing conditions discussed in **Section 3.7.1** would remain unchanged. Therefore, no impacts on biological resources on would be expected.

3.7.2.6 REASONABLY FORESEEABLE EFFECTS

The Proposed Action in combination with the listed reasonably foreseeable actions discussed in **Section 2.5** could result in short- and long-term, negligible to minor, adverse impacts on biological resources including vegetation, wildlife, special-status species, and wetlands. Development and infrastructure projects have the potential to have adverse impacts from loss of habitat, removal of vegetation, and disturbance of wetlands, among others. All on-installation projects at Fort Meade would use BMPs where appropriate and adhere to all DoD, federal, and State natural resources management regulations. Projects outside of Fort Meade in the surrounding area would adhere to applicable State and local (Anne Arundel County) regulations regarding biological resources and wetlands.

3.8 Cultural Resources

This section presents the affected environment and environmental consequences of the project as it relates to cultural resources, including existing conditions and environmental consequences.

3.8.1 Existing Conditions

The ROI for the analysis of impacts on cultural resources includes the project area and surrounding viewsheds.

Cultural resources at Fort Meade are documented in the installation's Integrated Cultural Resources Management Plan (ICRMP) (Fort Meade 2018). Covering the period from 2018 to 2022, the ICRMP provides guidelines and procedures to help Fort Meade meet its legal responsibilities regarding historic preservation and cultural-resources management. The ICRMP is currently being updated. In 1995, a comprehensive Phase I archaeological survey was conducted across Fort Meade to evaluate the presence of archaeological resources (Fort Meade 2018). Detailed information on previous cultural-resources investigations and their findings is provided within the ICRMP.

Archaeological Sites and Cemeteries. As stated in the 2018 ICRMP, Fort Meade contains 33 prehistoric and/or historic archaeological sites, none of which are currently listed in the National Register of Historic Places (NRHP). Each site has been evaluated

for NRHP eligibility, with only one—prehistoric site 18AN1240—determined to be eligible. The remaining 32 sites were found ineligible for NRHP inclusion. Additionally, nine historic cemeteries were assessed and deemed ineligible; however, because of the presence of buried human remains, these cemeteries are recommended for preservation through maintenance and avoidance (Fort Meade 2018). None of these archaeological sites are located within any of the CCD project areas as shown in **Figure 2-1** through **Figure 2-3**.

Architectural Resources. A previous evaluation examined all structures on Fort Meade constructed before 1960 to assess their potential eligibility for inclusion in the NRHP. The Base Realignment and Closure Act of 2005 led to various construction activities, requiring cultural-resources reviews and field investigations; however, no new cultural resources were identified as a result of these projects. Between 2015 and 2018, 24 buildings underwent NRHP eligibility assessments, with draft forms submitted to the Maryland Historical Trust (MHT) for approval. Additionally, the Maintenance Guidelines for the Historic District were updated in 2018. That same year, Fort Meade completed a comprehensive review of its building inventory to verify which structures had been evaluated for NRHP eligibility and deemed ineligible, with formal concurrence received from MHT (Fort Meade 2018). In 2019, 27 buildings were reevaluated to address any inconsistencies between MHT's and Fort Meade's records. Fort Meade determined that these buildings were ineligible for the NRHP. Of these, MHT concurred with the ineligibility determination for 22 buildings and requested revised Determinations of Eligibility (DOEs) for the remaining five buildings. No NRHP-eligible buildings are located within or near the project area.

In 2016, a proposal was made to demolish 15 buildings and three surface parking lots within the TSA as part of the East Campus Integration Program. An NRHP survey and evaluation of these architectural resources were conducted, and a review of records from MHT and the Fort Meade ICRMP confirmed that no previously identified historic properties existed within the NSA campus. Additionally, because of extensive prior disturbance, the potential for archaeological resources was determined to be low. A total of 17 buildings constructed before 1979 were assessed for NRHP eligibility as part of the survey. Through consultation with MHT, two structures, Buildings 9800 and 9800A, were recommended as eligible for NRHP listing under Criterion A, while the remaining facilities in the TSA were found ineligible. Neither of these two eligible resources are located near the project area.

Currently, no buildings on Fort Meade are listed in the NRHP. However, seven historic properties have been determined eligible for NRHP listing and are therefore subject to the regulatory requirements of the National Historic Preservation Act (NHPA). These historic architectural properties include the Fort Meade Historic District, three culverts constructed by German prisoners of war during World War II, the water treatment plant (Building 8688), and Buildings 9800 and 9800A. The Fort Meade Historic District encompasses 13 contributing buildings, including a mix of barracks, administrative buildings, and support structures (NSA 2017, Fort Meade 2018). None of these properties are in or near the project area. The Baltimore–Washington Parkway is a historic roadway resource managed by the National Park Service that connects these

two metropolitan areas, and is situated approximately 0.7 and 0.3 miles northwest of the TSA and WCPS sites, respectively.

Resources of Traditional, Religious, or Cultural Significance to Native American Tribes. Although no federally recognized tribes reside in Maryland, seven federally recognized tribes across the United States have historical affiliations with the land that now encompasses Fort Meade (Fort Meade 2018). Currently, no known traditional cultural properties or Native American sacred sites have been identified within or near the project area. Letters were sent to tribes as part of scoping for this EA (see **Appendix A**); to date no response letters have been received.

3.8.2 Environmental Consequences

This section presents the environmental consequences of the project as it relates to cultural resources, including evaluation criteria; Alternatives 1, 2, and 3 and the No Action Alternative; and reasonably foreseeable effects.

3.8.2.1 EVALUATION CRITERIA

Adverse effects on cultural resources may include physically altering, damaging, or destroying all or part of a resource; modifying environmental characteristics that contribute to its significance; introducing visual or auditory elements that are incompatible with the property or alter its setting; neglecting the resource to the point of deterioration or destruction; or selling, transferring, or leasing the property out of agency ownership or control without enforceable legal protections to preserve its historic significance. Both temporary and long-term impacts of the project on cultural resources were assessed and evaluated for their potential effects.

3.8.2.2 ALTERNATIVE 1

Under Alternative 1, no known cultural resources are located within or near the proposed locations of the MOSF or WBC in the existing TSA, and no historic buildings have been identified in this part of the NSA campus on Fort Meade. Construction of the new MOSF, WBC, and infrastructure at the TSA would have no adverse effect on historic properties at Fort Meade. NHPA Section 106 consultation with MHT and the National Park Service is ongoing to ensure that any potential adverse effects on the viewshed from the historic Baltimore–Washington Parkway, situated approximately 0.7 mile northwest of the TSA, are avoided or minimized. MHT concurred that the project would have no adverse effect on cultural resources (see **Appendix A**). No response has yet been received from the National Park Service.

3.8.2.3 ALTERNATIVE 2

Similar to Alternative 1, no cultural resources, including historic buildings, are within or near the Alternative 2 site in the existing TSA. Therefore, construction of the MOSF, CMSF, WBC, and associated infrastructure as part of Alternative 2 would have no adverse effect on historic properties.

3.8.2.4 ALTERNATIVE 3

No cultural resources, including historic buildings, are within or near the project area for Alternative 3. The proposed WCPS, with a height of up to 9 levels, is 0.3 miles from and may be visible from the Baltimore–Washington Parkway. Because the proposed height

is consistent with existing structures in the area, it is not expected to have any adverse impacts on this resource. NHPA Section 106 consultation with MHT and the National Park Service is ongoing (see **Appendix A**) to ensure that any potential adverse effects on the viewshed from the Baltimore–Washington Parkway are avoided or minimized.

3.8.2.5 NO ACTION ALTERNATIVE

Under the No Action Alternative, CCD construction at Fort Meade would not occur. Operations would remain decentralized across the NSA campus and leased facilities off campus and the existing conditions for cultural resources discussed in **Section 3.8.1** would remain unchanged. Therefore, no impacts on cultural resources would be expected.

3.8.2.6 REASONABLY FORESEEABLE EFFECTS

Previous construction activities on and around Fort Meade have likely affected archaeological sites and architectural resources because of disturbances from prior development. However, no reasonably foreseeable effects on previously identified archaeological or architectural resources have been associated with the Proposed Action when considered alongside other relevant reasonably foreseeable future projects discussed in **Section 2.5**. The Proposed Action does not include the demolition of any NRHP-eligible buildings, and no adverse effects on archaeological sites are anticipated. Additionally, no known traditional cultural properties or Native American sacred sites are located within the project area.

3.9 Infrastructure

This section presents the affected environment and environmental consequences of the project as it relates to infrastructure, including existing conditions and environmental consequences.

3.9.1 Existing Conditions

The ROI for the analysis of impacts on infrastructure includes the project area.

Potable Water Supply. The campus potable water system is owned and operated by American Water and is shared by the Garrison. American Water has maintained a state Water Appropriation and Use Permit from MDE, which allows for sustained average of 3.3 million gallons per day (mgd) with an allowance for one month per year at a maximum capacity of 4.3 mgd. The most recent permit was renewed in November 2024 and expires in May 2036. Current demand is approximately 1.8 mgd, and the permit allocates a daily average of 3.3 mgd and a 4.3 mgd daily average for the month of maximum use. Currently, two aerators function as part of the water plant system and each can process around 2.5 mgd for a total of 5 mgd (CSS 2024).

A looped potable water line connects to the existing buildings in the southern portion of the TSA, while another line connects to each of the existing buildings in the northern portion of the TSA (NSA 2025, USACE 2022, AAC 2021a).

Sanitary Sewer and Wastewater Treatment System. The sanitary sewer system is owned by American Water through a Utility Privatization contract under a NPDES General Discharge Permit (MD0021717)/State Discharge Permit (17-DP-2533), which is

effective until July 31, 2025 (MDE 2020c). All sewage and wastewater are processed through the Fort Meade Advanced Wastewater Treatment Plant (WWTP) outside the NSA campus, with a daily flow average of 1.8 mgd, and a design daily flow of 4.5 mgd. The infrastructure is, however, old and may require upgrades to accommodate future development (USACE 2022).

The sanitary sewer system runs throughout the TSA with connections to each of the existing buildings in the TSA (NSA 2025).

Stormwater Drainage. The stormwater system on Fort Meade consists of swales, drains, and retention basins connected throughout the entire campus, managed under an NPDES Municipal Separate Storm Sewer System General Permit (MDR055501) issued by MDE, and a General Permit for Discharges Associated with Industrial Activities (MDE 2018, 2023). The campus is divided into five stormwater drainage basins where stormwater collects to a common outfall discharge point, three of which are human-made. These basins are beginning to reach maximum capacity, and no new basins are currently planned to be built. Several stormwater management facilities are in poor condition and are in need of replacement. The closest one is the South Campus Utility Plant to the southwest of the TSA (NSA 2025).

Stormwater drainage lines run throughout the project area, connecting to each building on the TSA and on the edges of the southwestern and southeastern parking lots (NSA 2025).

Electrical Supply. The electrical infrastructure is supplied from three electrical utility plants on the north, south, and east sides of the campus. These substations are served by the off-campus Tipton Substation, owned and maintained by Baltimore Gas and Electric (CSS 2024).

Electrical lines connect to each of the existing buildings in the TSA (NSA 2025).

Natural-Gas System. The natural-gas system on campus is owned and operated by Baltimore Gas and Electric, with several entrance points at the West and Central Campuses. The campus's gas lines are adequate in their condition, capacity, and reliability, though improvements will need to be made as the campus transitions to electric power (NSA 2025). A natural-gas line connects to each of the existing buildings in the TSA (CSS 2024, USACE 2022).

Steam and Chilled-Water Systems. The majority of buildings on the West and Central Campuses are provided steam from the Central Boiler Plant and distribution system. This system is at the end of its useful service life, and future options include replacing the central system, or adding regional plants or local boilers. East Campus buildings are served by local condensing boilers with no interconnection or backup fuel, and future plans have been proposed to connect the steam line to this area (CSS 2024).

None of the buildings in the project area are connected to steam or chilled water systems, and use local condensing boilers and water-cooled chillers (NSA 2025).

Solid Waste. NSA operates its own solid-waste and recycling programs apart from Fort Meade. Waste is collected by trash trucks anywhere from a weekly to daily basis, and

disposed of at a local contracted landfill, because no active landfills are located on Fort Meade itself. Solid-waste management and recycling practices follow the installation's Integrated Solid Waste Management Plan (ISWMP). NSA aims for a 50 percent waste intensity reduction by 2025. Fort Meade personnel aim to follow general management policy and applicable federal, State, and Army solid-waste management regulations (NSA 2025).

3.9.2 Environmental Consequences

This section presents the environmental consequences of the project as it relates to infrastructure, including evaluation criteria; Alternatives 1, 2, and 3 and the No Action Alternative; and reasonably foreseeable effects.

3.9.2.1 EVALUATION CRITERIA

Impacts on infrastructure would be considered significant if a proposed action resulted in substantial changes to utilities, such as long-term interruptions, exceeding capacity for any utility, or violating related permit conditions. Additionally, obstructing other construction that relies on or is focused on utilities would be significant if not coordinated properly with other contractors, who should be aware of nearby ongoing projects; utility locations; and federal, State, and installation safety regulations at the time of construction.

3.9.2.2 ALTERNATIVE 1

Potable Water Supply. Under Alternative 1, short-term, negligible to minor, adverse impacts on the potable water supply on Fort Meade would occur from temporary service disruptions during demolition of the majority of buildings in the TSA, and construction of the MOSF and WBC. Long-term, negligible, adverse impacts may also occur during operation of the MOSF and WBC from an increased demand on supply. Because of the MOSF's size and personnel occupancy nearly matching the MOF's, it can be assumed that their utility consumption would be similar. Assuming an average 35-gallon per day (gpd) usage per person in an office building, with 1,285 additional personnel coming from outside Fort Meade reporting to CCD facilities, this would result in a net increase of approximately 44,975 gpd (0.045 mgd) of water used under Alternative 1, which represents an approximately 2 percent increase over current daily demand of 1.8 mgd, and well under the sustained average 3.3 mgd per the MDE water permit. This would not substantially increase water consumption or require any renewal of permits.

Sanitary Sewer and Wastewater Treatment System. Short- and long-term, negligible to minor, adverse impacts on the sanitary sewer and wastewater treatment system on Fort Meade would occur under Alternative 1. Temporary disruptions would occur during demolition of the buildings in the TSA and during reconnection of the sanitary sewer lines to the MOSF and WBC. Assuming an average 35 gpd usage per person in an office building, preliminary calculations assume a total of 44,975 gpd, or 0.045 mgd, of wastewater generated from the associated 1,285 personnel on the MOSF and WBC. Considering the WWTP's current average flow of 1.8 mgd, this would represent an approximately 2 percent increase. The WWTP would not approach the maximum capacity of 4.5 mgd or require any additional modifications as a result of this increase, because the wastewater collection system is currently adequate, but further substantial development would require an upgrade (NSA 2025). Upgrades to the utility lines would

also help better manage the added utility loadings for the MOSF and WBC. See **Section 3.10** for discussion on impacts from use of reclaimed water for the MOSF.

Stormwater Drainage. Short-term, negligible to minor, adverse impacts on stormwater drainage on Fort Meade would occur from increased runoff associated with demolition and construction activities, and an increase in impervious surfaces under Alternative 1. Stormwater management and flow lines would be altered because of ground disturbance for the duration of demolition and construction, temporarily increasing stormwater runoff in the vicinity of the project area. Because of associated increased erosion and sedimentation, nearby water quality could temporarily decrease during this period. Contractors would follow BMPs for stormwater management during construction by implementing drainage to divert stormwater away from the work area.

Electrical Supply. Short- and long-term, negligible to minor, adverse impacts would occur on the electrical supply system on Fort Meade from temporary disruptions during demolition and construction activities under Alternative 1. Demolition and construction would cause temporary disruptions to nearby buildings when disconnecting and connecting to the electrical distribution line. Operation of the MOSF and WBC would increase the electric load proportionate to the buildings' size, drawing from the East Campus Substation. The load would likely be similar to the current load generated by the existing buildings on the TSA and would not exceed capacity.

Natural-Gas System. Short-term, negligible, adverse impacts could occur on the natural-gas system on Fort Meade under Alternative 1 because of temporary disruptions during demolition and construction. The existing natural-gas lines in the project area would likely be capped during demolition because none of the proposed buildings would use natural gas (CSS 2024). Long-term, beneficial impacts on natural gas would occur as a result of decreased demand.

Steam and Chilled-Water Systems. Long-term, negligible, adverse impacts would occur on steam and chilled-water systems from increased demand under Alternative 1. The MOSF and WBC would likely use building-level water-cooled chillers, similar to other existing buildings on the campus (CSS 2024). This would increase chilled-water use on the NSA campus, although Fort Meade's chilled-water system is of adequate quality and capacity to withstand an increase. The distribution system associated with the Central Boiler Plant would likely need to be upgraded because of its age (NSA 2025). Similar impacts would occur when constructing a condensing boiler for hot water.

Solid Waste. Short-term, moderate, and long-term, minor, adverse impacts would occur from an increase in solid-waste generation on the NSA campus under Alternative 1. Demolition of the TSA buildings, construction of surface parking and the Sigaba Way extension, and construction of the MOSF and WBC would result in a temporary increase in solid waste from the generation of construction and demolition debris, which would be disposed of, recycled, or reused in accordance with federal, installation, and local regulations and guidelines. See

Table 3-9 for calculations of generation of solid waste. The total debris generated from construction and demolition activities would be approximately 19,400 tons. Waste would be recycled to the greatest extent practicable. The contractor would be responsible for

taking the debris to permitted landfills or recycling centers. The increase of personnel on site would increase the generation of solid waste during MOSF and WBC operation, which would be handled according to the ISWMP and Anne Arundel County's Solid Waste Management Plan. Similar to other utilities, the amount of solid waste generated from these two buildings would likely not be dissimilar to the amount generated from the current buildings on the TSA.

Table 3-9. Estimated Construction and Demolition Debris Generated from Implementation of Alternative 1

Phase	ft^2	Multiplier (lb/ft^2)	Debris Generated	
			lb	Tons
TSA building demolition	203,732	158	32,189,656	16,095
Construction of MOSF	700,000	4.34	3,038,000	1,519
Construction of WBC	70,000	4.34	303,800	152
Construction of Sigaba Way extension	31,025	4.34	134,649	67
Construction of surface parking	717,914	4.34	3,115,747	1,558
		Total	**38,781,852**	**19,391**

Source: USEPA 2009.
Key: ft^2 = square feet; lb = pounds; MOSF = Mission Operations Support Facility; TSA = Troop Support Area; WBC = Well-Being Center.

3.9.2.3 ALTERNATIVE 2

Potable Water Supply. Under Alternative 2, impacts on the potable water supply on Fort Meade would be similar to those described under Alternative 1, with additional impacts from construction of the CMSF. Assuming 35 gpd usage per person in an office building, with 2,935 additional personnel from outside Fort Meade reporting to CCD facilities, this would result in a net increase of approximately 102,725 gpd (0.103 mgd) of potable water used under Alternative 2, which represents an approximately 6 percent increase over current daily demand and well under the capacity as identified for Alternative 1. This would not substantially increase water consumption or require any renewal of permits.

Sanitary Sewer and Wastewater Treatment System. Under Alternative 2, impacts on the sanitary sewer and wastewater treatment system on Fort Meade would be similar to those described under Alternative 1, with additional impacts from construction of the CMSF. Temporary disruptions would occur during reconnection of the sanitary sewer lines to the CMSF. Preliminary calculations assume an additional 102,275 gpd (0.103 mgd) of wastewater generated from the associated 2,935 personnel on the MOSF, WBC, and CMSF. Considering the WWTP's average flow of 1.8 mgd, this would represent an approximately 6 percent increase. The WWTP would continue to be well under its maximum capacity as identified for Alternative 1 and would not require any additional modifications (NSA 2025). Upgrades to utility lines would also help better manage the added utility loadings on the NSA campus. See **Section 3.10** for discussion on impacts from use of reclaimed water for the MOSF and CMSF.

Stormwater Drainage. Impacts on stormwater drainage on Fort Meade under Alternative 2 would be similar to those described under Alternative 1, with a slight increase in runoff because of the construction of a new parking structure and the CMSF.

Additional runoff would be temporary during the construction period and would not exceed stormwater basin capacity.

Electrical Supply. Impacts on the electrical supply system on Fort Meade under Alternative 2 would be minor to moderate and slightly greater than those described under Alternative 1, with a slight increase in power draw from the CMSF and structured parking. The facility is estimated to require approximately 6,000 kilovolt-amperes of electrical load, with an expected requirement of 10 watts per square foot of electrification in the future. This would require three substations of 3,000 kilovolt-amperes each (CSS 2024).

Steam and Chilled-Water Systems. Impacts on steam and chilled-water systems under Alternative 2 would be similar to those described under Alternative 1, with a slight increase in demand from the CMSF. As noted for Alternative 1, increased demand could require an upgrade to the distribution system, although the Central Boiler Plant would still have enough capacity (NSA 2025).

Solid Waste. Impacts from solid-waste generation under Alternative 2 would be similar to, but slightly greater than, those described under Alternative 1. Construction of the CMSF would increase solid-waste generation. See **Table 3-10** for calculations of generation of solid waste. The total debris generated from construction and demolition activities would be approximately 19,600 tons. The increase of personnel on site would increase the generation of solid waste during MOSF, WBC, and CMSF operation, though it would likely be similar to the amount generated from the buildings on the TSA planned for demolition.

Table 3-10. Estimated Construction and Demolition Debris Generated from Implementation of Alternative 2

Phase	ft^2	Multiplier (lb/ft^2)	Debris Generated	
			lb	Tons
TSA building demolition	203,732	158	32,189,656	16,095
Construction of MOSF	700,000	4.34	3,038,000	1,519
Construction of WBC	70,000	4.34	303,800	152
Construction of CMSF	500,000	4.34	2,170,000	1,085
Construction of Sigaba Way extension	31,025	4.34	134,649	67
Construction of structured parking	310,800	4.34	1,348,872	674
		Total	**39,184,977**	**19,592**

Source: USEPA 2009.
Key: CMSF = Consolidated Mission Support Facility; ft^2 = square feet; lb = pounds; MOSF = Mission Operations Support Facility; TSA = Troop Support Area; WBC = Well-Being Center.

3.9.2.4 ALTERNATIVE 3

Potable Water Supply. Under Alternative 3, impacts on the potable water supply would be similar to those described for Alternatives 1 and 2, with additional impacts from construction of the IWSC. Assuming 35 gpd usage per person in an office building, with 3,685 additional personnel from outside Fort Meade reporting to CCD facilities, this would result in a net increase of approximately 128,975 gpd (0.13 mgd) of potable water used under Alternative 3, which represents an approximately 7 percent increase over

current daily demand and well under the capacity as identified for Alternative 1. This would not substantially increase water consumption or require any renewal of permits.

Sanitary Sewer and Wastewater Treatment System. Under Alternative 3, impacts on the sanitary sewer and wastewater treatment system would be similar to those described for Alternatives 1 and 2, with additional impacts from construction of the IWSC and WCPS. Temporary disruptions would occur during reconnection of the sanitary sewer lines to the IWSC. Preliminary calculations assume a total of 128,975 gpd (0.13 mgd) of wastewater generated from the associated 3,685 personnel on the MOSF, WBC, CMSF, and IWSC. Considering the WWTP's average flow of 1.8 mgd, this would represent an approximately 7 percent increase. The WWTP would continue to be well under its maximum capacity as identified for Alternative 1 and would not require any additional modifications (NSA 2025). Upgrades to the utility lines would also help better manage the added utility loadings on the NSA campus. See **Section 3.10** for discussion on impacts from use of reclaimed water for the MOSF and CMSF.

Stormwater Drainage. Impacts on stormwater drainage on Fort Meade under Alternative 3 would be similar to those described for Alternatives 1 and 2, with a slight increase in runoff due to construction of the IWSC along with the other facilities on the TSA. There would be no additional runoff for the WCPS site because it would be constructed over an entirely existing impervious parking lot.

Electrical Supply. Impacts on the electrical supply system on Fort Meade under Alternative 3 would be moderate and greater than those described for Alternatives 1 and 2, with an additional power draw from the IWSC and WCPS. This increase would still be within system capacity.

Steam and Chilled-Water Systems. Impacts on steam and chilled-water systems under Alternative 3 would be similar to those described for Alternatives 1 and 2, with a slight increase in demand from the IWSC. Demand for an upgrade to the distribution system would be increased, although the Central Boiler Plant would still have enough capacity for a slight increase in demand (NSA 2025).

Solid Waste. Impacts from solid-waste generation under Alternative 3 would be similar to, but greater than, those described under Alternative 2. Construction of the IWSC and WCPS would increase solid-waste generation. See **Table 3-11** for calculations of generation of solid waste. The total debris generated from construction and demolition activities would be approximately 21,700 tons. The increase of personnel on site would increase the generation of solid waste during MOSF, WBC, CMSF, and IWSC operation, though it would likely be similar to the amount generated from the buildings on the TSA planned for demolition.

3.9.2.5 NO ACTION ALTERNATIVE

Under the No Action Alternative, CCD construction at Fort Meade would not occur. Operations would remain decentralized across the NSA campus and leased facilities off campus and the existing conditions discussed in **Section 3.9.1** would remain unchanged. No additional resources would be consumed, though upgrades to utility lines may be required in the future. Therefore, no impacts on infrastructure would be expected.

Table 3-11. Estimated Construction and Demolition Debris Generated from Implementation of Alternative 3

Phase	ft^2	Multiplier (lb/ft^2)	Debris Generated	
			lb	Tons
TSA building demolition	203,732	158	32,189,656	16,095
Construction of MOSF	700,000	4.34	3,038,000	1,519
Construction of WBC	70,000	4.34	303,800	152
Construction of CMSF	500,000	4.34	2,170,000	1,085
Construction of IWSC	700,000	4.34	3,038,000	1519
Construction of Sigaba Way extension	31,025	4.34	134,649	67
Construction of WCPS	590,000	4.34	2,560,600	1,280
		Total	**43,434,705**	**21,717**

Source: USEPA 2009.
Key: CMSF = Consolidated Mission Support Facility; ft^2 = square feet; IWSC = Integrated Workforce Support Center; lb = pounds; MOSF = Mission Operations Support Facility; TSA = Troop Support Area; WBC = Well-Being Center; WCPS = West Campus Parking Structure.

3.9.2.6 REASONABLY FORESEEABLE EFFECTS

The Proposed Action, when combined with other reasonably foreseeable future projects discussed in **Section 2.5**, would result in short- and long-term, negligible to moderate, adverse impacts on infrastructure. The East Campus development and MOF project would generate the most solid waste among the reasonably foreseeable projects on Fort Meade. Any construction involved with the reasonably foreseeable projects would also increase utility loadings, which would expedite the need for upgrades to the utility lines. Any additional development on Fort Meade beyond the East Campus development would require installation of a lift station near the Fort Meade WWTP along MD 198 to address potential pressure issues with the sanitary sewer system as a result of projects increasing the system's load. A temporary increase in stormwater runoff would also be generated during demolition and construction, but would be minimized through the use of BMPs, as discussed in **Section 3.6**. The demands from these proposed projects when combined with the Proposed Action would be less than significant.

3.10 Sustainability

This section presents the affected environment and environmental consequences of the project as it relates to sustainability, including existing conditions and environmental consequences.

3.10.1 Existing Conditions

The ROI for the analysis of impacts on sustainability includes the project area.

Reclaimed Water. Reclaimed water is water that can be collected and reused, or repurposed for multiple uses including agricultural, irrigation, planned potable use, or industrial reuse purposes. The use of reclaimed water for the NSA East Campus reduces withdrawal from and reliance on the local aquifer. The reclaimed water program is relatively new and currently serves buildings on the eastern portion of the installation,

with expansion of the program planned for the rest of the NSA campus. Reclaimed water is used as makeup water in the HVAC cooling towers system and computing cooling. The reclaimed water system is in good condition and along with expansion would have sufficient capacity to support future demand for the NSA campus. Reclaimed water storage tanks help provide system redundancy. An elevated storage tank at Chaffee Hill serves the reclaimed water piping on the East Campus as a part of the East Zone Distribution loop. According to the 2025 NSA Campus Master Plan, the reclaimed water program at the NSA campus would continue to grow with development and eventually serve the high cooling demand facilities located in the West and East Campuses. Phase 2 of the program would extend the reclaimed water system to facilities on the West and Central Campuses. The Phase 3 follow-on effort would provide additional support to bring service to cooling towers across the campus. Both projects are intended to create a more comprehensive system that would reduce utility costs and provide an additional source of cooling water (NSA 2025).

Strategies for Efficient Stormwater Management. The existing stormwater system consists of swales, drains, and retention basins throughout the campus. The campus is divided into five stormwater drainage basins, which are defined by topography where stormwater flows into a common outfall discharge point. The current stormwater system has had several points of failure that have been addressed and stormwater management facilities in poor condition because of lack of maintenance. Stormwater retention basins throughout the installation are reaching capacity. Per Maryland stormwater regulations, ESD techniques to minimize stormwater runoff quantity and improve runoff quality are prioritized before considering installation of new stormwater retention basins. The current stormwater management system at the NSA campus is considered to be two components in differing stages of development, which are gradually being blended together into a single, cohesive operation according to the 2015 NSA Sustainability Plan (NSA 2015).

The NSA campus currently implements multiple strategies to support an effective and efficient stormwater management system. The main strategies used by the installation include stormwater retention areas, effective ESD (also known as low-impact development outside of Maryland), and use of natural stormwater mitigation methods. ESD planning is also a useful method for efficient stormwater management at Fort Meade when construction or development is taking place. ESD components at Fort Meade include the use of swales, drainage ditches, conveyance systems, and biologically based decentralized features. These features are designed to minimize the impact on the installation's stormwater system and reduce runoff rates into nearby water sources. ESD also emphasizes nonstructural construction techniques to more naturally manage stormwater and restore natural hydrologic functions of an area. Natural stormwater management methods include planting vegetation along pathways, parking lots, and other impervious-surface areas to increase absorption during precipitation events and throughout the installation to aid in water retention and reduce erosion. NSA has enlisted a "best scenario" case goal of a 40 percent reduction in untreated stormwater runoff or reduction in impervious surfaces (NSA 2015, 2025).

Energy and Materials Conservation. NSA strives to use efficient building materials and implement energy-saving practices whenever possible. The installation has been in

the process of increasing the number of buildings on campus that have the classification of Leadership in Energy and Environmental Design (LEED) Silver certification. LEED certifications are a green-building rating system used to provide a set of standards for environmentally sustainable buildings, established by the U.S. Green Building Council. LEED is a globally recognized program that symbolizes sustainability and provides a baseline for efficient, cost-saving buildings. In addition to LEED-certified building status, NSA has implemented sustainability features, specifically tailored to buildings that include vegetated roofs and horizontal surfaces (awnings, canopies, and walkways) and vertical structures (buildings façades and parking structure walls) as solar energy platforms to provide an energy source for buildings. The main objective for sustainable development at the installation is to integrate the natural systems of the campus in the siting and design of new facilities and infrastructure (AAC 2021b, NSA 2015).

3.10.2 Environmental Consequences

This section presents the environmental consequences of the project as it relates to sustainability, including evaluation criteria; Alternatives 1, 2, and 3 and the No Action Alternative; and reasonably foreseeable effects.

3.10.2.1 EVALUATION CRITERIA

A sustainability analysis would determine the viability of the Proposed Action with adherence to existing NSA, Fort Meade, DoD, and federal regulations/requirements associated with sustainable development and the efficient use of energy and other resources.

3.10.2.2 ALTERNATIVE 1

Reclaimed Water. Long-term, negligible to minor, beneficial impacts on the reclaimed water system would occur under Alternative 1. The primary makeup water for the cooling towers would be supplied by the reclaimed water system, reducing reliance on potable water used for cooling. Under Alternative 1, the proposed MOSF and WBC facilities would require a tie-in to the existing reclaimed water system. The nearest tie-in location to the system is located near the southeastern corner of the TSA area. A tie-in and use of the reclaimed water system from operations at the MOSF and WBC would contribute to the overall efficiency of water usage throughout the NSA campus and would relieve the strain on potable water needs.

Strategies for Efficient Stormwater Management. Long-term, negligible to minor, beneficial impacts are expected to occur on efficient stormwater management strategies under Alternative 1. Implementation of ESD planning and design during the construction stage would minimize adverse impacts on stormwater during construction activities. See **Section 3.9.1** for more discussion on stormwater impacts. The proposed MOSF and WBC facilities would require that stormwater features be designed to comply with MDE requirements to the maximum extent technically feasible and Section 438 of the EISA and facilitate LEED site development credits associated with stormwater management. Additionally, the proposed MOSF and WBC would comply with UFC 3-210-10 for ESD requirements for design toward a sustainable site (NSA 2015). Construction of the two facilities would also adhere to COMAR 26.17.02.08, requiring site planning and stormwater management that conserve natural features and drainage patterns and minimize impervious surface (AAC 2021b).

Energy and Materials Conservation. Short- and long-term, negligible to minor, beneficial impacts on energy and materials conservation are expected to occur under Alternative 1. Short-term impacts are expected to occur from the sustainable practice of reusing and recycling waste generated during construction and demolition whenever possible. The proposed MOSF and WBC would establish a recycling program for common recyclable materials including paper, plastics, materials, cardboards, glass, and metals. The MOSF and WBC facilities would be constructed using recycled materials where possible, including steel, ceiling panels, gypsum wallboards, and glass. An additional sustainability practice would include sourcing construction materials from local establishments near the installation. Using locally sourced materials would decrease energy used for transportation and reduce pollution. The proposed MOSF and WBC would adhere to efficient building development set forth in DoD, federal, and State regulations and guidance as described in **Appendix D**.

Long-term, beneficial impacts on energy and materials conservation is expected to occur in the operational phase under Alternative 1. Building design, pursuant to LEED certification and applicable regulations, would promote the efficiency of the MOSF and WBC facilities. Additionally, renewable-energy options including solar panels or wind energy would be used wherever possible throughout the project area and at the MOSF and WBC facilities to reduce energy demands in an operational phase.

3.10.2.3 ALTERNATIVE 2

Reclaimed Water. Impacts on reclaimed water would be similar to those as described under Alternative 1; however, tie-ins to the existing reclaimed water would be required for the proposed CMSF, MOSF, and WBC facilities, increasing the amount of reclaimed water that would be distributed to the system.

Strategies for Efficient Stormwater Management. Impacts on strategies for efficient stormwater management would be similar to those described under Alternative 1 for the proposed construction of the CMSF, MOSF, WBC, and parking structure in the TSA.

Energy and Materials Conservation. Impacts on strategies for energy and materials conservation would be similar to those described under Alternative 1 for the proposed CMSF, MOSF, WBC, and parking structure in the TSA.

3.10.2.4 ALTERNATIVE 3

Reclaimed Water. Impacts on reclaimed water would be similar to those as described under Alternative 2, with the addition of the IWSC. Tie-ins would be required for all four facilities, and operational conditions under Alternative 3 would contribute the highest amount of reclaimed water to the existing system at the campus.

Strategies for Efficient Stormwater Management. Impacts on strategies for efficient stormwater management would be similar to those described under Alternative 1 for the proposed construction of the MOSF, WBC, CMSF, and IWSC facilities in the TSA and the WCPS.

Energy and Materials Conservation. Impacts on energy and materials conservation would be similar to those described under Alternative 2 for the proposed construction of the MOSF, WBC, CMSF, and IWSC facilities in the TSA and the WCPS.

3.10.2.5 NO ACTION ALTERNATIVE

Under the No Action Alternative, CCD construction at Fort Meade would not occur. Operations would remain decentralized across the NSA campus and leased facilities off campus and the existing conditions discussed in **Section 3.10.1** would remain unchanged. Therefore, no new impacts on sustainability would be expected.

3.10.2.6 REASONABLY FORESEEABLE EFFECTS

Long-term, negligible to moderate, beneficial impacts on sustainability at Fort Meade and the NSA campus would be expected under the Proposed Action in combination with the reasonably foreseeable actions discussed in **Section 2.5**. Reasonably foreseeable effects of the Proposed Action combined with reasonably foreseeable projects aimed at development throughout Fort Meade, including the East Campus development, PAF, and CNMF, would benefit sustainability throughout the installation. Continued use of established “green” practices including meeting LEED standards, renewable-energy use, and reclaimed water, among others, would increase efficiency and promote long-term sustainability throughout the installation.

3.11 Hazardous Materials and Wastes

This section presents the affected environment and environmental consequences of the project as it relates to hazardous materials and wastes, including existing conditions and environmental consequences.

3.11.1 Existing Conditions

The ROI for the analysis of impacts on hazardous materials and wastes includes the project area and adjacent areas.

Hazardous Materials and Petroleum Products. Hazardous materials and petroleum products, including but not limited to fuels, dielectric fluid, pesticides, cleaners, and hydraulic fluids, are used, stored, and transported throughout the NSA campus and various facilities throughout Fort Meade. An Installation Hazardous Waste Management Plan (HWMP) and P2 Plan are in place at Fort Meade. These plans identify installation-specific personnel responsibilities and waste management procedures for the identification, management, transport, spill response, and reduction of hazardous materials and waste.

NSA and Fort Meade operate under separate SPCC Plans, and the NSA campus also operates under a Facility Response Plan (FRP), as required under 40 CFR 112, *Oil Pollution Prevention*. The SPCC Plans identify locations of bulk petroleum product storage, operations and management controls, spill response, and BMPs to prevent and minimize impact of use and storage of these products on the environment (NSA 2019a, Fort Meade 2022b). FRPs are associated with response planning action and demonstrate a facility’s preparedness to respond during a worst-case scenario discharge of oil (NSA 2019b).

Hazardous and Petroleum Wastes. The NSA campus at Fort Meade generates greater than 1,000 kilograms of hazardous waste, or more than 1 kilogram of acute hazardous waste per month, and is thereby permitted as a Resource Conservation and

Recovery Act (RCRA) Large Quantity Generator through USEPA (USEPA identifier MD2970590004) (USEPA 2025c, U.S. Army 2021). Under NSA practices, a Hazardous Waste Generator's Guide identifies personnel roles and responsibilities for waste stream identification and inventory, hazardous-waste management, pollution prevention, training, and emergency response (NSA 2017).

Storage Tanks and Oil/Water Separators (OWSs). Fuel tanks, including underground storage tanks (USTs) and aboveground storage tanks (ASTs), are located throughout the NSA campus for various operational purposes including the use of fuel for generators. Based on available information, four generators with associated ASTs and three other ASTs are present within the project area, and no USTs are present. Based on the 2023 Site Management Plan (SMP) Annual Update for Fort Meade, a former UST was present and identified to have leaked or had the potential to leak within the TSA (Area of Interest [AOI] FGGM-75). The UST has been removed and closed in accordance with regulatory requirements with a No Further Action (NFA) issued by USEPA on February 23, 2012 (USACE 2023c). Currently, two generators and an AST are located near Building 9802 and two ASTs are located near Building 9829.

Pesticides. Per U.S. Department of Defense Instruction (DoDI) 4150.07, *DoD Pest Management Program*, NSA minimally uses pesticides. The Army also has established an Integrated Pest Management approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks. Pesticides may have historically been used within the project area; however, no known spills have occurred, and no bulk pesticide storage is present.

Asbestos. Asbestos-containing materials (ACMs) at Fort Meade, including building components associated with the NSA campus, are managed according to the Fort Meade Asbestos Management Program, which identifies personnel responsibilities, required qualifications and training, asbestos survey and assessment requirements, maintenance and operations procedures, required personal protective equipment (PPE), and record retention requirements (Fort Meade 2008). Because of ACM regulations, asbestos is less likely to be present in buildings constructed after the 1980s. Existing structures within the project area may contain ACMs because they were constructed prior to 1980.

Lead-Based Paint (LBP). The Fort Meade Lead Hazard Management Plan is used for the management of LBP within the boundaries of Fort Meade, which include the NSA campus. The plan identifies procedures for identification and control of LBP hazards. The structures present within the project area were constructed prior to 1978 and therefore are assumed to contain LBP.

Polychlorinated Biphenyls (PCBs). Potential PCB-containing materials present within the proposed sites include electric light ballasts, capacitors, and electrical surge protectors located within the existing buildings and infrastructure. Records denote that an approximately 2-foot area of PCB-contaminated concrete was identified in a transformer vault located at Building 9803.The impacted area was encapsulated and USEPA granted a one-time waiver in July 1993, waiving the requirement to remove the contaminated concrete if (1) the release was identified on the property deed and (2) re-testing of the area was completed within 3 years to evaluate if PCBs were appropriately

contained (Fort Meade 1993). No additional areas of PCB contamination within the project area were identified. PCB-containing waste is managed under the Fort Meade HWMP.

Radon. Radon is a radioactive gas that forms naturally when uranium, thorium, or radium naturally degrades in rocks, soil, and/or groundwater. Radon gas at levels greater than 4 picoCuries per liter (pCi/L) is considered to represent a health risk. According to the USEPA online Radon Zone Map, Anne Arundel County is in Radon Zone 2—areas predicted to average indoor radon screening levels from 2 to 4 pCi/L. In 1990, an installation-wide radon screening survey was conducted, and all radon levels were below 4 pCi/L (USEPA 2025d).

Environmental Contamination and Ordnance. Under the Defense Environmental Restoration Program, DoD installations are to identify, investigate, and clean up contaminated sites. The Fort Meade SMP identified and summarizes the status and cleanup strategy for known or potentially contaminated sites, including sites within the NSA campus. Each contaminated site identified is referenced as an AOI. According to the 2023 Fort Meade SMP Annual Update, two AOIs are present within the project area. Two of the barracks (Buildings 9802 and 9803) (Non-Solid Waste Management Units [SWMUs] 12 and 13) are located within AOI identifier FGGM-96 (OU-46). These buildings were evaluated during a SWMU survey in 1996 and found to have no evidence or known release of hazardous substances. USEPA issued an NFA for this AOI on June 15, 2011. The Training Area Munitions Response Site, which was part of a former mortar range, is located within the eastern portion of the project area (AOI identifier FGGM-003-R-02-01 [OU-40]). A risk evaluation of this site identified low probability for human receptors to encounter munitions and explosives of concern. Land use control inspections and surface sweeps are ongoing at this site. AOI identifier FGGM-75 (OU-30) is also located within the project area. USTs installed prior to 1984 were located within this area with known or potential releases. All pre-1984 USTs have been removed and remediated with approved closure, and USEPA issued an NFA on February 2, 2011 (USACE 2023c).

3.11.2 Environmental Consequences

This section presents the environmental consequences of the project as it relates to hazardous materials and wastes, including evaluation criteria; Alternatives 1, 2, and 3 and the No Action Alternative; and reasonably foreseeable effects.

3.11.2.1 EVALUATION CRITERIA

Impacts on hazardous materials and waste could be considered significant if a proposed action resulted in an increase in hazardous materials or wastes generated, used, stored, or required disposal that resulted in noncompliance of applicable federal or State regulatory requirements; wastes generated beyond current management procedures or capabilities, or that resulted in major release episodes of ACMs, LBP, or PCBs; and contaminated sites that cause negative effects on human health and the environment.

3.11.2.2 ALTERNATIVE 1

Hazardous Materials, Hazardous Wastes, and Petroleum Products. Short- and long-term, negligible, adverse impacts could occur from the use of hazardous materials and petroleum products and the generation of hazardous wastes during construction and operation under Alternative 1. Any hazardous materials, petroleum products, or hazardous wastes stored within the boundary of construction would be removed and properly disposed of in accordance with regulatory and policy requirements. Hazardous materials that would be used during site development activities include paints, welding gases, solvents, preservatives, and sealants. Additionally, hydraulic fluids and petroleum products, such as diesel and gasoline, would be used in many of the heavy vehicles and equipment needed for the implementation of this alternative. Fort Meade operates under a Facility Consent Decree under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); therefore, any hazardous materials discovered during construction of the MOSF and WBC would be addressed in accordance with the Consent Decree (NSA 2017).

Long-term, negligible, adverse impacts could occur from the use of hazardous materials and the generation of hazardous waste during operation of the proposed MOSF and WBC. Minimal quantities of hazardous materials and waste would result from day-to-day operations because of use of various chemicals for cleaning and equipment needs. All hazardous materials and waste would be managed in accordance with the HWMP, P2 Plan, and applicable installation-specific guidelines. The emergency generator to be installed under the Proposed Action would require installation of an AST for fuel storage, thus requiring recurring fuel deliveries. Dependent upon the volume of the AST, applicable State or local tank registrations may be required, and BMPs under the SPCC Plans and FRP would be used to minimize impacts associated with spills or releases. All hazardous materials, petroleum products, and hazardous wastes would be handled, stored, and disposed of in accordance with regulatory and policy requirements.

Storage Tanks and Oil/Water Separators. Short- and long-term, negligible, adverse impacts on storage tanks and OWSs could occur from temporary storage of fuel during construction and permanent storage of the fuel required for emergency power generation under Alternative 1. On-site storage of petroleum products for construction and demolition equipment would be accomplished through the installation of temporary ASTs for fuel. Installation and maintenance of temporary ASTs would adhere to BMPs in the SPCC Plans and FRP and applicable federal and State regulations. The temporary ASTs would be removed following completion of the Proposed Action. Any existing ASTs associated with the buildings proposed for demolition would also be removed in accordance with applicable federal and State regulations. Four emergency generators and three ASTs are currently located at the TSA.

Long-term, negligible, adverse impacts could occur from the use of petroleum storage tanks. The emergency generator to be installed under Alternative 1 would require installation of an AST for fuel storage, thus requiring recurring fuel deliveries. Based on the volume of the tanks, applicable State or local tank registrations may be required and BMPs under the SPCC Plans and FRP would be used to minimize impacts associated with spills or releases, such as use of secondary containment systems, leak detection systems, and alarm systems.

Permanent storage tanks would be installed and maintained in accordance with applicable federal and State regulations.

Pesticides. No impacts from pesticides would be anticipated because of implementation of installation-specific practices according to the Fort Meade Integrated Pest Management Plan and the DoD Instruction, and because no substantial on-site storage of pesticides would be associated with the Proposed Action.

ACMs. Short-term, minor, adverse, and long-term, negligible, beneficial impacts could occur from handling and disposal of ACMs during demolition under Alternative 1. Adverse impacts could occur from the demolition of all existing buildings in the TSA including three barracks (Buildings 9802, 9803, 9804); one administrative/office building (Building 9805); Six Hats Dining Hall; and Eagle Fitness Center because these buildings likely contain ACMs based on time of construction (prior to the 1980s). The structures would be surveyed for asbestos by a licensed contractor to ensure that appropriate measures would be taken during demolition to reduce potential exposure to, and release of, asbestos. Asbestos abatement and demolition contractors would wear appropriate PPE and would be required to adhere to all federal, State, and local regulations and the Fort Meade Asbestos Management Program. Additionally, any ACM-containing transite pipes in the construction area would be remediated as part of site development.

Long-term, negligible, beneficial impacts could occur because of removal of ACMs and a potential exposure route to personnel and reducing the amount of building materials that require management under the Fort Meade Asbestos Management Program. Army policy prohibits the use of ACMs for new construction when asbestos-free substitute materials exist.

LBP. Short-term, minor, adverse, and long-term, negligible, beneficial impacts could occur from handling and disposal of LBP during demolition under Alternative 1. Adverse impacts could occur from the demolition of all existing buildings in the TSA including three barracks (Buildings 9802, 9803, 9804); one administrative/office building (Building 9805); Six Hats Dining Hall; and Eagle Fitness Center because the buildings likely contain LBP based on time of construction (prior to 1978). Structures would be surveyed for LBP by a licensed contractor, or the building materials would be assumed to contain LBP. Demolition-related building materials containing LBP can be disposed of at a USEPA-approved landfill without removing or encapsulating the LBP prior to disposal. Appropriate PPE would be used to minimize impacts on demolition workers and implementation of the Fort Meade Lead Hazard Mitigation Plan and applicable regulatory requirements would be used to ensure minimal impact to the environment.

Long-term, negligible, beneficial impacts could occur because of removal of LBP, thus removing a potential exposure route of lead to personnel and reducing the amount of building materials that require management under the Lead Hazard Mitigation Plan. Federal law prohibits the use of LBPs in new construction.

PCBs. Short-term, negligible, adverse and long-term, negligible, beneficial impacts could occur from handling and disposal of PCBs during demolition under Alternative 1. Short-term, negligible, adverse impacts could occur from handling and disposal of any

PCB-containing equipment encountered during demolition under Alternative 1. Any potential PCB-containing equipment not labeled PCB-free or missing date-of-manufacture labels would be assumed to contain PCBs and would be sampled, removed, and handled in accordance with applicable regulatory requirements and the NSA HWMP. PCB-containing materials would be transported and disposed of as hazardous waste. The approximate 2 ft^2 area of PCB-contaminated concrete and soil beneath the floor in the basement transformer vault of Building 9803 would be excavated and properly disposed of during building demolition.

Long-term, negligible, beneficial impacts could occur from the removal of the PCB-contaminated concrete in Building 9803 and any PCB-containing equipment within the buildings and infrastructure at Alternative 1, thus removing a potential exposure route to personnel. Federal law prohibits the use of PCBs in new construction.

Radon. No impacts from radon would be encountered. Based on the results of past radon sampling events at Fort Meade, it is unlikely that levels of radon inside of any of the proposed buildings would exceed the acceptable thresholds. Under Alternative 1, proper ventilation would be incorporated into all new building system designs.

Environmental Contamination and Ordnance. Short-term, minor, adverse impacts could occur during the land-clearing, excavation, and grading phases of construction because the eastern portion of Alternative 1 is within AOI FGGM-003-R-02 (Training Area Munitions Response Site). AOI FGGM-003-R-02 is managed through long-term land use controls, which include obtaining dig permits from Fort Meade for any intrusive activity. Construction of the proposed CCD would respect the land use controls and comply with all necessary requirements. Controls, including dig permits, must be obtained from Fort Meade for any intrusive activity, unexploded ordnance (UXO) construction support for intrusive construction projects, and UXO avoidance procedures. Additionally, a UXO specialist would be available in the event of the discovery of suspected materials during earth-disturbance activities. A stop-work order would be required if ordnance were encountered during implementation of the Proposed Action. Contractors and site personnel are required to immediately report the discovery of munitions and explosives of concern to the installation and implement appropriate safety measures. All ordnance would be collected and disposed of by trained and certified personnel in accordance with federal and Army regulations. Commencement of field activities would not continue in the impacted area until the issue is resolved. Once construction of the MOSF is complete, Fort Meade would continue to perform long-term management on FGGM-003-R-02. If soil contamination were to be encountered during construction or demolition activities, NSA would obtain the appropriate permits from MDE.

Two other documented environmental contamination sites are associated with this alternative: FGGM-96 and FGGM-75. No impacts on hazardous materials and wastes would occur for FGGM-96 and FGGM-75 because these sites are closed with NFAs issued by USEPA.

3.11.2.3 ALTERNATIVE 2

Impacts on hazardous materials and wastes for Alternative 2 would be the same as those described for Alternative 1. Additional quantities of hazardous materials,

petroleum products, and hazardous waste may be required during construction because of the larger scope of construction compared to Alternative 1. Under this alternative, structured parking would replace surface parking.

3.11.2.4 ALTERNATIVE 3

Impacts on hazardous materials and wastes for Alternative 3 would be similar to, but slightly greater than, those described in Alternative 1. Additional quantities of hazardous materials, petroleum products, and hazardous waste may be required during construction because of the larger scope of construction compared to Alternatives 1 and 2. Under this alternative, all development included under Alternatives 1 and 2 would occur, and construction of the IWSC in the northwest portion of the TSA. The WCPS would be constructed north of the administrative facilities in an existing surface parking lot.

3.11.2.5 NO ACTION ALTERNATIVE

Under the No Action Alternative, CCD construction at Fort Meade would not occur. Operations would remain decentralized across the NSA campus and leased facilities off campus, and the existing conditions discussed in **Section 3.11.1** would remain unchanged. Therefore, no impacts on hazardous materials and wastes would be expected.

3.11.2.6 REASONABLY FORESEEABLE EFFECTS

Short- and long-term, negligible to minor, adverse, reasonably foreseeable effects on hazardous materials and wastes could occur under the Proposed Action as a result of handling, storage, and disposal of hazardous and toxic materials and generation of hazardous wastes during construction and operations. In combination with the reasonably foreseeable future projects discussed in **Section 2.5**, reasonably foreseeable effects would be similar. Negligible, beneficial, reasonably foreseeable effects could also occur from the demolition of buildings containing ACMs, LBP, and PCBs. Hazardous materials, hazardous wastes, and petroleum products would be managed and disposed of according to regulatory requirements and according to applicable guidance and planning documents.

3.12 Socioeconomics

This section presents the affected environment and environmental consequences of the project as it relates to socioeconomics, including existing conditions and environmental consequences.

3.12.1 Existing Conditions

The ROI for the analysis of impacts on socioeconomics is defined as Fort Meade.

Fort Meade is Maryland’s largest employer and is the third-largest installation by population in the U.S. Fort Meade and the NSA together generate approximately $17.8 billion in economic activity in Maryland, averaging approximately 49.4 percent of the total $36.0 billion in economic impact from all military installations. Fort Meade and the NSA create/support 125,729 jobs earning an estimated $9.2 billion in employee compensation. Direct employment from Fort Meade and the NSA of 48,389 accounts for

1.4 percent of all employment in Maryland. When multiplier impacts are included, the 125,729 jobs in and created or supported by Fort Meade and the NSA account for 3.6 percent of all employment in Maryland (Fort Meade Alliance 2024).

3.12.2 Environmental Consequences

This section presents the environmental consequences of the project as it relates to socioeconomics, including evaluation criteria; Alternatives 1, 2, and 3 and the No Action Alternative; and reasonably foreseeable effects.

3.12.2.1 EVALUATION CRITERIA

Impacts on socioeconomics would be considered significant if they were to cause substantial change to the sales volume, income, employment, or population in the ROI. The ROI was selected because it best represents the geographic area where impacts would occur. Socioeconomic considerations typically include construction cost and the local economic benefits consequent to increases in personnel.

3.12.2.2 ALTERNATIVE 1

Short- and long-term, negligible to minor, beneficial impacts are expected to occur under Alternative 1. Short-term, beneficial impacts to the surrounding area are expected to occur from an increased flow of commerce. The use of locally sourced construction materials and construction jobs would stimulate regional economic activity in the areas surrounding Fort Meade. Long-term, negligible to minor, beneficial impacts to socioeconomics would be expected from the additional 1,285 personnel that would be introduced onto the NSA campus at Fort Meade under Alternative 1 in an operational phase. Increased local spending by the additional personnel commuting to Fort Meade by employee families/dependents relocating to the area.

3.12.2.3 ALTERNATIVE 2

Impacts on socioeconomic resources under Alternative 2 would be similar to those described for Alternative 1, although an increase in personnel is expected. Under Alternative 2, an addition of 2,935 personnel and potential dependents is expected. Therefore, additional economic benefits would occur.

3.12.2.4 ALTERNATIVE 3

Impacts on socioeconomic resources under Alternative 3 would be similar to those described for Alternative 1, although an increase in personnel is expected. Under Alternative 3, an addition of 3,685 personnel and potential dependents is expected. Therefore, additional economic benefits occur.

3.12.2.5 NO ACTION ALTERNATIVE

Under the No Action Alternative, CCD construction at Fort Meade would not occur. Operations would remain decentralized across the NSA campus and leased facilities off campus and the existing conditions discussed in **Section 3.12.1** would remain unchanged. Therefore, no changes to existing socioeconomic conditions would occur.

3.12.2.6 REASONABLY FORESEEABLE EFFECTS

Short- and long-term, negligible to minor, beneficial impacts on socioeconomic resources would be expected to occur under the Proposed Action in combination with

the reasonably foreseeable actions discussed in **Section 2.5**. Short-term, beneficial impacts would be expected from the use of locally sourced materials and construction jobs from the proposed development projects including the roadway improvements and access control points, East Campus development, ORAM, and construction of the PAF and MOF. Long-term, beneficial impacts would be expected to occur from the introduction of employees to NSA and Fort Meade. Approximately 900 personnel from off site would be relocated to NSA and Fort Meade associated with the operations of the PAF and MOF. Both short- and long-term impacts would be expected to generate increased flow of commerce and benefit the regional economy surrounding Fort Meade.

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4. References

Short Citation	Full Reference
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AAC 2021b	AAC. 2021. Anne Arundel County Green Infrastructure Master Plan and Green Infrastructure Appendices. October.
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This EA has been prepared by the HDR-Tehama Joint Venture (JV), under the direction of DoD. The individual HDR-Tehama JV contractors who contributed to the preparation of this document are listed as follows.

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Interagency Coordination and Public Involvement

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Appendix A: Interagency Coordination and Public Involvement

Stakeholder Distribution List

The following agencies and individuals were sent agency coordination letters as part of the EA process:

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Nedrow, NY 13120

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Tuscarora Nation of New York
5226 Walmore Road
Lewistown, NY 14092

Sample General Agency Scoping Letter

NATIONAL SECURITY AGENCY
CENTRAL SECURITY SERVICE
Fort George G. Meade, Maryland 20755

Mr. Chris Phipps
Anne Arundel County
Department of Public Works
Heritage Office Complex
2664 Riva Road
Annapolis, MD 21401

RE: Environmental Assessment (EA) for the National Security Agency (NSA) Central Campus Development (CCD) at Fort George G. Meade, Maryland

Dear Interested Party,

In accordance with the National Environmental Policy Act (NEPA), the NSA is announcing its intent to prepare an EA as part of the environmental planning process for the CCD at Fort George G. Meade, Maryland.

The proposed CCD would include construction of four new buildings, a parking structure, and the Sigaba Way extension from its current terminus through Canine Road to allow for shuttle bus access from the Main and Central Campus to the East Campus. Construction of related appurtenances to sidewalks, inspection canopies, vehicle safety, line safety generators, mission support generators, access roads, utilities and related infrastructure are also included in the proposal. Details of the proposed CCD are provided below:

- Construction of the 700,000 Square Foot (SF) Cyber National Mission Force (CNMF) Mission Operations Support Facility (MOSF) for a planned occupancy of 2,500 persons (50 percent currently on Campus, 50 percent planned from new hires or off Campus).
- Construction of a 500,000 SF Consolidated Military Support Facility (CMSF) for a planned occupancy of 2,200 persons (25 percent currently on Campus, 75 percent planned from new hires or off Campus from National Business Park leased spaces).
- Construction of a 700,000 SF Workforce Support Services Facility (WSSF) for a planned occupancy of 2,500 persons (70 percent currently on Campus, 30 percent planned from new hires or off **Campus).**
- Construction of the West Campus Parking Structure (WCPS) supporting 2,300 vehicles in a multi-level parking facility.
- Construction of a 70,000 SF Well-Being Center (WBC) for a planned occupancy of 70 people (50 percent currently on Campus, 50 percent planned from new hires or off Campus), including a fitness center of 20,000 SF. The WBC would also include 40,000 SF of outdoor amenity/garden space.
- Site preparation would include demolition of any relevant existing structures and infrastructure in the Troop Support Area (TSA), in which nearly all the proposed facilities would be constructed, with the exception of the WCPS under Alternative 3.

Multiple alternatives are being considered for the CCD. Figure 1 in the attachment below shows the project area for the CCD and illustrates the Alternative 3 configuration within it. Alternative 1 includes construction of the MOSF, the WBC, and the Sigaba Way extension; demolition of all existing buildings in the TSA; and the conversion of the remainder of the TSA to surface parking. Alternative 2 includes all development proposed under Alternative 1 as well as construction of the CMSF and structured parking (at the northeast corner of Canine Road and Emory Road) in place of surface parking. Alternative 3 (Preferred

Alternative) includes all development proposed in Alternative 1 and 2, as well as construction of the WSSF and proposes constructing the WCPS north of Canine Road in an existing surface parking lot.

The NSA anticipates that the proposed CCD would result in minor adverse impacts to resource areas during construction and would provide overall long-term beneficial impacts on land use. Detailed analysis of the project impacts will be provided in the Draft EA, which is anticipated to be available for public review in late Summer 2025.

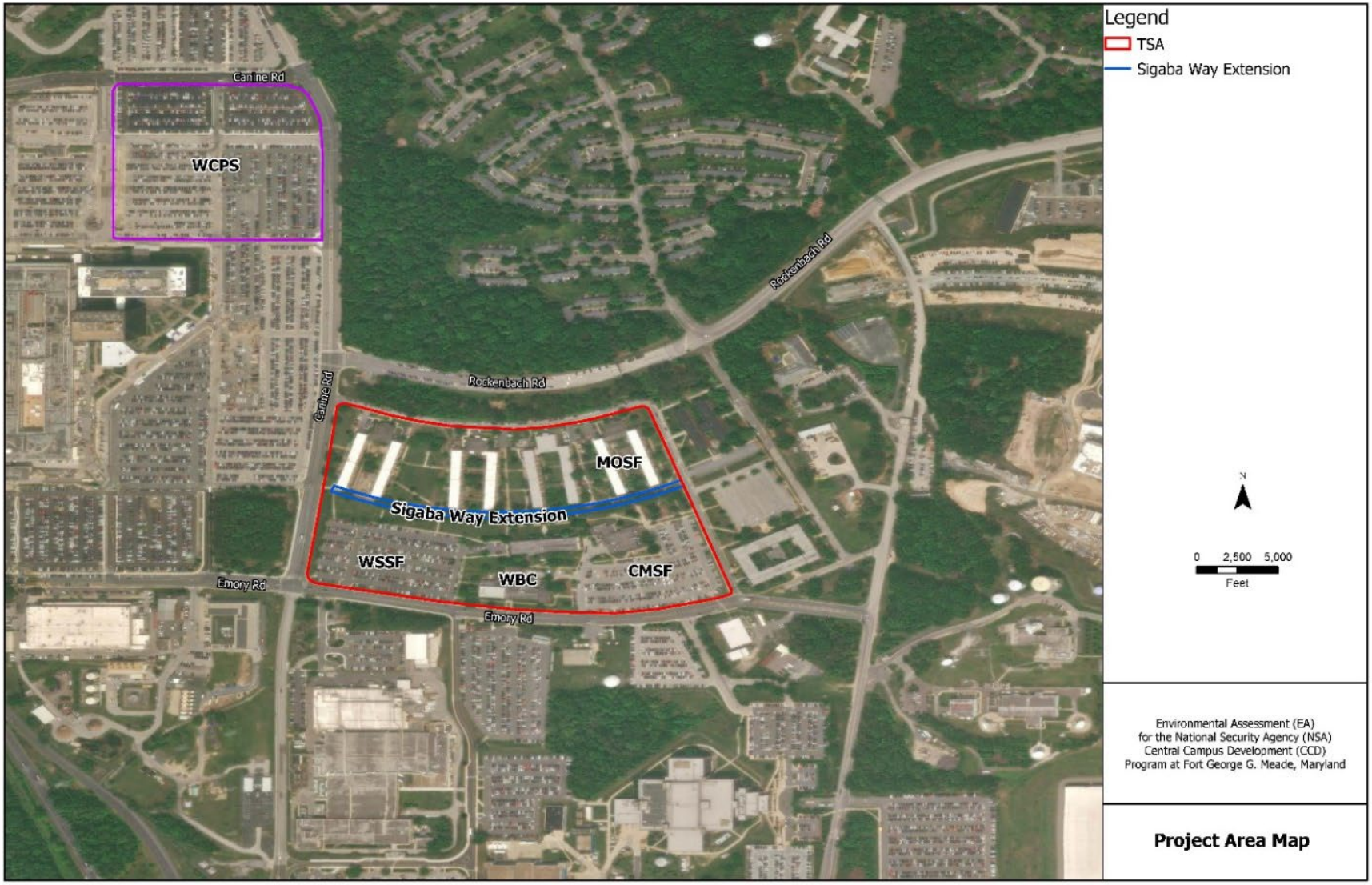
The purpose of this correspondence is to solicit your scoping comments regarding environmental aspects of the proposed project. To assist us in complying with NEPA and Executive Order 12372, *Intergovernmental Review of Federal Programs*, (as amended by EO 12416), and in identifying environmental issues that might affect the design or implementation of the project, we request that you provide appropriate comments within your area of expertise, within 30 days of receipt of this letter, to CCD EA, c/o HDR, 2650 Park Tower Drive, Suite 400, Vienna, VA 22180 or via email at jdwill2@nsa.gov.

Your input and comment are greatly appreciated. If you have any questions, please contact me at (301) 688-2970. Thank you for your interest.

Sincerely,
Jeffrey D. Williams

Jeffrey D. Williams, LEED-AP
Sr. Environmental Engineer
NSA Sustainability and Environmental Compliance

Attachment
Figure 1. Project Area Map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Environmental Assessment (EA)
for the National Security Agency (NSA)
Central Campus Development (CCD)
Program at Fort George G. Meade, Maryland
Project Area Map

SHPO Scoping Letter

NATIONAL SECURITY AGENCY
CENTRAL SECURITY SERVICE
Fort George G. Meade, Maryland 20755

Elizabeth Hughes
Director/State Historic Preservation Officer
Maryland Historical Trust
100 Community Place
Crownsville, MD 21032

RE: Environmental Assessment (EA) for the National Security Agency (NSA)
Central Campus Development (CCD) at Fort George G. Meade, Maryland

Dear Ms. Hughes,

In accordance with the National Environmental Policy Act (NEPA), the NSA is announcing its intent to prepare an EA as part of the environmental planning process for the CCD at Fort George G. Meade, Maryland.

The proposed CCD would include construction of four new buildings, a parking structure, and the Sigaba Way extension from its current terminus through Canine Road to allow for shuttle bus access from the Main and Central Campus to the East Campus. Construction of related appurtenances to sidewalks, inspection canopies, vehicle safety, line safety generators, mission support generators, access roads, utilities and related infrastructure are also included in the proposal. Details of the proposed CCD are provided below:

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Alternative) includes all development proposed in Alternative 1 and 2 as well as construction of the WSSF and proposes constructing the WCPS north of Canine Road in an existing surface parking lot.

The NSA anticipates that the proposed CCD would result in minor adverse impacts to resource areas during construction and would provide overall long-term beneficial impacts on land use. As part of the 2017 *East Campus Integration Program (ECIP) Environmental Impact Statement (EIS),* facilities within the TSA were specifically evaluated for historic eligibility. The evaluation found that the buildings in the TSA were determined not eligible for the National Register of Historic Properties (NRHP). The Maryland Historical Trust responded on February 12, 2016, that two buildings elsewhere on the NSA Campus outside the TSA are eligible and did not object to the not eligible determination for the buildings in the TSA. The height of the proposed WCPS would be up to 10 stories in height and would not be greater than that of the existing structures in the area and, therefore, is not anticipated to create new viewshed impacts to the historic Baltimore-Washington Parkway. Detailed analysis of the project impacts will be provided in the Draft EA, which is anticipated to be available for public review in late Summer 2025.

The purpose of this correspondence is to solicit your comments regarding environmental aspects of the proposed project. To assist us in complying with NEPA and Executive Order 12372, *Intergovernmental Review of Federal Programs*, (as amended by EO 12416), and in identifying environmental issues that might affect the design or implementation of the project, we request that you provide appropriate comments within your area of expertise, within 30 days of receipt of this letter, to CCD EA, c/o HDR, 2650 Park Tower Drive, Suite 400, Vienna, VA 22180 or via email at jdwill2@nsa.gov.

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Sincerely,
Jeffrey D. Williams

Jeffrey D. Williams, LEED-AP
Sr. Environmental Engineer
NSA Sustainability and Environmental Compliance

Attachment
Figure 1. Project Area Map

National Park Service Scoping Letter

NATIONAL SECURITY AGENCY
CENTRAL SECURITY SERVICE
Fort George G. Meade, Maryland 20755

Catherine Dewey
Program Manager for Resource Management
National Capital Parks-East
National Park Service
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Washington, DC 20020

RE: Environmental Assessment (EA) for the National Security Agency (NSA) Central Campus Development (CCD) at Fort George G. Meade, Maryland

Dear Ms. Dewey,

In accordance with the National Environmental Policy Act (NEPA), the NSA is announcing its intent to prepare an EA as part of the environmental planning process for the CCD at Fort George G. Meade, Maryland.

The proposed CCD would include construction of four new buildings, a parking structure, and the Sigaba Way extension from its current terminus through Canine Road to allow for shuttle bus access from the Main and Central Campus to the East Campus. Construction of related appurtenances to sidewalks, inspection canopies, vehicle safety, line safety generators, mission support generators, access roads, utilities and related infrastructure are also included in the proposal. Details of the proposed CCD are provided below:

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- Construction of the West Campus Parking Structure (WCPS) supporting 2,300 vehicles in a multi-level parking facility.
- Construction of a 70,000 SF Well-Being Center (WBC) for a planned occupancy of 70 people (50 percent currently on Campus, 50 percent planned from new hires or off Campus), including a fitness center of 20,000 SF. The WBC would also include 40,000 SF of outdoor amenity/garden space.
- Site preparation would include demolition of any relevant existing structures and infrastructure in the Troop Support Area (TSA), in which nearly all the proposed facilities would be constructed, with the exception of the WCPS under Alternative 3.

Multiple alternatives are being considered for the CCD. Figure 1 in the attachment below shows the project area for the CCD and illustrates the Alternative 3 configuration within it. Alternative 1 includes construction of the MOSF, the WBC, and the Sigaba Way extension; demolition of all existing buildings in the TSA; and the conversion of the remainder of the TSA to surface parking. Alternative 2 includes all development proposed under Alternative 1 as well as construction of the CMSF and structured parking (at the northeast corner of Canine Road and Emory Road) in place of surface parking. Alternative 3 (Preferred

Alternative) includes all development proposed in Alternative 1 and 2, as well as construction of the WSSF and proposes constructing the WCPS north of Canine Road in an existing surface parking lot.

The NSA anticipates that the proposed CCD would result in minor adverse impacts to resource areas during construction and would provide overall long-term beneficial impacts on land use. As part of the 2017 *East Campus Integration Program (ECIP) Environmental Impact Statement (EIS),* facilities within the TSA were specifically evaluated for historic eligibility. The evaluation found that the buildings in the TSA were determined not eligible for the National Register of Historic Properties (NRHP). The height of the proposed WCPS would be up to 10 stories and would not be greater than that of the existing structures in the area and, therefore, would not be anticipated to create new viewshed impacts to the historic Baltimore-Washington Parkway. Detailed analysis of the project impacts will be provided in the Draft EA, which is anticipated to be available for public review in late Summer of 2025. Additionally, in May 2024 as part of the CNMF EA, the NSA reached out to requesting comments regarding environmental aspects of the proposed project which included the WCPS. While the CCD is a separate action, it does evaluate the WCPS as an alternative parking facility.

The purpose of this correspondence is to solicit your comments regarding environmental aspects of the proposed project. To assist us in complying with NEPA and Executive Order 12372, *Intergovernmental Review of Federal Programs,* (as amended by EO 12416), and in identifying environmental issues that might affect the design or implementation of the project, we request that you provide appropriate comments within your area of expertise, within 30 days of receipt of this letter, to CCD EA, c/o HDR, 2650 Park Tower Drive, Suite 400, Vienna, VA 22180 or via email at jdwill2@nsa.gov.

Your input and comment are greatly appreciated. If you have any questions, please contact me at (301) 688-2970. Thank you for your interest.

Sincerely,
Jeffrey D. Williams

Jeffrey D. Williams, LEED-AP
Sr. Environmental Engineer
NSA Sustainability and Environmental Compliance

Attachment
Figure 1. Project Area Map

Sample Tribal Scoping Letter

NATIONAL SECURITY AGENCY
CENTRAL SECURITY SERVICE
Fort George G. Meade, Maryland 20755

Rickey L. Armstrong, Sr., President
Seneca Nation of New York
12837 Route 438
Irving, NY 14081

RE: Environmental Assessment (EA) for the National Security Agency (NSA) Central Campus Development (CCD) at Fort George G. Meade, Maryland

Dear President Armstrong,

In accordance with the National Environmental Policy Act (NEPA), the NSA is announcing its intent to prepare an EA as part of the environmental planning process for the CCD at Fort George G. Meade, Maryland.

The proposed CCD would include construction of four new buildings, a parking structure, and the Sigaba Way extension from its current terminus through Canine Road to allow for shuttle bus access from the Main and Central Campus to the East Campus. Construction of related appurtenances to sidewalks, inspection canopies, vehicle safety, line safety generators, mission support generators, access roads, utilities and related infrastructure are also included in the proposal. Details of the proposed CCD are provided below:

- Construction of the 700,000 Square Foot (SF) Cyber National Mission Force (CNMF) Mission Operations Support Facility (MOSF) for a planned occupancy of 2,500 persons (50 percent currently on Campus, 50 percent planned from new hires or off Campus).
- Construction of a 500,000 SF Consolidated Military Support Facility (CMSF) for a planned occupancy of 2,200 persons (25 percent currently on Campus, 75 percent planned from new hires or off Campus from National Business Park leased spaces).
- Construction of a 700,000 SF Workforce Support Services Facility (WSSF) for a planned occupancy of 2,500 persons (70 percent currently on Campus, 30 percent planned from new hires or off **Campus).**
- Construction of the West Campus Parking Structure (WCPS) supporting 2,300 vehicles in a multi-level parking facility.
- Construction of a 70,000 SF Well-Being Center (WBC) for a planned occupancy of 70 people (50 percent currently on Campus, 50 percent planned from new hires or off Campus), including a fitness center of 20,000 SF. The WBC would also include 40,000 SF of outdoor amenity/garden space.
- Site preparation would include demolition of any relevant existing structures and infrastructure in the Troop Support Area (TSA), in which nearly all the proposed facilities would be constructed, with the exception of the WCPS under Alternative 3.

Multiple alternatives are being considered for the CCD. Figure 1 in the attachment below shows the project area for the CCD and illustrates the Alternative 3 configuration within it. Alternative 1 includes construction of the MOSF, the WBC, and the Sigaba Way extension; demolition of all existing buildings in the TSA; and the conversion of the remainder of the TSA to surface parking. Alternative 2 includes all development proposed under Alternative 1 as well as construction of the CMSF and structured parking (at the northeast corner of Canine Road and Emory Road) in place of surface parking. Alternative 3 (Preferred Alternative) includes all development proposed in Alternative 1 and 2 as well as construction of the WSSF and proposes constructing the WCPS north of Canine Road in an existing surface parking lot.

The NSA anticipates that the proposed CCD would result in minor adverse impacts to resource areas during construction and would provide overall long-term beneficial impacts on land use. Detailed analysis of the project impacts will be provided in the Draft EA, which is anticipated to be available for public review in late Summer 2025.

The purpose of this correspondence is to solicit your comments regarding environmental aspects of the proposed project. To assist us in complying with NEPA, Executive Order 12372, *Intergovernmental Review of Federal Programs,* (as amended by EO 12416), and Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, and in identifying environmental issues that might affect the design or implementation of the project, we request that you provide appropriate comments within your area of expertise within 30 days of receipt of this letter to CCD EA, c/o HDR, 2650 Park Tower Drive, Suite 400, Vienna, VA 22180 or via email at jdwill2@nsa.gov.

Your input and comment are greatly appreciated. If you have any questions, please contact me at (301) 688-2970. Thank you for your interest.

Sincerely,
Jeffrey D. Williams

Jeffrey D. Williams, LEED-AP
Sr. Environmental Engineer
NSA Sustainability and Environmental Compliance

Attachment
Figure 1. Project Area Map

Agency Scoping Responses

Maryland Department of Natural Resources

MARYLAND DEPARTMENT OF NATURAL RESOURCES

Wes Moore, Governor
Aruna Miller, Lt. Governor
Josh Kurtz, Secretary
David Goshorn, Deputy Secretary

February 18, 2025

Mr. Jeffrey D. Williams
National Security Agency
Central Security Service
Cherry Hill, MD 20755

RE: Environmental Review - EA for National Security Agency Central Campus Development (CCD) at Fort George G. Meade, Anne Arundel County, Maryland.

Dear Mr. Williams:

The Wildlife and Heritage Service has no official records for State or Federal listed, candidate, proposed, or rare plant or animal species within the project area shown on the map provided. As a result, we have no specific concerns regarding potential impacts to such species or recommendations for protection measures at this time. If the project changes in the future such that the limits of proposed disturbance or overall site boundaries are modified, please provide us with revised project maps and we will provide you with an updated evaluation.

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

Sincerely,

Lori A. Byrne

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

ER# 2025.0032.aa

Tawes State Office Building – 580 Taylor Avenue – Annapolis, Maryland 21401
410-260-8DNR or toll free in Maryland 877-620-8DNR – *dnr.maryland.gov* – TTY Users Call via the Maryland Relay

Maryland Historical Trust

Cwalinski, Emma

From: Emma.Cwalinski@hdrinc.com
Subject: RE: [Non-DoD Source] MHT e106 project review – MHT Completed Comments

From: Williams, Jeffrey <jdwill2@nsa.gov>
Sent: Wednesday, February 26, 2025 6:55 AM
To: Cwalinski, Emma <Emma.Cwalinski@hdrinc.com>; Solomon, Patrick D <patrick.solomon@hdrinc.com>; 'sboltje@uwe.nsa.gov' <sboltje@uwe.nsa.gov>
Subject: FW: [Non-DoD Source] MHT e106 project review – MHT Completed Comments

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

FYI

Jeffrey Williams, LEED-AP
Sr. Environmental Engineer
National Security Agency
9800 Savage Road Suite 6218
Fort Meade, MD 20755
301-688-2970

From: Maryland Historical Trust <donotreply@maryland.gov>
Sent: Tuesday, February 25, 2025 12:59 PM
To: Williams, Jeffrey <jdwill2@nsa.gov>
Subject: [Non-DoD Source] MHT e106 project review – MHT Completed Comments

Date:	February 25, 2025
To:	Jeffrey D. Williams NSA
Project Name:	EA for the National Security Agency (NSA) Central Campus Development (CCD) at Fort George G. Meade
County:	Anne Arundel County
Agency:	National Security Agency
Second Agency:	Army
MHT Log #:	202500396

MHT Response: Thank you for providing the Maryland Historical Trust the opportunity to comment on the above-referenced undertaking using the MHT e106 system. The Maryland Historical Trust has reviewed the submitted project for its effects on historic and archeological resources, pursuant to Section 106 of the

1

National Historic Preservation Act of 1966 and/or the Maryland Historical Trust Act of 1985. We offer the following comments and/or concurrence with the agency's findings:

The undertaking will have no effect on historic properties. Additional consultation with our office may be required if there are any significant changes in project scope or location.

Thank you for your cooperation in this review process. Since the MHT response is now complete, this response will appear in the Completed section of your project dashboard. No hard copy of this response or attachments will be sent. If you have questions, please contact the following MHT project reviewers:

Liz Casso liz.casso@maryland.gov

Maryland Historical Trust
Project Review and Compliance
100 Community Place
Crownsville, MD 21032
mht.section106@maryland.gov

MHT.Maryland.gov
Planning.Maryland.gov

Maryland State Clearinghouse

Wes Moore, Governor
Aruna Miller, Lt. Governor

Rebecca L. Flora, AICP, Secretary
Kristin R. Fleckenstein, Deputy Secretary

Maryland
DEPARTMENT OF PLANNING

February 21, 2025

Mr. Jeffrey Williams, Sr. Environmental Engineer
National Security Agency Central Security Service
2650 Park Tower Drive
Suite 400
Vienna, VA 22180

STATE CLEARINGHOUSE RECOMMENDATION

State Application Identifier: MD20250123-0033
Applicant: National Security Agency Central Security Service
Project Description: Notice of Intent for Environmental Assessment: Proposed Action Includes Central Campus Development Construction of Four New Buildings, a Parking Structure, a Sigaba Way Extension, and Infrastructure, With Demolition of Existing Structures and Infrastructure in the TSA (Includes 3 Alternatives)
Project Address: 9810 Emory Road, Fort Meade, MD 20755
Project Location: Anne Arundel County
Recommendation: Consistent with Qualifying Comments

Dear Mr. Williams:

In accordance with Presidential Executive Order 12372 and Code of Maryland Regulation 34.02.02.04-.07, the State Clearinghouse has coordinated the intergovernmental review of the referenced project. This letter constitutes the State process review and recommendation. This recommendation is valid for a period of three years from the date of this letter.

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

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

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

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

Maryland Department of Planning • 120 E. Baltimore St., 20th Floor • Baltimore • Maryland • 21202

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

1. "If the applicant suspects that asbestos is present in any portion of the structure that will be renovated/demolished, then the applicant should contact the Community Environmental Services Program, Air and Radiation Management Administration at (410) 537-3215 to learn about the State's requirements for asbestos handling.
2. Construction, renovation and/or demolition of buildings and roadways must be performed in conformance with State regulations pertaining to 'Particulate Matter from Materials Handling and Construction' (COMAR 26.11.06.03D), requiring that during any construction and/or demolition work, reasonable precaution must be taken to prevent particulate matter, such as fugitive dust, from becoming airborne.
3. During the duration of the project, soil excavation/grading/site work will be performed; there is a potential for encountering soil contamination. If soil contamination is present, a permit for soil remediation is required from MDE's Air and Radiation Management Administration. Please contact the New Source Permits Division, Air and Radiation Management Administration at (410) 537-3230 to learn about the State's requirements for these permits.
4. If a project receives federal funding, approvals and/or permits, and will be located in a nonattainment area or maintenance area for ozone or carbon monoxide, the applicant needs to determine whether emissions from the project will exceed the thresholds identified in the federal rule on general conformity. If the project emissions will be greater than 25 tons per year, contact the Air Quality Planning Program of the Air and Radiation Administration, at (410) 537-4125 for further information regarding threshold limits.
5. Electrical generators powered by internal combustion engines, having a rated capacity of 375 kW or greater, are required to obtain permits from the Air and Radiation Management Administration. Please contact the New Source Permits Division, Air and Radiation Management Administration at (410) 537-3230 to learn about the State's requirements and the permitting processes for such equipment.
6. Emissions from mobile sources are one of the primary contributors to both climate change and local air pollution, vehicles powered by electricity are one way to reduce the impacts of these emissions. A variety of funding initiatives are becoming available to allow for the faster adoption of electric vehicles, any funding opportunity that can help with this should be examined, especially for electric vehicle charging or refueling infrastructure.
7. Any above ground or underground petroleum storage tanks, which may be utilized, must be installed and maintained in accordance with applicable State and federal laws and regulations. Underground storage tanks must be registered and the installation must be conducted and performed by a contractor certified to install underground storage tanks by the Land and Materials Administration in accordance with COMAR 26.10. Contact the Oil Control Program at (410) 537-3442 for additional information.
8. If the proposed project involves demolition – Any above ground or underground petroleum storage tanks that may be on site must have contents and tanks along with any contamination removed. Please contact the Oil Control Program at (410) 537-3442 for additional information.
9. Any solid waste including construction, demolition and land clearing debris, generated from the subject project, must be properly disposed of at a permitted solid waste acceptance facility, or recycled if possible. Contact the Solid Waste Program at (410) 537-3315 for additional information regarding solid waste activities and contact the Resource Management Program at (410) 537-3314 for additional information regarding recycling activities.
10. The Solid Waste Program should be contacted directly at (410) 537-3315 by those facilities which generate or propose to generate or handle hazardous wastes to ensure these activities are being conducted in compliance with applicable State and federal laws and regulations. The Program should also be contacted prior to construction activities to ensure that the treatment, storage or disposal of hazardous wastes and low-level radioactive wastes at the facility will be conducted in compliance with applicable State and federal laws and regulations.
11. The proposed project may involve rehabilitation, redevelopment, revitalization, or property acquisition of commercial, industrial property. Accordingly, MDE's Brownfields Site Assessment and Voluntary Cleanup Programs (VCP) may provide valuable assistance to you in this project. These programs involve environmental site assessment in accordance with accepted industry and financial institution standards for property transfer. For

specific information about these programs and eligibility, please contact the Land Restoration Program at (410) 537-3437.

12. Borrow areas used to provide clean earth back fill material may require a surface mine permit. Disposal of excess cut material at a surface mine may require site approval. Contact the Mining Program at (410) 537-3557 for further details."

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

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

Thank you for your cooperation with the MIRC process.

Sincerely,

Jason Dubow, Director
Research, Review and Policy Division

JD:SM
cc:

Damon Conway - DGS	Nicole Eisenstein - MDE	Taylor Bensley - MILT	Carter Reitman - MDPLS
Brittany Brothers - MDOT	Tony Redman - DNR	Stephen Walker - ANAR	Dixie Henry - MHT

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B

Air Quality Analysis Supporting Documentation

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Appendix B: Air Quality Analysis Supporting Documentation

Alternative 1 Criteria Pollutant Emissions Summary (tpy)

Year	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Pb	NH_3
2030								
Construction	0.064	0.651	0.784	0.002	14.605	0.022	0.000	0.009
2031								
Construction	0.400	4.737	5.672	0.012	1.508	0.141	0.000	0.112
2032								
Construction	10.940	3.616	4.692	0.009	0.194	0.110	0.000	0.072
2033 (steady state)								
Operations	2.067	4.842	22.979	0.031	0.457	0.361	0.000	0.287

Alternative 1 Greenhouse Gas Emissions Summary (tpy)

Year	CO_2	CH_4	N_2O	CO_2e
2030				
Construction	285.499	0.009	0.023	291.010
2031				
Construction	2,451.540	0.073	0.268	2,525.395
2032				
Construction	1,694.252	0.052	0.167	1,739.447
2033 (steady state)				
Operations	7,415.246	0.191	0.135	7,456.032

Alternative 2 Criteria Pollutant Emissions Summary (tpy)

Year	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Pb	NH_3
2030								
Construction	0.064	0.651	0.784	0.002	14.605	0.022	0.000	0.009
2031								
Construction	0.400	4.737	5.672	0.012	1.508	0.141	0.000	0.112
2032								
Construction	20.672	7.067	8.918	0.019	1.220	0.216	0.000	0.164
2033								
Construction	6.655	1.452	1.855	0.004	0.089	0.045	0.000	0.038
Operations	2.067	4.842	22.979	0.031	0.457	0.361	0.000	0.287
2034 (steady state)								
Operations	4.608	9.124	49.965	0.082	0.917	0.700	0.000	0.652

Alternative 2 Greenhouse Gas Emissions Summary (tpy)

Year	CO_2	CH_4	N_2O	CO_2e
2030				
Construction	285.499	0.009	0.023	291.010
2031				
Construction	2,451.540	0.073	0.268	2,525.395
2032				
Construction	3,665.184	0.111	0.389	3,771.006
2033				
Construction	817.594	0.025	0.090	841.514
Operations	7,415.567	0.191	0.135	7,455.581
2034 (steady state)				
Construction	14,526.124	0.387	0.263	14,605.921

Alternative 3 Criteria Pollutant Emissions Summary (tpy)

Year	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Pb	NH_3
2030								
Construction	0.152	1.517	1.700	0.004	21.589	0.053	0.000	0.019
2031								
Construction	0.726	9.499	10.701	0.024	2.460	0.290	0.000	0.263
2032								
Construction	30.337	10.242	12.538	0.037	1.381	0.302	0.000	0.256
2033								
Construction	6.819	3.162	4.246	0.014	0.134	0.086	0.000	0.068
Operations	2.073	4.842	22.979	0.031	0.457	0.361	0.000	0.287
2034								
Construction	0.165	1.687	2.375	0.004	0.040	0.037	0.000	0.031
Operations	4.613	9.147	49.981	0.087	0.922	0.705	0.000	0.652
2035								
Construction	8.213	0.923	1.320	0.002	0.022	0.021	0.000	0.016
Operations	4.613	9.147	49.981	0.087	0.922	0.705	0.000	0.652
2036 (steady state)								
Operations	5.776	13.667	63.890	0.120	1.267	1.047	0.000	0.815

Alternative 3 Greenhouse Gas Emissions Summary (tpy)

Year	CO_2	CH_4	N_2O	CO_2e
2030				
Construction	597.453	0.020	0.047	610.680
2031				
Construction	5,349.515	0.155	0.633	5,521.476

2032				
Construction	5,528.090	0.164	0.611	5,697.846
2033				
Construction	1,629.997	0.167	0.611	5,697.846
Operations	7,415.567	0.191	0.135	7,455.581
2034				
Construction	811.308	0.025	0.071	832.558
Operations	14,528.452	0.387	0.263	14,608.614
2035				
Construction	426.601	0.013	0.036	436.829
Operations	14,529.452	0.387	0.263	14,608.614
2036 (steady state)				
Operations	21,132.507	0.534	0.380	21,225.458

B.1 Emissions Estimation Methodology

The U.S. Department of Defense (DoD) 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, demolition, and construction activities:** use of heavy construction equipment, worker vehicles traveling to and from the project area, construction, hauling of debris and materials, use of paints and architectural coatings, paving off-gases, and fugitive dust from ground disturbance
- **Operational activities:** use of boilers, emergency generators, and new personnel vehicles traveling to and from new facilities

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 (the United States Environmental Protection Agency's [USEPA's] online emissions factor database).

The Proposed Action includes site preparation including demolition of antiquated structures and infrastructure in the Troop Support Area (TSA), construction and operation of up to four new facilities (Mission Operations Support Facility [MOSF], Consolidated Military Support Facility [CMSF], Integrated Workforce Support Center [IWSC], and Well-Being Center [WBC]), construction of surface parking or the West Campus Parking Structure (WCPS), installation of utilities and related infrastructure, and an extension of Sigaba Way to allow for shuttle bus and pedestrian access from the Main and Central Campuses to the East Campus.

Alternative 1 includes construction of the MOSF in the northeast portion of the TSA, with construction of the WBC in the southeast portion. Sigaba Way would be extended to connect the East and West Campuses. All existing buildings in the TSA buildings would be demolished including three barracks (Buildings 9802, 9803, and 9804); administrative office building

(Building 9805); the Six Hats Dining Hall (Building 9829); Eagle Fitness Center (Building 9810); and two parking lots (T22 and T23). The remainder of the TSA would be converted to surface parking.

Alternative 2 includes all development proposed under Alternative 1, as well as construction of the CMSF and structured parking within the TSA instead of surface lots.

Alternative 3 includes all development proposed under Alternatives 2 and 3, as well as construction of the IWSC. Instead of parking within the TSA, the WCPS would be constructed in an existing surface lot to the northwest.

The analysis assumes that construction for the MOSF, WBC, WCPS, and related infrastructure under the alternatives would begin in fiscal year (FY) 2031 and continue for 2 years (i.e., October 2030 through September 032). Construction for the CMSF would begin in FY 2032 and continue for 2 years (i.e., October 2031 through September 2033). Construction for the IWSC under Alternative 3 was assumed to begin in FY 2032 and continue for 4 years (October 2031 through September 2035). Facility operations for the new facilities would be expected to start within 2 years of construction completion. For the purposes of this analysis, operations for the MOSF, WBC, and WCPS were assumed to begin in January 2033; operations for the CMSF were assumed to begin in January 2034; and operations for the IWSC were assumed to begin in January 2036. Data used for air quality calculations are estimates or approximate measurements.

The analysis accounts for new personnel who would relocate to the Fort Meade area or who would be new hires. Personnel who are relocated from other National Security Agency (NSA) buildings or elsewhere on Fort Meade were not included. Personnel included in the analysis are as follows: 1,250 MOSF personnel, 1,650 CMSF personnel, 750 IWSC personnel, and 35 WBC personnel.

- **MOSF:** 2,500 total personnel including 50 percent currently on campus and 50 percent planned from new hires or off campus
- **CMSF:** 2,200 total personnel including 25 percent on campus and 75 percent planned from new hires or off campus
- **IWSC:** 2,500 total personnel including 70 percent currently on campus and 30 percent planned from new hires or off campus
- **WBC:** 70 total personnel including 50 percent currently on campus and 50 planned from new hires or off campus

Data used for air quality calculations are estimates or approximate measurements. All direct and indirect emissions associated with the Proposed Action are estimates. 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 operations. Operational equipment considered includes boilers and diesel life-safety generators. The operations analysis also considered vehicle use (mobile emissions) from new personnel commuting to and from the new facilities.

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)

At the time of this analysis, it was assumed Building 9801 would be demolished as part of the Proposed Action. It was also assumed the CMSF would be 116 feet above grade in height. These assumptions were retained as conservative estimates; however, the actual demolition plan and construction design may be different than what was assumed for this analysis.

B.1.1 Construction: Demolition Phase

General Assumptions

Average days worked per week: 5

Construction Exhaust
(See facility-specific assumptions)

Vehicle Exhaust
Average hauling truck capacity (cubic yards [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

Emission Factors

Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour)

Concrete/Industrial Sawa Composite [HP: 33] [LF: 0.73]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.34196	0.00742	3.25486	4.24127	0.04204	0.03868
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.32880	0.00491	2.77253	2.67264	0.12596	0.11588
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.16638	0.00489	1.67562	3.49929	0.04010	0.03689

Construction Exhaust Greenhouse Gases Emission Factors (g/hp-hour)

Concrete/Industrial Sawa Composite [HP: 33] [LF: 0.73]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02328	0.00466	573.99966	575.96948
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02160	0.00432	532.38223	534.20923
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				

	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02147	0.00429	529.26401	531.08031

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

	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$	NH_3
LDGV	0.25907	0.00271	0.11682	3.41027	0.02267	0.00762	0.05008
LDGT	0.22705	0.00344	0.17218	3.22858	0.02384	0.00875	0.04239
HDGV	0.69961	0.00740	0.58983	8.72666	0.05023	0.02459	0.08750
LDDV	0.12759	0.00126	0.17022	5.60195	0.02301	0.00769	0.01641
LDDT	0.19434	0.00128	0.31393	3.96078	0.02320	0.00901	0.01629
HDDV	0.13168	0.00426	2.63998	1.58572	0.16417	0.08042	0.06580
MC	2.30401	0.00342	0.66268	11.68103	0.03170	0.02149	0.05427

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

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01481	0.00493	320.43203	322.15172
LDGT	0.01595	0.00723	406.32062	408.68263
HDGV	0.04739	0.02478	873.82162	881.71636
LDDV	0.05497	0.00068	372.08215	373.80273
LDDT	0.03489	0.00101	380.80915	382.05464
HDDV	0.03167	0.16225	1267.77864	1311.66220
MC	0.10935	0.00295	394.32778	398.17226

Formulas

Fugitive Dust Emissions per Phase

$PM10_{FD}$ = (0.00042 * BA * BH) / 2,000
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 * HP * LF * EF_{POL}* 0.002205) / 2,000
CEE_{POL}: Construction exhaust emissions (tons)
NE: Number of equipment
WD: Number of total workdays (days)
H: Hours worked per day (hours)
HP: Equipment horsepower
LF: Equipment load factor
EF_{POL}: Emission factor for pollutant (g/hp-hour)
0.002205: Conversion factor, grams to pounds
2,000: 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: Amount of material to be hauled on site (yd^3)
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)
HT: Average hauling truck round-trip commute (mile/trip)

V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2,000
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 (%)
2,000: 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 workers
NE: Number of construction equipment

V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2,000
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 (%)
2,000: Conversion factor, pounds to tons

B.1.2 Construction: Site Grading Phase

General Assumptions

Average days worked per week: 5

Construction Exhaust
(See facility-specific assumptions)

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

Emission Factors

Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour)

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.32773	0.00543	3.29655	4.18960	0.06618	0.06088
Graders Composite [HP: 148] [LF: 0.41]						

	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.25506	0.00490	1.76292	3.41919	0.09783	0.09000
Other Construction Equipment Composite [HP: 82] [LF: 0.42]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.23337	0.00487	2.31265	3.48896	0.11095	0.10207
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.32880	0.00491	2.77253	2.67264	0.12596	0.11588
Scrapers Composite [HP: 423] [LF: 0.48]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.17496	0.00488	1.28054	1.45392	0.05278	0.04856
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.16638	0.00489	1.67562	3.49929	0.04010	0.03689

Construction Exhaust Greenhouse Gases Emission Factors (g/hp-hour)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02385	0.00477	588.06593	590.08402
Graders Composite [HP: 148] [LF: 0.41]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02154	0.00431	531.04687	532.86928
Other Construction Equipment Composite [HP: 82] [LF: 0.42]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02137	0.00427	526.88566	528.69380
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02160	0.00432	532.38223	534.20923
Scrapers Composite [HP: 423] [LF: 0.48]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02144	0.00429	528.52109	530.33484
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02147	0.00429	529.26401	531.08031

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

	VOC	**SO_x**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**NH_3**
LDGV	0.25907	0.00271	0.11682	3.41027	0.02267	0.00762	0.05008
LDGT	0.22705	0.00344	0.17218	3.22858	0.02384	0.00875	0.04239
HDGV	0.69961	0.00740	0.58983	8.72666	0.05023	0.02459	0.08750
LDDV	0.12759	0.00126	0.17022	5.60195	0.02301	0.00769	0.01641
LDDT	0.19434	0.00128	0.31393	3.96078	0.02320	0.00901	0.01629
HDDV	0.13168	0.00426	2.63998	1.58572	0.16417	0.08042	0.06580
MC	2.30401	0.00342	0.66268	11.68103	0.03170	0.02149	0.05427

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

	CH_4	**N_2O**	**CO_2**	**CO_2e**
LDGV	0.01481	0.00493	320.43203	322.15172
LDGT	0.01595	0.00723	406.32062	408.68263
HDGV	0.04739	0.02478	873.82162	881.71636
LDDV	0.05497	0.00068	372.08215	373.80273
LDDT	0.03489	0.00101	380.80915	382.05464
HDDV	0.03167	0.16225	1267.77864	1311.66220
MC	0.10935	0.00295	394.32778	398.17226

Formulas

Fugitive Dust Emissions per Phase

$PM10_{FD}$ = (20 * ACRE * WD) / 2,000
$PM10_{FD}$: 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 work days (days)
2000: Conversion factor, pounds to tons

Construction Exhaust Emissions per Phase

CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL}* 0.002205) / 2,000
CEE_{POL}: Construction exhaust emissions (tons)
NE: Number of equipment
WD: Number of total workdays (days)
H: Hours worked per day (hours)
HP: Equipment horsepower
LF: Equipment load factor
EF_{POL}: Emission factor for pollutant (g/hp-hour)
0.002205: Conversion factor, grams to pounds
2,000: 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) / 2,000
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 (%)
2,000: 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 workers
NE: Number of construction equipment

V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2,000
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 (%)

2,000: Conversion factor, pounds to tons

B.1.3 Construction: Trenching/Excavating Phase

General Assumptions

Average days worked per week: 5

Construction Exhaust
(See facility-specific assumptions)

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

Emission Factors

Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour)

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.30767	0.00543	3.28327	4.16592	0.05781	0.05318
Other General Industrial Equipment Composite [HP: 35] [LF: 0.34]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.36454	0.00543	3.36875	4.50643	0.05884	0.05414
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.16247	0.00489	1.63682	3.49664	0.03656	0.03363

Construction Exhaust Greenhouse Gases Emission Factors (g/hp-hour)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02385	0.00477	588.06593	590.08402
Other General Industrial Equipment Composite [HP: 35] [LF: 0.34]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02384	0.00477	587.81454	589.83177
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02147	0.00429	529.26401	531.08031

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

	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$	NH_3
LDGV	0.25907	0.00271	0.11682	3.41027	0.02267	0.00762	0.05008
LDGT	0.22705	0.00344	0.17218	3.22858	0.02384	0.00875	0.04239
HDGV	0.69961	0.00740	0.58983	8.72666	0.05023	0.02459	0.08750
LDDV	0.12759	0.00126	0.17022	5.60195	0.02301	0.00769	0.01641

LDDT	0.19434	0.00128	0.31393	3.96078	0.02320	0.00901	0.01629
HDDV	0.13168	0.00426	2.63998	1.58572	0.16417	0.08042	0.06580
MC	2.30401	0.00342	0.66268	11.68103	0.03170	0.02149	0.05427

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

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01481	0.00493	320.43203	322.15172
LDGT	0.01595	0.00723	406.32062	408.68263
HDGV	0.04739	0.02478	873.82162	881.71636
LDDV	0.05497	0.00068	372.08215	373.80273
LDDT	0.03489	0.00101	380.80915	382.05464
HDDV	0.03167	0.16225	1267.77864	1311.66220
MC	0.10935	0.00295	394.32778	398.17226

Formulas

Fugitive Dust Emissions per Phase

$PM10_{FD}$ = (20 * ACRE * WD) / 2,000
$PM10_{FD}$: 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)
2,000: Conversion factor, pounds to tons

Construction Exhaust Emissions per Phase

CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL}* 0.002205) / 2,000
CEE_{POL}: Construction exhaust emissions (tons)
NE: Number of equipment
WD: Number of total work days (days)
H: Hours worked per day (hours)
HP: Equipment horsepower
LF: Equipment load factor
EF_{POL}: Emission factor for pollutant (g/hp-hour)
0.002205: Conversion factor, grams to pounds
2,000: 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) / 2,000
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 (%)
2,000: 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 workers
NE: Number of construction equipment

V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2,000
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 (%)
2,000: Conversion factor, pounds to tons

B.1.4 Construction: Construction Phase

General Assumptions

Average days worked per week: 5

Construction Exhaust
(See facility-specific assumptions)

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

Emission Factors

Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour)

Cranes Composite [HP: 367] [LF: 0.29]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.17419	0.00487	1.34722	1.58777	0.05874	0.05404
Forklifts Composite [HP: 82] [LF: 0.2]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.19598	0.00487	1.83160	3.56245	0.05737	0.05278
Generator Sets Composite [HP: 14] [LF: 0.74]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$

Emission factors	0.53249	0.00793	4.25997	2.83929	0.16510	0.15189
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.16247	0.00489	1.63682	3.49664	0.03656	0.03363
Welders Composite [HP: 46] [LF: 0.45]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.35922	0.00735	3.23985	4.37186	0.03892	0.03580

Construction Exhaust Greenhouse Gases Emission Factors (g/hp-hour)

Cranes Composite [HP: 367] [LF: 0.29]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02140	0.00428	527.61055	529.42117
Forklifts Composite [HP: 82] [LF: 0.2]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02138	0.00428	527.07594	528.88473
Generator Sets Composite [HP: 14] [LF: 0.74]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02305	0.00461	568.30593	570.25621
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02147	0.00429	529.26401	531.08031
Welders Composite [HP: 46] [LF: 0.45]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02305	0.00461	568.30362	570.25389

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

	VOC	**SO_x**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**NH_3**
LDGV	0.25907	0.00271	0.11682	3.41027	0.02267	0.00762	0.05008
LDGT	0.22705	0.00344	0.17218	3.22858	0.02384	0.00875	0.04239
HDGV	0.69961	0.00740	0.58983	8.72666	0.05023	0.02459	0.08750
LDDV	0.12759	0.00126	0.17022	5.60195	0.02301	0.00769	0.01641
LDDT	0.19434	0.00128	0.31393	3.96078	0.02320	0.00901	0.01629
HDDV	0.13168	0.00426	2.63998	1.58572	0.16417	0.08042	0.06580
MC	2.30401	0.00342	0.66268	11.68103	0.03170	0.02149	0.05427

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

	CH_4	**N_2O**	**CO_2**	**CO_2e**
LDGV	0.01481	0.00493	320.43203	322.15172
LDGT	0.01595	0.00723	406.32062	408.68263
HDGV	0.04739	0.02478	873.82162	881.71636
LDDV	0.05497	0.00068	372.08215	373.80273
LDDT	0.03489	0.00101	380.80915	382.05464
HDDV	0.03167	0.16225	1267.77864	1311.66220
MC	0.10935	0.00295	394.32778	398.17226

Formulas

Construction Exhaust Emissions per Phase

CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL}* 0.002205) / 2,000

CEE_{POL}: Construction exhaust emissions (tons)
NE: Number of equipment
WD: Number of total workdays (days)
H: Hours worked per day (hours)
HP: Equipment horsepower
LF: Equipment load factor
EF_{POL}: Emission factor for pollutant (g/hp-hour)
0.002205: Conversion factor, grams to pounds
2,000: Conversion factor, pounds to tons

Vehicle Exhaust Emissions per Phase

VMT_{VE} = BA * BH * (0.42 / 1,000) * HT
VMT_{VE}: Vehicle exhaust vehicle miles travel (miles)
BA: Area of building (ft^2)
BH: Height of building (ft)
(0.42 / 1,000): Conversion factor, ft^3 to trips (0.42 trip / 1,000 ft^3)
HT: Average hauling truck round-trip commute (mile/trip)

V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2,000
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 (%)
2,000: 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 workers
NE: Number of construction equipment

V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2,000
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 (%)
2,000: Conversion factor, pounds to tons

Vender Trips Emissions per Phase

VMT_{VT} = BA * BH * (0.38 / 1,000) * HT
VMT_{VT}: Vender trips vehicle miles travel (miles)
BA: Area of building (ft^2)
BH: Height of building (ft)
(0.38 / 1,000): Conversion factor, ft^3 to trips (0.38 trip / 1,000 ft^3)
HT: Average hauling truck round-trip commute (mile/trip)

V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2,000
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 (%)
2,000: Conversion factor, pounds to tons

B.1.5 Construction: Architectural Coatings Phase

General 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

Emission Factors

Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$	NH_3
LDGV	0.25907	0.00271	0.11682	3.41027	0.02267	0.00762	0.05008
LDGT	0.22705	0.00344	0.17218	3.22858	0.02384	0.00875	0.04239
HDGV	0.69961	0.00740	0.58983	8.72666	0.05023	0.02459	0.08750
LDDV	0.12759	0.00126	0.17022	5.60195	0.02301	0.00769	0.01641
LDDT	0.19434	0.00128	0.31393	3.96078	0.02320	0.00901	0.01629
HDDV	0.13168	0.00426	2.63998	1.58572	0.16417	0.08042	0.06580
MC	2.30401	0.00342	0.66268	11.68103	0.03170	0.02149	0.05427

Worker Trips Greenhouse Gases Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01481	0.00493	320.43203	322.15172
LDGT	0.01595	0.00723	406.32062	408.68263
HDGV	0.04739	0.02478	873.82162	881.71636
LDDV	0.05497	0.00068	372.08215	373.80273
LDDT	0.03489	0.00101	380.80915	382.05464
HDDV	0.03167	0.16225	1267.77864	1311.66220
MC	0.10935	0.00295	394.32778	398.17226

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) / 2,000
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 (%)
2,000: Conversion factor, pounds to tons

Off-Gassing Emissions per Phase

VOC_{AC} = (AB * 2.0 * 0.0116) / 2,000
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)
2,000: Conversion factor, pounds to tons

B.1.6 Construction: Paving Phase

General Assumptions

Average days worked per week: 5

Construction Exhaust
(See facility-specific assumptions)

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

Emission Factors

Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour)

Cement and Mortar Mixers Composite [HP: 10] [LF: 0.56]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.55245	0.00854	4.19397	3.25427	0.16245	0.14946
Pavers Composite [HP: 81] [LF: 0.42]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.18992	0.00486	2.01767	3.42447	0.07875	0.07245
Rollers Composite [HP: 36] [LF: 0.38]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.42190	0.00542	3.41206	4.00506	0.10233	0.09414
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$
Emission factors	0.15988	0.00489	1.61021	3.49533	0.03433	0.03158

Construction Exhaust Greenhouse Gases Emission Factors (g/hp-hour)

Cement and Mortar Mixers Composite [HP: 10] [LF: 0.56]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02313	0.00463	570.10601	572.06247
Pavers Composite [HP: 81] [LF: 0.42]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02133	0.00427	525.84622	527.65079
Rollers Composite [HP: 36] [LF: 0.38]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02382	0.00476	587.11055	589.12536
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	N_2O	CO_2	CO_2e
Emission factors	0.02147	0.00429	529.26401	531.08031

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

	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$	NH_3
LDGV	0.25907	0.00271	0.11682	3.41027	0.02267	0.00762	0.05008
LDGT	0.22705	0.00344	0.17218	3.22858	0.02384	0.00875	0.04239
HDGV	0.69961	0.00740	0.58983	8.72666	0.05023	0.02459	0.08750

LDDV	0.12759	0.00126	0.17022	5.60195	0.02301	0.00769	0.01641
LDDT	0.19434	0.00128	0.31393	3.96078	0.02320	0.00901	0.01629
HDDV	0.13168	0.00426	2.63998	1.58572	0.16417	0.08042	0.06580
MC	2.30401	0.00342	0.66268	11.68103	0.03170	0.02149	0.05427

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

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01481	0.00493	320.43203	322.15172
LDGT	0.01595	0.00723	406.32062	408.68263
HDGV	0.04739	0.02478	873.82162	881.71636
LDDV	0.05497	0.00068	372.08215	373.80273
LDDT	0.03489	0.00101	380.80915	382.05464
HDDV	0.03167	0.16225	1267.77864	1311.66220
MC	0.10935	0.00295	394.32778	398.17226

Formulas

Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2{,}000$
CEE_{POL}: Construction exhaust emissions (tons)
NE: Number of equipment
WD: Number of total workdays (days)
H: Hours worked per day (hours)
HP: Equipment horsepower
LF: Equipment load factor
EF_{POL}: Emission factor for pollutant (g/hp-hour)
0.002205: Conversion factor, grams to pounds
2,000: 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)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2{,}000$
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 (%)
2,000: 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 workers
NE: Number of construction equipment

V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2,000
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 (%)
2,000: Conversion factor, pounds to tons

Off-Gassing Emissions per Phase

VOC_P = (2.62 * PA) / 43,560 / 2,000
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)
2,000: Conversion factor, pounds to tons

B.1.7 Operations: Heating

General Assumptions

Heating calculation type: Heat energy requirement method

Emission Factors

Heating Criteria Pollutant Emission Factors (lb/1,000,000 scf)

VOC	SO_X	NO_X	CO	PM_{10}	$PM_{2.5}$	Pb	NH_3
5.5	0.6	100	84	7.6	7.6	0	0

Heating Greenhouse Gases Emission Factors (lb/1,000,000 scf)

CH_4	N_2O	CO_2	CO_2e
2.26	2.26	120019	120143

Formulas

Heating Fuel Consumption ft^3 per Year

FC_{HER}= HA * EI / HV / 1,000,000
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)
1,000,000: Conversion factor

Heating Emissions per Year

HE_{POL}= FC * EF_{POL} / 2,000
HE_{POL}: Heating emission emissions (tons)
FC: Fuel consumption
EF_{POL}: Emission factor for pollutant
2,000: Conversion factor, pounds to tons

B.1.8 Operations: Emergency Generator

General Assumptions

Type of fuel used in emergency generator: Diesel

Emission Factors

Emergency Generators Criteria Pollutant Emission Factors (lb/hp-hr)

VOC	SO_X	NO_X	CO	PM_{10}	$PM_{2.5}$	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251	0	0

Emergency Generators Greenhouse Gases Emission Factors (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

Formulas

Emergency Generator Emissions per Year

AE_{POL}= (NGEN * HP * OT * EF_{POL}) / 2,000
AE_{POL}: Activity emissions (tons per year)
NGEN: Number of emergency generators
HP: Emergency generator's horsepower (hp)
OT: Average operating hours per year (hours)
EF_{POL}: Emission factor for pollutant (lb/hp-hr)

B.1.9 Operations: Personnel

General Assumptions

Average personnel round-trip commute (mile): 20
Personnel work schedule: 5 days per week

Personnel On Road Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

Emission Factors

On Road Vehicle Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM_{10}	$PM_{2.5}$	NH_3
LDGV	0.23835	0.00224	0.07049	2.58463	0.01963	0.00703	0.04269
LDGT	0.19897	0.00306	0.09861	2.42318	0.02138	0.00802	0.03619
HDGV	0.50586	0.00705	0.30579	5.84720	0.04369	0.02084	0.08278
LDDV	0.10524	0.00122	0.13834	6.62552	0.02314	0.00879	0.01698
LDDT	0.08966	0.00114	0.12492	2.17444	0.02040	0.00730	0.01542
HDDV	0.07530	0.00387	1.47365	1.35737	0.13040	0.05033	0.06869
MC	2.20624	0.00342	0.65463	11.04394	0.03090	0.02147	0.05594

On Road Vehicle Greenhouse Gases Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01090	0.00433	264.66206	266.11495
LDGT	0.01169	0.00628	361.58104	363.57165
HDGV	0.03403	0.02091	833.18075	839.67414
LDDV	0.05683	0.00068	363.10410	364.87624
LDDT	0.03307	0.00102	340.77193	341.96741
HDDV	0.03110	0.16849	1156.38685	1201.90880
MC	0.10229	0.00294	394.55494	398.19802

Formulas

Personnel Vehicle Miles Travel for Work Days per Year

VMT_P = NP * WD * AC

VMT_P: Personnel vehicle miles travel (miles/year)
NP: Number of personnel
WD: Work days per year
AC: Average commute (miles)

Total Vehicle Miles Travel per Year

$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$
VMT_{Total}: Total vehicle miles travel (miles)
VMT_{AD}: Active-duty personnel vehicle miles travel (miles)
VMT_C: Civilian personnel vehicle miles travel (miles)
VMT_{SC}: Support contractor personnel vehicle miles travel (miles)
VMT_{ANG}: Air National Guard personnel vehicle miles travel (miles)
VMT_{AFRC}: Reserve personnel vehicle miles travel (miles)

Vehicles Emissions per Year

$V_{POL} = (VMT_{Total} * 0.002205 * EF_{POL} * VM) / 2{,}000$
V_{POL}: Vehicle emissions (tons)
VMT_{Total}: Total vehicle miles travel (miles)
0.002205: Conversion factor, grams to pounds
EF_{POL}: Emission factor for pollutant (grams/mile)
VM: Personnel on road vehicle mixture (%)
2,000: Conversion factor, pounds to tons

B.2 Mission Operations Support Facility (MOSF) (Alternatives 1, 2, and 3)

Action Location

State: Maryland
County: Anne Arundel
Regulatory areas: Anne Arundel County and Baltimore County, Maryland; Baltimore, Maryland

B.2.1 MOSF Construction

Construction Period

Start: October 2030
End: September 2032

Description

It was assumed that the MOSF would be constructed over a 2-year period, from October 2030 through September 2032.

Demolition would be required for Building 9801 (approximately 30,300 square feet [ft^2]), Building 9802 (approximately 30,000 ft^2), Building 9803 (approximately 30,000 ft^2), Building 9804 (approximately 30,000 ft^2), Building 9805 (approximately 16,700 ft^2), Building 9829 (approximately 20,500 ft^2), Building 9810 (approximately 26,500 ft^2), and various storage sheds and other structures (approximately 3,000 ft^2). The total square footage of buildings to be demolished was calculated at 156,700 ft^2. The average height of all buildings to be demolished was assumed to be 40 feet. Demolition would begin in October 2030 and last approximately 2 months.

Site grading would occur across the entirety of the project area (approximately 31 acres; 1,306,800 ft^2) to ensure that the required elevation is met. Site grading would begin in

December 2030 and last approximately 1 month. Approximately 50,000 yd^3 of demolition debris and fill would be hauled off site.

Excavation would be required for removal of pavements, including two parking lots (T22 = approximately 180,000 ft^2; T23 = approximately 169,000 ft^2), sidewalks (approximately 150,000 ft^2), and other paved surfaces (approximately 36,000 ft^2), for a total of 535,000 ft^2. Excavation would also be required for the MOSF's below-grade basement, which was assumed to cover 91,000 ft^2. Trenching would be required for removal, rerouting, and installation of utilities, estimated at 6,000 linear feet (LF). An average of 3 feet was assumed for all utility trenching, resulting in a total trenched area of 18,000 ft^2. The total area to be excavated or trenched was estimated at 109,000 ft^2. Trenching would begin in January 2031 and last approximately 1 month. Approximately 50,000 yd^3 of fill from excavation of the below-grade basement and an estimated 1,000 yd^3 of demolished pavement and fill from trenching (51,000 yd^3 total) would be hauled off site.

The MOSF would be eight levels above grade with 115,000 ft^2 on the first floor with a height of 20 feet and the remaining seven levels at 91,000 ft^2 each with a height of 17.5 feet. It was assumed that the below-grade basement would be 91,000 ft^2 at a height of 20 feet. Total construction was estimated at 843,000 ft^2. The height of the MOSF would be 142.5 feet above grade, or 162.5 feet high including the below-grade basement. Construction would begin in February 2031 and last approximately 18 months.

Architectural coatings would be applied to the MOSF for a total of approximately 843,000 ft^2. Architectural coating application would begin in August 2032 and last approximately 1 month.

Paving would be required for circulation and access roads, walkways, courtyard area, and other paved surfaces for an estimated 20,000 ft^2. Paving would begin in September 2032 and last approximately 1 month.

Assumptions

Demolition Phase

Start: October 2030
Phase duration: 2 months
Area of building to be demolished (ft^2): 187,000
Height of building to be demolished (ft): 40

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	3	8

Site Grading Phase

Start: December 2030
Phase duration: 1 month
Area of site to be graded (ft^2): 1,306,800
Amount of material to be hauled off site (yd^3): 50,000

Construction Exhaust

Equipment Name	Number of Equipment	Hours per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	3	8

Tractors/Loaders/Backhoes Composite	3	8

Trenching/Excavating Phase

Start: January 2031
Phase duration: 1 month
Area of site to be trenched/excavated (ft^2): 109,000
Amount of material to be hauled on or off site (yd^3): 51,000

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

Building Construction Phase

Start: February 2031
Phase duration: 18 months
Area of building (ft^2): 843,000
Height of building (ft): 162.5

Construction Exhaust

Equipment Name	Number of Equipment	Hours per Day
Cranes Composite	1	7
Forklifts Composite	3	8
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	3	7
Welders Composite	1	8

Architectural Coatings Phase

Start: August 2032
Phase duration: 1 month
Total square footage (ft^2): 843,000

Paving Phase

Start: September 2032
Phase duration: 1 month
Paving area (ft^2): 20,000

Construction Exhaust

Equipment Name	Number of Equipment	Hours per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

Emissions Summary

MOSF Construction: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Total emissions	10.261745	6.448967	7.130258	0.016511	16.078032	0.204834	0.000000	0.182708

MOSF Construction: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Total emissions	0.107027	0.442744	3715.336291	3835.657983

B.2.2 MOSF Heating

Operations Period

Start: January 2033

End: Indefinite

Description

Heating for the MOSF (843,000 ft^2) would be required following construction. Heating was assumed to begin in January 2033 and would continue indefinitely.

Assumptions

Heat Energy Requirement Method

Area of floorspace to be heated (ft^2): 843,000
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): 0.1278

Boiler/Furnace Usage

Operating time per year (hours): 900

Emissions Summary

MOSF Heating: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Annual emissions	0.282164	5.130257	4.309416	0.030782	0.389900	0.389900	0.000000	0.000000

MOSF Heating: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Annual emissions	0.115944	0.115944	6157.283320	6191.254857

B.2.3 MOSF Emergency Generator

Operations Period

Start: January 2033
End: Indefinite

Description

Operation of the diesel life-safety generator for the MOSF was assumed to begin in January 2033 and would continue indefinitely. It was assumed that the generator would operate an average of 30 hours per year.

Assumptions

Emergency Generator

Type of fuel used in emergency generator: Diesel
Number of emergency generators: 1
Emergency generator's horsepower: 135
Average operating hours per year (hours): 30

Emissions Summary

MOSF Emergency Generator: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Annual emissions	0.005650	0.023288	0.015552	0.004759	0.005083	0.005083	0.000000	0.000000

MOSF Emergency Generator: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Annual emissions	0.000094	0.000019	2.328750	2.693250

B.2.4 Remove Heating for Demolished CCD Facilities

Operations Period

Start: January 2033
End: Indefinite

Description

Heating for demolished buildings (Buildings 9801, 9802, 9803, 9804, 9805, 9829, 9810; 184,000 ft^2 total) would no longer be required following demolition. For the purposes of this analysis, it was assumed that heating would be removed by January 2033.

Assumptions

Heat Energy Requirement Method

Area of floorspace to be heated (ft^2): 90,800
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): 0.1278

Boiler/Furnace Usage

Operating time per year (hours): 900

Emissions Summary

Remove Heating: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Annual emissions	-0.051998	-0.945410	-0.794144	-0.005672	-0.071851	-0.071851	0.000000	0.000000

Remove Heating: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Annual emissions	-0.021366	-0.021366	-1134.671056	-1140.931369

B.2.5 Remove Emergency Generators from Demolished Buildings

Operations Period

Start: January2033
End: Indefinite

Description

The emergency generators at Buildings 9801 and 9802 (two total) would be removed following demolition. For the purposes of this analysis, it was assumed that the generators would be removed by January 2033.

Assumptions

Emergency Generator

Type of fuel used in emergency generator: Diesel
Number of emergency generators: 2
Emergency generator's horsepower: 135
Average operating hours per year (hours): 30

Emissions Summary

Remove Emergency Generators: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Annual emissions	-0.022599	-0.093150	-0.062208	-0.019035	-0.020331	-0.020331	0.000000	0.000000

Remove Emergency Generators: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Annual emissions	-0.000375	-0.000075	-9.315000	-10.773000

B.2.6 MOSF Additional Personnel

Operations Period

Start: January 2033
End: Indefinite

Description

The Proposed Action includes 1,250 personnel at the MOSF coming from off campus or new hires. For the purposes of this analysis, it was assumed that the 1,250 personnel would be relocated to the MOSF by January 2033.

Assumptions

Number of Personnel

Civilian personnel: 1,250

Personnel Work Schedule

Civilian personnel: 5 days per week

Emissions Summary

MOSF Additional Personnel: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Annual emissions	1.803377	0.707165	18.978825	0.019740	0.149791	0.056632	0.000000	0.279188

MOSF Additional Personnel: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Annual emissions	0.024387	0.039215	2334.572953	2347.604329

B.3 Sigaba Way Extension (Alternatives 1, 2 and 3)

Action Location

State: Maryland
County: Anne Arundel
Regulatory areas: Anne Arundel County and Baltimore County, Maryland; Baltimore, Maryland

B.3.1 Sigaba Way Extension Construction

Construction Period

Start: October 2031
End: September 2032

Description

It was assumed that the Sigaba Way extension would be constructed over a 1-year period, from October 2031 through September 2032. Demolition, site grading, and removal of existing pavements are captured in the MOSF construction activity.

Trenching/excavation for stormwater infrastructure was estimated at 1,500 LF. A trench width of 5 feet was assumed, resulting in a total trenched area of 7,500 ft^2. Trenching would begin in October 2031 and last approximately 1 month. An estimated 500 yd^3 of fill from trenching would be hauled off site.

The Sigaba Way extension is assumed to be a 1,500-by-80-foot, four-lane boulevard. Paving for the Sigaba Way extension and associated paved surface (e.g., sidewalks, turnouts) is estimated at 120,000 ft^2. Paving would begin in November 2031 and last approximately 11 months.

Assumptions

Trenching/Excavating Phase

Start: October 2031
Phase duration: 1 month
Area of site to be trenched/excavated (ft^2): 7,500
Amount of material to be hauled on or off site (yd^3): 500

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

Paving Phase

Start: November 2031
Phase duration: 11 months
Paving area (ft^2): 120,000

Construction Exhaust

Equipment Name	Number of Equipment	Hours per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	2	6
Rollers Composite	1	7

Emissions Summary

Sigaba Way Extension: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Total emissions	0.078218	0.583352	0.976315	0.001464	0.095448	0.018404	0.000000	0.002368

Sigaba Way Extension: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Total emissions	0.005941	0.001641	148.847388	149.448633

B.4 Well-Being Center (WBC) (Alternatives 1, 2 and 3)

Action Location

State: Maryland
County: Anne Arundel
Regulatory areas: Anne Arundel County and Baltimore County, Maryland; Baltimore, Maryland

B.4.1 WBC Construction

Construction Period

Start: January 2030
End: September 2032

Description

It was assumed that the WBC would be constructed over a 2-year period, from October 2030 through September 2032. Demolition, site grading, and removal of pavements are captured in the MOSF construction activity (October 2030 through December 2030).

Excavation/trenching would be required for removal, rerouting, and installation of utilities, estimated at 2,500 LF. An average of 3 feet was assumed for all utility trenching, resulting in a total trenched area of 7,500 ft^2. Trenching would begin in January 2031 and last approximately 1 month. An estimated 500 yd^3 of fill from trenching would be hauled off site.

Construction would include the 70,000 ft^2 WBC, with an estimated height of 40 feet. Construction would begin in February 2031 and last approximately 18 months.

Architectural coatings would be applied to the WBC for a total of approximately 70,000 ft^2. Architectural coating application would begin in August 2032 and last approximately 1 month.

Paving would be required for circulation and access roads, walkways, outdoor amenity space, and other paved surfaces for an estimated 20,000 ft^2. Paving would begin in September 2032 and last approximately 1 month.

Assumptions

Trenching/Excavating Phase

Start: January 2031
Phase duration: 1 month
Area of site to be trenched/excavated (ft^2): 7,500
Amount of material to be hauled on or off site (yd^3): 500

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

Building Construction Phase

Start: February 2031
Phase duration: 18 months
Area of building (ft^2): 70,000
Height of building (ft): 40

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

Architectural Coatings Phase

Start: August 2032
Phase duration: 1 month
Total square footage (ft^2): 70,000

Paving Phase

Start: September 2032
Phase duration: 1 month
Paving area (ft^2): 20,000

Construction Exhaust

Equipment Name	Number of Equipment	Hours per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

Emissions Summary

WBC Construction: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Total emissions	1.022777	1.712054	2.57861	0.004743	0.124527	0.041318	0.000000	0.007210

WBC Construction: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Total emissions	0.019073	0.012202	493.665706	497.433111

B.4.2 WBC Additional Personnel

Operations Period

Start: January 2033
End: Indefinite

Description

The Proposed Action includes 35 personnel at the WBC coming from off campus or new hires. For the purposes of this analysis, it was assumed that the 35 personnel would be relocated to the WBC by January 2033.

Assumptions

Number of Personnel

Civilian personnel: 35

Personnel Work Schedule

Civilian personnel: 5 days per week

Emissions Summary

WBC Additional Personnel: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Annual emissions	0.050495	0.019801	0.531407	0.000553	0.004194	0.001586	0.000000	0.007817

WBC Additional Personnel: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Annual emissions	0.002643	0.001098	65.368043	65.732921

B.5 Surface Parking (Alternative 1)

Action Location

State: Maryland
County: Anne Arundel
Regulatory areas: Anne Arundel County and Baltimore County, Maryland; Baltimore, Maryland

B.5.1 Surface Parking

Construction Period

Start: April 2032
End: September 2032

Description

It was assumed that paving for surface parking would occur over 6 months toward the end of the construction period, or April 2032 through September 2032. Demolition, site grading, and removal of existing pavements are captured in the MOSF construction activity.

Paving for the surface parking lot within the TSA is estimated at 349,000 ft^2. Paving would begin in April 2032 and last approximately 6 months.

Assumptions

Paving Phase

Start: April 2032
Phase duration: 6 months
Paving area (ft^2): 349,000

Construction Exhaust

Equipment Name	Number of Equipment	Hours per Day
Pavers Composite	1	8
Paving Equipment Composite	2	6
Rollers Composite	2	6

Emissions Summary

Surface Parking: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Total emissions	0.040718	0.260208	0.465540	0.000648	0.009000	0.007824	0.000000	0.000965

Surface Parking: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Total emissions	0.002893	0.001210	73.340035	73.741738

B.6 Consolidated Military Support Facility (CMSF) (Alternatives 2 and 3)

Action Location

State: Maryland
County: Anne Arundel
Regulatory areas: Anne Arundel County and Baltimore County, Maryland; Baltimore, Maryland

B.6.1 CMSF Construction

Construction Period

Start: January 2031
End: September 2033

Description

It was assumed that the CMSF would be constructed over a 2-year period, from October 2031 through September 2033. Demolition, site grading, and removal of pavements are captured in the CMSF construction activity (October 2030 through December 2030).

Excavation would be required for the CMSF's below-grade basement at approximately 63,400 ft^2. Excavation/trenching also would be required for removal, rerouting, and installation of utilities, estimated at 6,000 LF. An average of 3 feet was assumed for all utility trenching, resulting in a total trenched area of 18,000 ft^2. The total area to be excavated or trenched was estimated at 81,400 ft^2. Trenching would begin in January 2032 and last approximately 1 month. Approximately 25,000 yd^3 of fill from excavation of the below-grade basement and from trenching would be hauled off site.

The CMSF would be seven levels above grade with approximately 100,404 ft^2 on the first floor with a height of 20 feet and the remaining six levels at approximately 66,500 ft^2 each with a height of 16 feet. A below-grade basement would be approximately 63,400 ft^2 at a height of 20 feet. Total construction was estimated at 563,000 ft^2. The height of the CMSF would be 116 feet above grade, or 136 feet high including the below-grade basement. Construction would begin in February 2032 and last approximately 18 months.

Architectural coatings would be applied to the WBC for a total of approximately 563,000 ft^2. Architectural coating application would begin in August 2033 and last approximately 1 month.

Paving would be required for circulation and access roads, walkways, the loading dock, and other paved surfaces for an estimated 20,000 ft^2. Paving would begin in September 2033 and last approximately 1 month.

Assumptions

Trenching/Excavating Phase

Start: January 2032
Phase duration: 1 month
Area of site to be trenched/excavated (ft^2): 81,400
Amount of material to be hauled on or off site (yd^3): 25,000

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

Building Construction Phase

Start: February 2032
Phase duration: 18 months
Area of building (ft^2): 563,000
Height of building (ft): 120

Construction Exhaust

Equipment Name	Number of Equipment	Hours per Day
Cranes Composite	1	7
Forklifts Composite	3	8
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	3	7
Welders Composite	1	8

Architectural Coatings Phase

Start: August 2033
Phase duration: 1 month
Total square footage (ft^2): 563,000

Paving Phase

Start: September 2033
Phase duration: 1 month
Paving area (ft^2): 20,000

Construction Exhaust

Equipment Name	Number of Equipment	Hours per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

Emissions Summary

CMSF Construction: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Total emissions	6.845803	3.745271	4.761287	0.010397	1.041056	0.115169	0.000000	0.98672

CMSF Construction: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Total emissions	0.063627	0.236455	2125.823738	2190.265335

B.6.2 CMSF Heating

Operations Period

Start: January 2034
End: Indefinite

Description

Heating for the CMSF (563,000 ft^2) would be required following construction. Heating was assumed to begin in January 2034 and would continue indefinitely.

Assumptions

Heat Energy Requirement Method

Area of floorspace to be heated (ft^2): 563,000
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): 0.1278

Boiler/Furnace Usage

Operating time per year (hours): 900

Emissions Summary

CMSF Heating: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Annual emissions	0.188444	3.426257	2.878056	0.020558	0.260396	0.260396	0.000000	0.000000

CMSF Heating: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Annual emissions	0.077433	0.077433	4112.159560	4134.847550

B.6.3 CMSF Emergency Generator

Operations Period

Start: January 2034
End: Indefinite

Description

Operation of the diesel life-safety generator for the CMSF was assumed to begin in January 2034 and would continue indefinitely. It was assumed that the generator would operate an average of 30 hours per year.

Assumptions

Emergency Generator

Type of fuel used in emergency generator: Diesel
Number of emergency generators: 1
Emergency generator's horsepower: 135
Average operating hours per year (hours): 30

Emissions Summary

CMSF Emergency Generator: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Annual emissions	0.005650	0.023288	0.015552	0.004759	0.005083	0.005083	0.000000	0.000000

CMSF Emergency Generator: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Annual emissions	0.000094	0.000019	2.328750	2.693250

B.6.4 CMSF Additional Personnel

Operations Period

Start: January 2034
End: Indefinite

Description

The Proposed Action includes 1,650 personnel at the CMSF coming from off campus or new hires. For the purposes of this analysis, it was assumed that the 1,650 personnel would be relocated to the CMSF by January 2034.

Assumptions

Number of Personnel

Civilian personnel: 1,650

Personnel Work Schedule

Civilian personnel: 5 days per week

Emissions Summary

CMSF Additional Personnel: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Annual emissions	2.346588	0.832057	24.092725	0.025337	0.194876	0.073582	0.000000	0.365366

CMSF Additional Personnel: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Annual emissions	0.118191	0.050645	2996.068304	3012.799126

B.7 Structured Parking (Alternative 2)

Action Location

State: Maryland
County: Anne Arundel
Regulatory areas: Anne Arundel County and Baltimore County, Maryland; Baltimore, Maryland

B.7.1 Structured Parking

Construction Period

Start: January 2030
End: September 2032

Description

It was assumed that structured parking within the TSA would be constructed over a 2-year period, from October 2030 through September 032. Demolition, site grading, and removal of existing pavements are captured in the MOSF construction activity.

Excavation/trenching would be required for removal, rerouting, and installation of utilities and estimated at 40,000 ft^2. Trenching would begin in January 2031 and last approximately 1 month. An estimated 1,500 yd^3 of fill from trenching would be hauled off site.

The parking structure was assumed to be eight stories with 815,000 ft^2 of parking area. Construction would include the approximately 815,000 ft^2 parking structure, with a height of approximately 80 feet above grade. Construction would begin in February 2031 and last approximately 20 months.

Architectural coatings would be applied to the parking structure for a total of 815,000 ft^2. Architectural coating application would begin in August 2032 and last approximately 1 month.

Paving would be required for new access roads, surface parking areas, sidewalks, and resurfacing areas, estimated at 200,000 ft^2. Paving would begin in September 2032 and last approximately 1 month.

Assumptions

Trenching/Excavating Phase

Start: January 2031
Phase duration: 1 month
Area of site to be trenched/excavated (ft^2): 40,000
Amount of material to be hauled on or off site (yd^3): 1,500

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

Building Construction Phase

Start: February 2031
Phase duration: 18 months
Area of building (ft^2): 815,000
Height of building (ft): 80

Construction Exhaust

Equipment Name	Number of Equipment	Hours per Day

Cranes Composite	1	7
Forklifts Composite	3	8
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	3	7
Welders Composite	1	8

Architectural Coatings Phase

Start: August 2032
Phase duration: 1 month
Total square footage (ft^2): 815,000

Paving Phase

Start: September 2032
Phase duration: 1 month
Paving area (ft^2): 200,000

Construction Exhaust

Equipment Name	Number of Equipment	Hours per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	2	6
Rollers Composite	1	7

Emissions Summary

Structured Parking Construction: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Total emissions	9.767982	3.602536	4.519171	0.009591	0.607274	0.110374	0.000000	0.083121

Structured Parking Construction: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Total emissions	0.056823	0.198235	1879.004432	1933.126749

B.8 Integrated Workforce Support Center (IWSC) (Alternative 3)

Action Location

State: Maryland
County: Anne Arundel
Regulatory areas: Anne Arundel County and Baltimore County, Maryland; Baltimore, Maryland

B.8.1 IWSC Construction

Construction Period

Start: October 2031
End: September 2035

Description

It was assumed that the IWSC would be constructed over a 4-year period, from October 2031 through September 2035. Demolition, site grading, and removal of pavements are captured in the CMSF construction activity (October 2026 through December 2026) and would not be included in the construction period.

Excavation/trenching would be required for removal, rerouting, and installation of utilities, estimated at 6,000 LF. An average of 3 feet was assumed for all utility trenching, resulting in a total trenched area of 18,000 ft^2. Trenching would begin in October 2031 and last approximately 2 months. Approximately 1,000 yd^3 of fill from trenching would be hauled off site.

Construction would include the 700,000 ft^2 IWSC, with an estimated height of 120 feet. Construction would begin in December 2031 and last approximately 43 months.

Architectural coatings would be applied to the IWSC for a total of approximately 700,000 ft^2. Architectural coating application would begin in July 2035 and last approximately 1 month.

Paving would be required for circulation and access roads, walkways, and other paved surfaces for an estimated 20,000 ft^2. Paving would begin in August 2035 and last approximately 2 months.

Assumptions

Trenching/Excavating Phase

Start: October 2031
Phase duration: 2 months
Area of site to be trenched/excavated (ft^2): 18,000
Amount of material to be hauled on or off site (yd^3): 1,000

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

Building Construction Phase

Start: December 2031
Phase duration: 43 months
Area of building (ft^2): 700,000
Height of building (ft): 120

Construction Exhaust

Equipment Name	Number of Equipment	Hours per Day
Cranes Composite	1	7
Forklifts Composite	3	8
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	3	7
Welders Composite	1	8

Architectural Coatings Phase

Start: July 2035
Phase duration: 1 month
Total square footage (ft^2): 700,000

Paving Phase

Start: August 2035
Phase duration: 2 months
Paving area (ft^2): 20,000

Construction Exhaust

Equipment Name	Number of Equipment	Hours per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

Emissions Summary

IWSC Construction: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Total emissions	8.726706	6.196931	8.763612	0.017392	0.504332	0.504332	0.000000	0.110098

IWSC Construction: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Total emissions	0.092425	0.256255	2944.216850	3022.889165

B.8.2 IWSC Heating

Operations Period

Start: January 2036
End: Indefinite

Description

Heating for the IWSC (700,000 ft^2) would be required following construction. Heating was assumed to begin in January 2036 and would continue indefinitely.

Assumptions

Heat Energy Requirement Method

Area of floorspace to be heated (ft^2): 700,000
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): 0.1278

Boiler/Furnace Usage

Operating time per year (hours): 900

Emissions Summary

IWSC Heating: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Annual emissions	0.234300	4.260000	3.578400	0.25560	0.323760	0.323760	0.000000	0.000000

IWSC Heating: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Annual emissions	0.096276	0.096276	5112.809400	5118.091800

B.8.3 IWSC Additional Personnel

Operations Period

Start: January 2036
End: Indefinite

Description

The Proposed Action includes 750 personnel at the IWSC coming from off campus or new hires. For the purposes of this analysis, it was assumed that the 750 personnel would be relocated to the CMSF by January 2036.

Assumptions

Number of Personnel

Civilian personnel: 750

Personnel Work Schedule

Civilian personnel: 5 days per week

Emissions Summary

IWSC Additional Personnel: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Annual emissions	0.927911	0.260173	10.331249	0.007891	0.020603	0.018234	0.000000	0.162137

IWSC Additional Personnel: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Annual emissions	0.050720	0.020949	1491.245320	1498.752248

B.9 West Campus Parking Structure (WCPS) (Alternative 3)

Action Location

State: Maryland
County: Anne Arundel
Regulatory areas: Anne Arundel County and Baltimore County, Maryland; Baltimore, Maryland

B.9.1 WCPS Construction

Construction Period

Start: October 2030
End: September 2032

Description

It was assumed that the WCPS would be constructed over a 2-year period, from October 2030 through September 2032. Construction of the WCPS would occur on approximately 4.05 acres within the 13 acres of an existing parking area. The construction laydown area would cover approximately 6.54 acres; however, no construction activities would occur in this area.

There are no existing buildings within the site; however, demolition of pavement, curbs and gutters, and existing utilities would be required across a section of Ralph W. Adams Road and the entirety of Dennis Road. Demolition of pavements was estimated at 500,000 ft^2. Depth of demolition was assumed to be an average of 2 feet. Demolition would begin in October 2030 and last approximately 2 months.

Site grading would occur across the WCPS footprint (approximately 4.05 acres; 176,418 ft^2) and the pavement demolition area (approximately 500,000 ft^2), for a total of 676,418 ft^2. Site grading would begin in December 2030 and last approximately 1 month. Approximately 105,000 yd^3 of fill from grading and 10,000 yd^3 of demolition debris from pavement demolition (115,000 yd^3 total) would be hauled off site.

Trenching would be required for rerouting, installation, and removal of utilities and excavation for bioretention areas, estimated at 27,000 ft^2 total. Trenching would begin in January 2031 and last approximately 1 month. An estimated 15,000 yd^3 of fill would be hauled off site.

Construction would include the 1,626,949 ft^2 WCPS, with a height of 120 feet above grade. Construction would begin in February 2031 and last approximately 18 months.

Architectural coatings would be applied to the WCPS for a total of 1,626,949 ft^2. Architectural coating application would begin in August 2032 and last approximately 1 month.

Paving would be required for new access roads, surface parking areas, sidewalks, and resurfacing areas, estimated at 460,000 ft^2. Paving would begin in September 2032 and last approximately 1 month.

Assumptions

Demolition Phase

Start: October 2030
Phase duration: 2 months
Area of building to be demolished (ft^2): 500,000
Height of building to be demolished (ft): 2

Construction Exhaust

Equipment Name	Number of Equipment	Hours per Day
Excavators Composite	3	8
Rubber Tired Dozers Composite	2	8

Site Grading Phase

Start: December 2030
Phase duration: 1 month
Area of site to be graded (ft^2): 676418
Amount of material to be hauled off site (yd^3): 115,000

Construction Exhaust

Equipment Name	Number of Equipment	Hours per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	2	8
Tractors/Loaders/Backhoes Composite	3	8

Trenching/Excavating Phase

Start: January 2031
Phase duration: 1 month
Area of site to be trenched/excavated (ft^2): 27,000
Amount of material to be hauled on or off site (yd^3): 15,000

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

Building Construction Phase

Start: February 2031
Phase duration: 18 months
Area of building (ft^2): 1,626,949
Height of building (ft): 120

Construction Exhaust

Equipment Name	Number of Equipment	Hours per Day
Cranes Composite	1	7
Forklifts Composite	3	8
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	3	7
Welders Composite	1	8

Architectural Coatings Phase

Start: August 2032

Phase duration: 1 month
Total square footage (ft^2): 1,626,949

Paving Phase

Start: September 2032
Phase duration: 1 month
Paving area (ft^2): 460,000

Construction Exhaust

Equipment Name	Number of Equipment	Hours per Day
Pavers Composite	1	8
Paving Equipment Composite	2	6
Rollers Composite	2	6

Emissions Summary

WCPS Construction: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Total emissions	19.476223	8.320101	8.658732	0.020623	7.777003	0.269589	0.000000	0.250868

WCPS Construction: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Total emissions	0.138917	0.610443	4912.255463	5077.909497

B.9.2 WCPS Emergency Generator

Operations Period

Start: January 2033
End: Indefinite

Description

Operation of the diesel life-safety generator for the WCPS was assumed to begin in January 2033 and would continue indefinitely. It was assumed that the generator would operate an average of 30 hours per year.

Assumptions

Emergency Generator

Type of fuel used in emergency generator: Diesel
Number of emergency generators: 1
Emergency generator's horsepower: 135
Average operating hours per year (hours): 30

Emissions Summary

WCPS Emergency Generator: Estimated Criteria Pollutant Emissions (tons)

	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$	Lead	NH_3
Annual emissions	0.005650	0.023288	0.015552	0.004759	0.005083	0.005083	0.000000	0.000000

WCPS Emergency Generator: Estimated Greenhouse Gas Emissions (tons)

	CH_4	N_2O	CO_2	CO_2e
Annual emissions	0.000094	0.000019	2.328750	2.693250

Record of Non-Applicability (RONA)
to the General Conformity Rule
for Central Campus Development
Fort Meade, Maryland

August 28, 2025

Air emissions were estimated for demolition of antiquated buildings and utility infrastructure and construction of new operational facilities and upgraded utilities on NSA's Central Campus. Three action alternatives were considered. Central Campus development would occur from Fiscal Year 2031 through Fiscal Year 2035, with operation beginning following construction. Emissions from demolition, site grading, excavation, building construction, architectural coatings, and paving were assessed. Operational emissions from boilers, emergency generators, and additional personnel were assessed.

The Proposed Action would occur within the Baltimore, Maryland O_3 and the Anne Arundel County and Baltimore County, Maryland SO_2 nonattainment areas. 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 highest total net annual emissions for the nonattainment pollutants or their precursors from implementation of any alternative for the project have been estimated at 13.7 tons per year (tpy) NO_X, 30.3 tpy VOCs, and 0.1 tpy SO_X. These emissions would be below the *de minimis* threshold levels, which are 50 tpy for VOCs and NO_X, and 100 tpy for SO_X.

Supporting documentation and emissions estimates appear in the NEPA documentation.

_____
SIGNATURE

_____
TITLE
National Security Agency

C

Coastal Zone Management Act (CZMA) Federal Consistency Determination

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Appendix C: Coastal Zone Management Act (CZMA) Consistency Determination with Maryland's Coastal Zone Management Program (CZMP)

Proposed Central Campus Development on National Security Agency's Central Campus at Fort George G. Meade, Maryland

In accordance with the Federal Coastal Zone Management Act (CZMA) of 1972, as amended, Section 307(c)(3)(A) and 15 Code of Federal Regulations (CFR) Part 930, subpart D, and the CZMA Memorandum of Understanding (MOU) between the State of Maryland and the U.S. Department of Defense (DoD), this document serves as a Federal Consistency Determination for the proposed National Security Agency (NSA) Central Campus Development (CCD) (Proposed Action) on Fort George G. Meade (Fort Meade).

Maryland's Coastal Zone Management Plan (CZMP) was established by Executive Order (EO) 01.01.1978.05 *Coastal Zone Management* and approved in 1978 as required by the Federal CZMA of 1972, as amended. Maryland's Coastal Zone consists of land, water, and sub-aqueous land between the territorial limits of Maryland (including the towns, cities, and counties that contain coastal shoreline) in the Chesapeake Bay, Atlantic coastal bays, and the Atlantic Ocean.

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

NSA is required to determine the consistency for its proposed activities associated with activities at Fort Meade affecting Maryland's coastal resources or coastal uses with the CZMP, which is a partnership among local, regional, and State agencies administered by the Maryland Department of Natural Resources (MDNR). NSA determined that implementation of the Proposed Action would have negligible adverse effects on the land, water, or natural resources of Maryland's Coastal Zone. This document represents an analysis of Maryland's CZMP Enforceable Coastal Policies (MDNR, 2020) and reflects the commitment of NSA to comply with the Maryland CZMP.

1. Proposed Project Description

a. Project Location

NSA is a tenant DoD agency on Fort Meade, occupying approximately 840 acres of the 5,100-acre installation. Fort Meade is located in the northwest corner of Anne Arundel County, Maryland, approximately 17 miles southwest of downtown Baltimore, Maryland and approximately 24 miles northeast of Washington, D.C. Annapolis, MD is approximately 14 miles southeast of Fort Meade.

The project area for the Proposed Action contains two parcels: the Troop Support Area (TSA) and the West Campus Parking Structure (WCPS) parcel. The TSA is approximately 31 acres, bounded on the north, west, south, and east by Cochrane, Canine, Emory, and Love Roads, respectively. The WCPS parcel is approximately 13 acres, located northwest of the TSA, near the main entrance to the NSA campus, and bounded on the north and east by Canine Road.

b. Project Description

NSA is proposing to implement the Proposed Action, which includes multiple alternatives for the development of the NSA Central Campus. NSA proposes to demolish antiquated buildings and

utility infrastructure and construct new operational facilities and upgraded utilities on NSA's Central Campus to allow for greater personnel and mission consolidation and effectiveness, along with more efficient land uses. The Proposed Action would include site preparation to include demolition of any relevant existing structures and infrastructure within the project area and construction of up to four new facilities. The new facilities would include a Cyber National Mission Force (CNMF) Mission Operations Support Facility (MOSF), Consolidated Military Support Facility (CMSF), Integrated Workforce Support Center (IWSC), Well-Being Center (WBC), and surface parking or a parking structure (WCPS). Additionally, Sigaba Way would be extended from its current terminus from the east to Canine Road to the west. Under the No Action Alternative, CCD construction would not occur, and operations would remain decentralized across the NSA campus and leased facilities off campus.

The Proposed Action was evaluated based on environmental, cultural, and socioeconomic impacts, as well as compliance with regulatory and mission requirements. Required permits to implement the Proposed Action may include but are not limited to: Maryland Department of the Environment (MDE) Wetlands and Waterways Permit and Water Quality Certification; National Pollutant Discharge Elimination System permit; MDE Stormwater Permit; and MDE-approved Erosion and Sediment Control Plan (ESCP). Prior to the start of construction, any required construction-related permits or approvals would be obtained by Fort Meade or a third-party developer, as appropriate.

c. Public Participation

Public participation would take place as a part of the Environmental Assessment (EA), which is currently being prepared for the Proposed Action. The EA serves as the primary document to facilitate environmental review of the Proposed Action by federal, state, Native American Tribes, local agencies, and the public. State agency consultation will include review through the Maryland State Clearinghouse. A draft EA and, if warranted, a draft Finding of No Significant Impact (FONSI), will be released to the public for a 30-day review and comment period. Any comments or responses will be addressed prior to publication of the Final EA. NSA would sign a FONSI if there were no significant adverse impact and then proceed with implementation of the Proposed Action. If there are significant and unmitigated adverse impacts associated with the Proposed Action, NSA would publish a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS).

d. Other Consultations

Through the development of the EA process, NSA initiated consultation with Maryland Historical Trust (MHT) State Historic Preservation Officer (SHPO). Copies of this correspondence along with agency coordination letters are provided in Appendix A of the EA.

2. Enclosure 2: Site Location

a. Site Location Map

A site location map (**Figure 1**) and site alternative layouts (**Figure 2**, **Figure 3**, and **Figure 4**) are provided below.

3. Basis for Determination

NSA evaluated the Proposed Action based on its foreseeable effect on the following Enforceable Policies.

Enforceable Policies

a. Core Policies

Relevant core policies are described below. The core policies which are not relevant or applicable to the Proposed Action are: 3 (Protection of State Wild Lands), 4 (Protection of State

Lands & Cultural Resources), 5 (Natural Character & Scenic Value of Rivers & Waterways), 6 (Natural Flow of Scenic & Wild Rivers), 7 (Atlantic Coast Development), 8 (Integrity & Natural Character of Assateague Island), 9 (Public Outreach) and 11 (Safeguards for Outer Continental Shelf Development).

Policy 1. Air Quality

Fort Meade is located within an area designated by the U.S. Environmental Protection Agency as "attainment" for the criteria pollutants except for 8-hour ozone (O_3) and sulfur dioxide (SO_2).

The Proposed Action would result in short- and long-term, minor, adverse impacts on air quality, primarily due to construction equipment and activities, and facility operations. Under the Proposed Action, potential air quality impacts from the construction activities would occur from: 1) combustion emissions due to the use of fossil fuel-powered equipment and vehicles, and 2) particulate emissions during earth-moving activities. Long-term air quality impacts would be expected from emissions associated with the use of gas-fired boilers and life-safety generators. As documented in the EA, air emissions associated with the Proposed Action would not exceed Clean Air Act National Ambient Air Quality Standards General Conformity *de minimis* thresholds.

Policy 2. Noise

The Proposed Action construction activities would have short-term, minor to moderate, adverse impacts on noise in the immediate area from heavy equipment and construction vehicles and increased construction-related traffic along the main routes transporting work crews and materials to the project area, proposed construction and demolition activities, and hauling of debris to local landfills.

The noise-sensitive receptor that would be located nearest to the project area and susceptible to increases in ambient noise is the Midway Commons Housing Community, with the nearest housing units approximately 500 feet away. The highest estimated noise level in the housing area would be 69 dBA, measured from the northwestern corner of the TSA to the southeastern corner of the closest housing unit along Antolak Street.

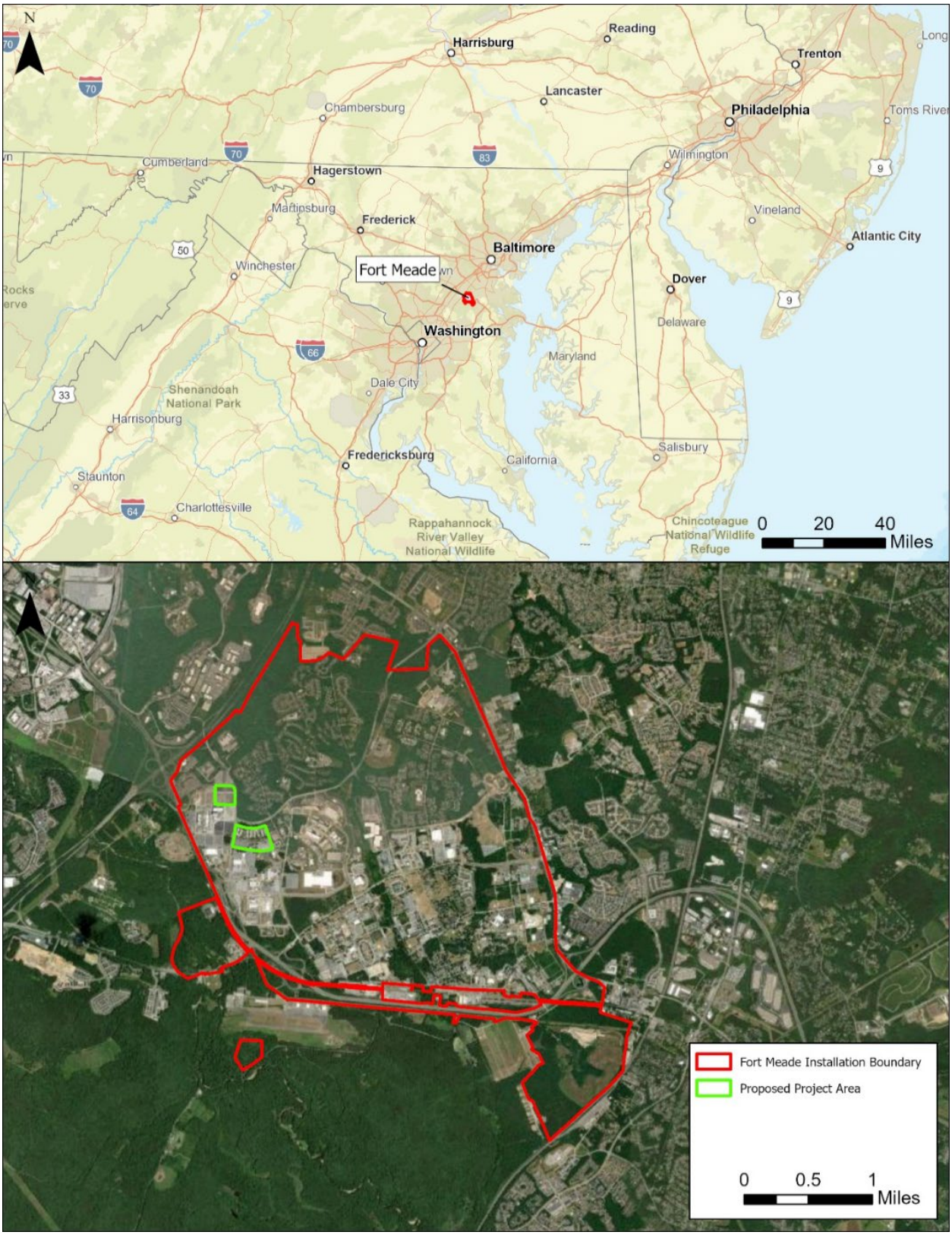

Figure 1. Location of Fort Meade and Proposed Project Area

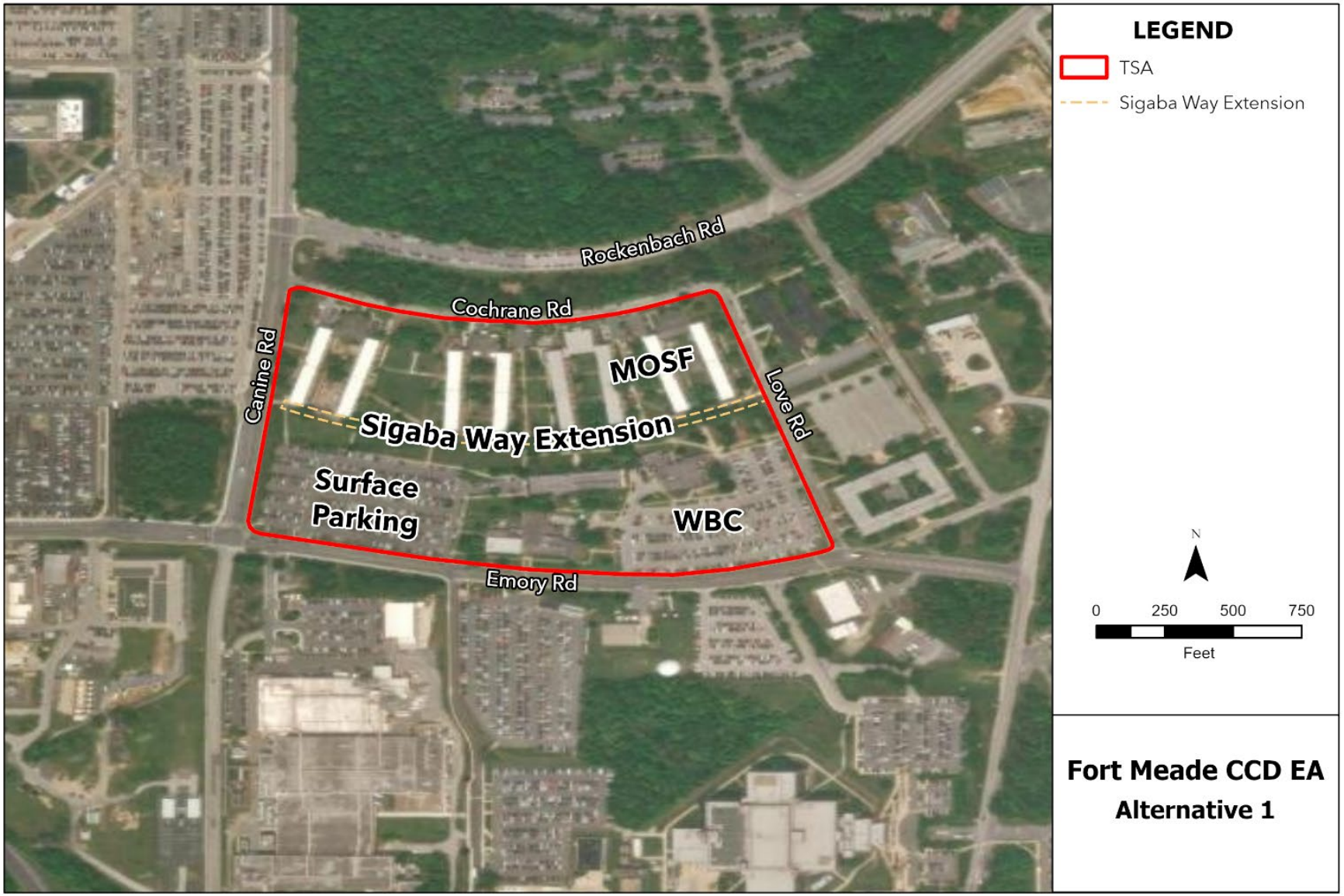

Figure 2. Alternative 1 Site Layout

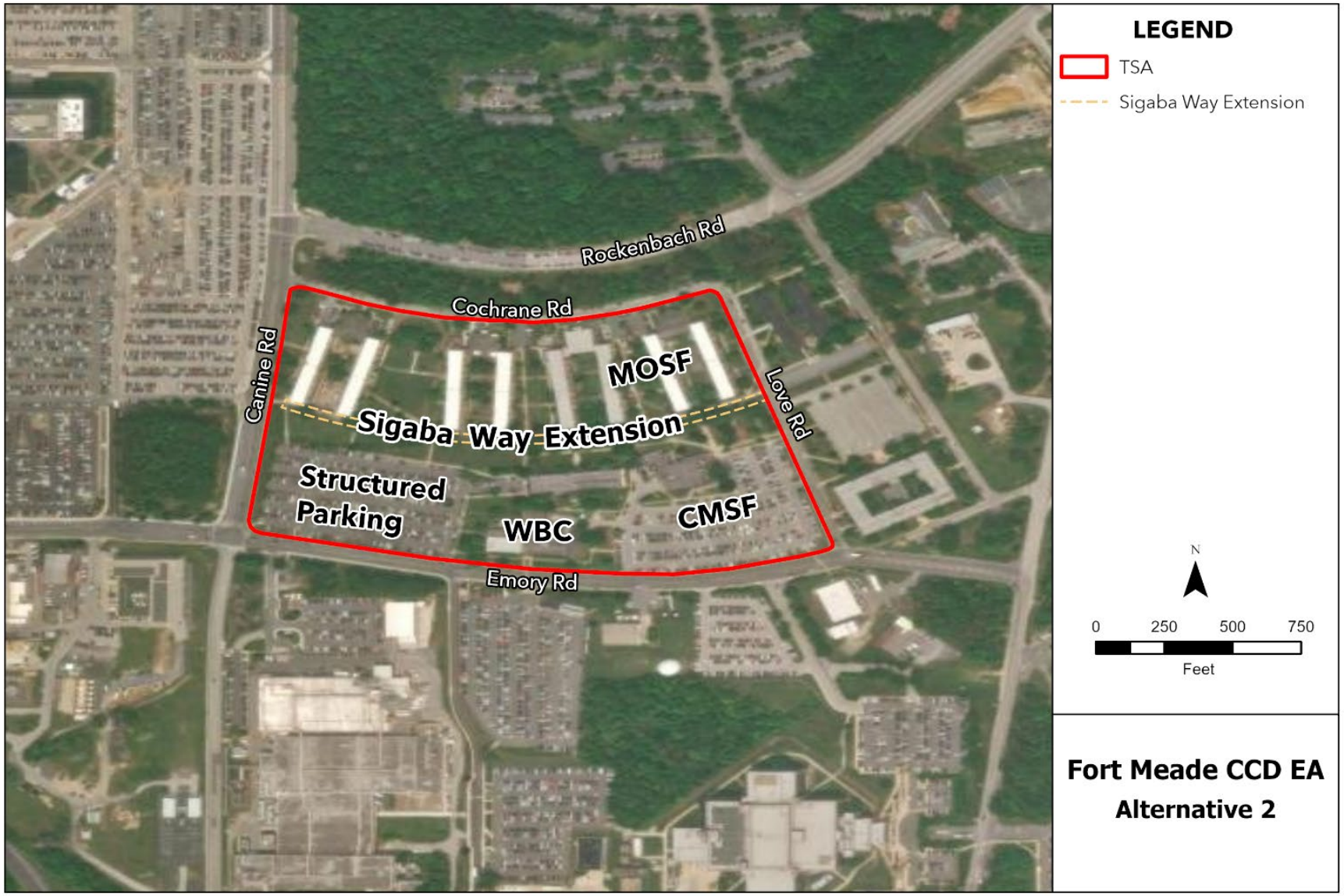

Figure 3. Alternative 2 Site Layout

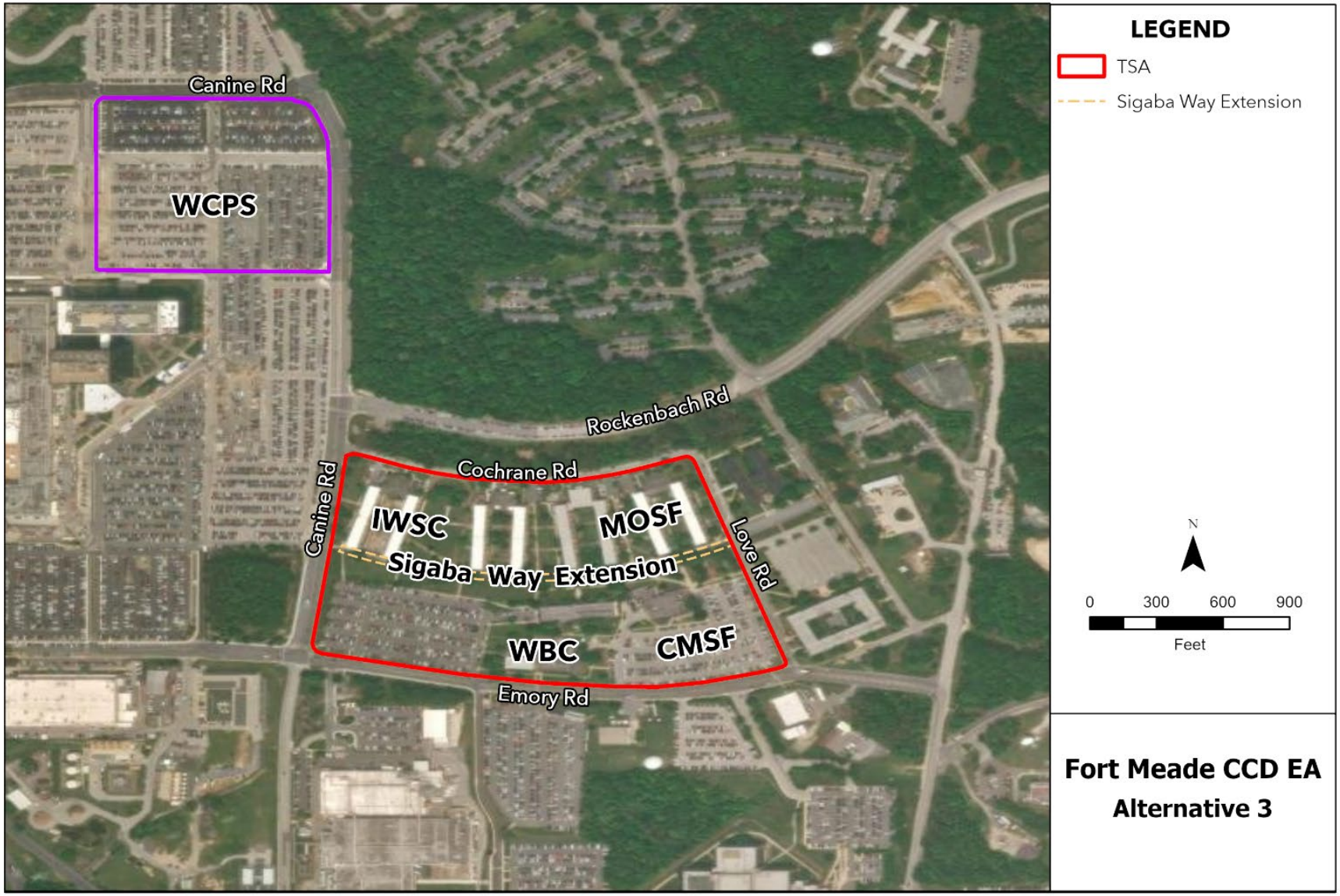

Figure 4. Alternative 3 Site Layout

No long-term noise impacts are expected from the operation of the developed facilities and infrastructure. Following construction, commuter vehicle traffic noise along existing commuter routes on and off the installation could increase slightly from the proposed addition of off-installation commuters.

Policy 10. Erosion and Sediment Control

During the construction of the Proposed Action, ground disturbing activities would include disturbance to soils from excavation, grading, and compaction associated with demolition and construction. Soil productivity 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 ESCP, which is required for the Proposed Action per Code of Maryland Regulations (COMAR) 26.17.1, *Erosion and Sediment Control*, as it involves land clearing, grading, or other earth disturbances to a land area greater than 5,000 square feet (ft^2). Additionally, an approved and Stormwater Pollution Prevention Plan (SWPPP) would be required.

Adhering to the 2015 Maryland Standards and Specifications for Soil Erosion and Sediment Control would ensure effective construction management and planning. This includes implementing appropriate Best Management Practices (BMPs) (e.g., silt fencing, earth dikes), to control runoff, erosion, and sedimentation during construction activities, thereby minimizing adverse impacts on soils. Additionally, areas disturbed outside the new construction footprint would be reseeded, replanted, or re-sodded after construction activities, reducing overall erosion potential and enhancing soil productivity.

Through adherence to applicable permits and implementation of stormwater management measures, the Proposed Action would be consistent to the maximum extent practicable with this enforceable policy.

i. Waste and Debris Management

Relevant waste and debris management policies are described below. Waste and debris management policies that are not relevant to the Proposed Action include: 2 (Hazardous Waste Management in the Port of Baltimore).

Policy 1. Hazardous Waste Management

All construction activities would be required to comply with applicable local, state, and federal regulations for hazardous waste management.

An Installation Hazardous Waste Management Plan (HWMP) and Pollution Prevention (P2) Plan are in place at Fort Meade. These plans identify installation-specific personnel responsibilities and waste management procedures for the identification, management, transport, spill response, and reduction of hazardous materials and waste.

NSA and Fort Meade operate under separate spill prevention control and countermeasure (SPCC) plans. The NSA campus also operates under a Facility Response Plan, as required under 40 CFR 112, *Oil Pollution Prevention*, for all facilities in which hazardous materials are stored. Fort Meade operates under a Facility Consent Decree under the Comprehensive Environmental Response, Compensation, and Liability Act; therefore, any hazardous materials discovered during construction would be addressed in accordance with the Consent Decree.

During construction contractors would be required to use, manage, store, transport, and dispose of hazardous waste and take all necessary precautions to prevent spills of hazardous materials in accordance with federal, state, and local laws and regulations. All hazardous materials and

waste would be managed in accordance with the HWMP, P2 Plan, and applicable installation-specific guidelines. Therefore, the Proposed Action would be consistent to the maximum extent practicable with this enforceable policy.

ii. Water Resources Protection and Management

Relevant water resources protection and management policies are described below. Water resources protection and management policies that are not relevant to the Proposed Action include: 1 (Pollution Discharge Permit), 2 (Protection of Designated Uses), 3 (Prohibition of Harmful Toxic Impacts), 4 (Pre-Development Discharge Permit), 5 (Use of Best Available Technology or Treat to Meet Standards), 6 (Control of Thermal Discharges), 7 (Pesticide Storage), 9 (Unpermitted Dumping of Used Oil), 10 (Toxicity Monitoring), 11 (Public Outreach), and 12 (No Adverse Impact from Water Appropriation).

Policy 8. Stormwater Management

The project proponent would be required to submit a Stormwater Management Plan and an ESCP to MDE for approval prior to any ground disturbing activities and project proponent would be required to obtain a stormwater management permit from MDE. NSA and Fort Meade would also comply to the greatest extent practicable with the Federal Energy Independence and Security Act (EISA) Section 438. The discharge rates would follow Provisions of COMAR 26.17.02.01 MDE, *Water Management, Purpose and Scope* that state projects should maintain predevelopment runoff characteristics as much as possible.

Construction activities may temporarily expose soils and introduce sedimentation to any temporary surface waters from rain, which are not expected to reach the nearest stream, Little Patuxent. To avoid erosion of exposed soil, the construction contractor would install and maintain soil erosion and sediment control measures to minimize sedimentation. Any polluting substances needed for construction equipment on site would be stored and disposed of appropriately, with all necessary permits. Any spills associated with the construction or operation of the Proposed Action would be managed in accordance with the Fort Meade SPCC Plan. All activities would comply and demonstrate consistency with the relevant laws, policies, and regulations.

iii. Flood Hazards

The project area is not located within a floodplain, nor would it create additional flooding. The proposed project would have no impact on Flood Hazard Policies.

b. Coastal Resources

i. Chesapeake and Atlantic Coastal Bays Critical Area

Fort Meade is not located in the Critical Area as designated and administered though MDNR's Critical Area Program. The proposed project would have no impact on Chesapeake and Atlantic Coastal Bays Critical Area policies.

ii. Tidal Wetlands

There are no tidal wetlands, marshes, or tidal waters at Fort Meade. The proposed project would have no impact on tidal wetlands.

iii. Non-tidal Wetlands

Relevant non-tidal wetland policies are described below.

Policy 1. Removal or Alteration is Generally Prohibited Unless There is No Practicable Alternative, in Which Case, Impacts are First Minimized and then Mitigated to Replace Ecological Values Lost

Throughout the NSA campus, approximately 23.2 acres of wetlands have been identified, mostly within the southeastern portion of the installation, 20.6 acres of which are jurisdictional wetlands. Wetlands are present in forested areas along both sides of Rockenbach Road, north of the TSA. A wetland is also present in a forested area 500 feet northeast of the WCPS project area. No wetlands have otherwise been identified within the project area, therefore no impacts or modifications to existing non-tidal wetlands would occur under the Proposed Action.

iv. Forests

Relevant forest policies are described below. Forest policies that are not relevant to the Proposed Action include: 2 (Maintain Resource Sustainability and Prevent or Limit Clear Cutting to Protect Watersheds*),* 3 (Commercial Timber Cuts of Five Acres or More with Pines Comprising 25% of Live Trees Shall Ensure Pine Resource Sustainability), 4 (Minimize Forest Removal for Highway Construction Projects and Mitigate with Equivalent Reforestation if over 1 Acre is Lost), 5 (Protection of Roadside Trees Unless Removal or Trimming is Justified), and 6 (Sediment & Erosion Control in Non-tidal Wetlands).

The Maryland Forest Conservation Act (FCA) and its implementing regulations, as incorporated into Maryland's CZMP and approved by the National Oceanic and Atmospheric Administration (NOAA), are recognized as Enforceable Policies and are therefore applicable. While the FCA itself does not directly apply to federal agencies, its enforceability in this context stems from its designation under the CZMA framework. In addition to meeting the applicable Enforceable Policies under the CZMA, the project would also demonstrate consistency with Fort Meade's internal FCA compliance procedures and Tree Management Policy.

Policy 1. Projects Impacting More than 40,000 Square Feet Must Generally Identify and Protect Habitat and Mitigate for Impacts

During construction of the proposed project, NSA would disturb as little natural habitat as possible. It is the intent of NSA and Fort Meade to conserve forested areas to the maximum extent practicable in accordance with Maryland Forest Conservation Act (FCA) and the Fort Meade Tree Management Policy, while continuing to support current and future missions. This includes managing Fort Meade's forest conservation program in accordance with the 2013 MOU between the State of Maryland and the DoD concerning federal consistency requirements of the CZMA.

Limited removal and disturbance of trees would be required for site preparation, as the project area consists primarily of existing landscaping and developed areas. Areas of temporary ground disturbance would be reseeded with native vegetation wherever possible. Following construction, landscape trees would be replanted throughout the project area, particularly along the Sigaba Way extension. The project proponent would work with Fort Meade Directorate of Public Works to comply with the Fort Meade FCA and Tree Management Policy which requires compliance for all projects of 40,000 ft^2 or larger and that the equivalent of 20 percent of the project area is forested.

v. Historic and Archeological Sites

No cultural resources, including historic buildings, are within or near the project area. The Proposed Action does not include the demolition of any National Register of Historic Places eligible buildings and no adverse effects on archaeological sites are anticipated. Additionally, no known traditional cultural properties or Native American sacred sites are located within the project area. The Proposed Action would have no impact on historic or archaeological sites.

vi. Living Aquatic Resources

Relevant living aquatic resources policies are described below. Living aquatic policies that are not relevant to the Proposed Action include: 1 (Protection of Rare, Threatened, or Endangered Fish or Wildlife), 2 (Sustainable Fisheries Harvesting), 3 (Protection of State Fishery Sanctuaries & Management), 4 (Passage of Finfish), 5 (Time-of-Year Restrictions for Construction in Non-tidal Waters), 6 (Protection of Forest Buffers Along Trout Streams), 8 (Protection and Management of Submerged Aquatic Vegetation), 9 (Protection of Natural Oyster Bars), 10 (Protection of Oyster Aquaculture Leases), 11 (Genetically Modified Organisms ((GMOs) Are Prohibited in State Waters), 12 (Control of Non-native Aquatic Organisms), 13 (Control of Snakehead Fish), and 14 (Nonnative Oysters Prohibited in State Waters).

Policy 7. Non-tidal Habitat Protection & Mitigation

Negligible to minor adverse impacts on surface water are expected due to potential increased sedimentation and erosion from construction-related ground disturbance. No non-tidal surface water bodies are present within the project area; therefore, it is unlikely direct impacts on aquatic and terrestrial habitat impact would occur. Potential indirect effects on non-tidal habitats would be offset by erosion and sediment control and BMPs.

c. Coastal Uses

i. **Mineral Extraction**: Not Relevant
ii. **Electrical Generation and Transmission**: Not Relevant
iii. **Tidal Shore Erosion Control**: Not Relevant
iv. **Oil and Natural Gas Facilities**: Not Relevant
v. **Dredging and Disposal of Dredged Material**: Not Relevant
vi. **Navigation**: Not Relevant
vii. **Transportation**: Not Relevant
viii. **Agriculture**: Not Relevant
ix. **Development**: Not Relevant
x. **Sewage Treatment**: Not Relevant

4. Summary of Findings

Based on the above analysis, NSA would 1) comply with all Maryland coastal policies, 2) ensure all federal consistency requirements are met, 3) follow all MDE regulations, and 4) implement measures to offset any potential environmental effects.

NSA and Fort Meade have conducted a Coastal Zone consistency review of the Proposed Action and have determined that the Proposed Action is consistent, to the maximum extent practicable, with the policies of Maryland's federally approved CZMP.

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D

Definition of Resources

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Appendix D: Definition of Resources

D-1. Land Use and Visual Resources

Land Use. Land use refers to real property classifications indicating natural conditions or human activity occurring on a parcel. Land use descriptions are codified in master planning and local zoning laws. Land use planning ensures orderly growth and compatible uses among adjacent property parcels or areas. No nationally recognized convention or uniform terminology for describing land use categories exists. Consequently, 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 variety of land use categories result from human activity. Descriptive terms for human-activity land uses include residential, commercial, industrial, military, agricultural, institutional transportation, communications, utilities, and recreational.

In appropriate cases, the location and extent of a proposed action needs to be evaluated for its potential effects on a project site and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with any applicable land use or zoning regulations. Other relevant factors include existing land use at the project site, the types of land use on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its permanence.

Visual Resources. Visual resources are defined as the natural and human-made features that give a setting its aesthetic qualities. These features form the overall impression that an observer receives of a given area and shapes their enjoyment of their stay. Evaluating the aesthetic qualities of an area is a subjective process because the value that an observer places on a specific feature varies depending on their perspective.

D-2. Transportation Resources

Transportation includes roadways, VCPs, vehicle cargo inspection facilities, pedestrian access, non-motorized vehicle facilities, transit, and other features with the purposes of providing access and mobility.

This section documents the existing transportation systems, conditions, and travel patterns within and in the vicinity of Fort Meade and the NSA campus. Transportation infrastructure includes primary and secondary roadways that feed onto the installation and VCPs or gates, roadways, and parking areas on the installation. Available capacity and performance of the transportation system inform the conditions that commuters and other travelers would encounter. The traffic network, vehicular traffic, travel patterns, and parking are described for the project area. The analysis evaluates traffic operations during the morning and afternoon peak hours, with emphasis on LOS at key locations, or ability for an intersection to manage the flow of traffic efficiently. LOS is based on the *Highway Capacity Manual* 6th edition control delay standards (TRB 2016). **Figure D-1** shows the LOS signalized and unsignalized control delay categories.

Level of Service (LOS)	Signalized/Unsignalized Control Delay (sec/veh)	Description
A	0 – 10	Free flow (minimal delay)
B	> 10 – 20 > 10 – 15	Stable flow (slight delay)
C	> 20 – 35 > 15 – 25	Stable flow (acceptable delay)
D	> 35 – 55 > 25 – 35	Approaching unstable (tolerable delay)
E	> 55 – 80 > 35 – 50	Unstable flow (intolerable delay)
F	> 80 > 50	Forced flow (jammed)

Source: DoD 2023.

Figure D-1. Signalized and Unsignalized Intersection LOS

D-3. Noise Resources

Noise is any sound that is unwanted, loud, or unpleasant; interferes with communication; is intense enough to damage hearing; or otherwise intrusive. How a person responds to noise varies depending on the type and characteristics of the noise, including distance between the noise source and the receptor, receptor sensitivity, and time of day. Any area where occupants are more susceptible to the adverse effects of noise are considered noise-sensitive receptors. A noise-sensitive receptor includes sensitive populations (e.g., children/elderly) and a land use where people involved in indoor or outdoor activities may be subject to stress or considerable interference from noise. Such locations or facilities where sensitive populations are commonly located include residential dwellings, hospitals, nursing homes, places of worship, educational facilities, and libraries. EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (April 23, 1997), requires federal agencies to make it a high priority to identify and assess environmental-health and safety risks that may disproportionately impact children and ensure that disproportionate risks to children that result from environmental-health or safety risks are addressed. Noise-sensitive receptors may also include noise-sensitive cultural practices, some domestic animals, or certain wildlife species or broad areas such as nature preserves and designated districts in which occasional or persistent sensitivity to noise above ambient (background noise) levels exist in the environment.

Sound is a form of energy and varies by both intensity and frequency. The sound pressure level, measured in dB, is used to quantify sound intensity or loudness. Frequency, measured in hertz (Hz), is the number of times per second that an acoustic wave repeats itself and drives the sound's pitch. The human ear responds differently to different frequencies and is less able to hear low frequencies versus high frequencies. Considering this varying sensitivity, the "A-weighted" scale, measured in dBA, is used to approximate the relative loudness of sound based on human perception. Factors that influence human response to noise include intensity or

loudness, duration that the sound is detected, frequency (or pitch) of the sound, repetition of the sound source, time of day the sound occurs, abruptness of onset or cessation of the sound, and successful application of noise control measures (DoD 2018). Distance from the noise source is also an important consideration because noise levels reduce by 6 dB with every doubling of distance from the source (OSHA 2018). Most people are exposed to daily sound levels of 50 to 55 dBA or higher. Common sounds encountered in daily life and through construction activities and their dBA levels 50 feet from the source are provided in **Table D-1.**.

Various sound level metrics have been developed for purposes of characterizing the sound environment. Day-night average sound level (DNL) is the average sound energy in a 24-hour period with a weighting added to the nighttime A-weighted sound levels. Because of the potential to be particularly intrusive, noise events occurring between 10 p.m. and 7 a.m. are assessed using a 10 dB weighting when calculating DNL. DNL provides a measure of the overall acoustical environment, but it does not represent the sound level at any given time.

Table D-1. Common Sound Sources and Sound Levels

Common Sound Sources	Sound Level (dBA)
Household/Outdoor	
Soft whisper (at 5 feet)	30
Refrigerator (at 3 feet) or light traffic (at 100 feet)	50
Garbage disposal (at 3 feet) or motorcycle (25 feet)	80
Lawn mower (at 3 feet)	90
Car horn (at 3 feet)	100
Ambulance siren (100 feet)	120
Jet taking off (at 200 feet)	130
Clearing and Grading Machinery	
Concrete mixer (at 50 feet)	74–88
Paver (at 50 feet)	86–88
Dozer/tractor/front loader (at 50 feet)	75–80
Construction Equipment	
Grader (at 50 feet)	80–93
Truck (at 50 feet)	83–94
Backhoe (at 50 feet)	72–93
Pile driver (at 50 feet)	91–110

Sources: FAA 2022, CHC 2022, USEPA 1971, DoD 2018.
Key: dBA = A-weighted decibel.

Regulatory Review and Land Use Planning. The Noise Control Act of 1972 directs federal agencies to comply with applicable federal, state, and local noise control regulations. The Occupational Safety and Health Administration (OSHA), under the Noise Control Act, established workplace standards for noise. The minimum requirement states that constant noise exposure 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 and exposure to this level must not exceed 15 minutes within an 8-hour period. Additionally, the standards limit instantaneous exposure, such as impact noise, to 140 dBA. If noise levels exceed these standards employers are required to provide hearing protection equipment that reduces sound levels to acceptable limits (OSHA 2008).

DoDI 4715.13, *DoD Operational Noise Program*, establishes policy, assigns responsibilities, and prescribes procedures for administering the DoD Operational Noise Program and managing military noise.

The state has transferred noise regulation authority to local jurisdictions, however, continues to be responsible for setting standards and general exemptions (Code of Maryland Regulations [COMAR] 26.02.03, Control of Noise Pollution), as provided in the Maryland Environmental Noise Act of 1974. **Table D-2** provides the maximum allowable noise levels for residential, industrial, and commercial areas for the state. Construction and demolition activities are exempt from the limits shown in the table during daytime hours (i.e., between 7 a.m. and 10 p.m.). For construction and demolition, a person may not cause or permit noise levels that exceed 90 dBA during daytime hours nor exceed the levels specified in **Table D-2** during nighttime hours (i.e., between 10 p.m. and 7 a.m.). Blasting operations for construction and demolition are exempt from the limits shown during daytime hours. Additionally, noise from pile-driving activities is exempt from the limits during the daytime hours of 8 a.m. to 5 p.m. Emergency operations are entirely exempt from COMAR 26.02.03.

Table D-2. State of Maryland maximum allowable noise levels

Zoning District	Daytime (dBA)	Nighttime (dBA)
Industrial and Marine	75	75
Commercial and Mixed-Use	67	62
Residential	65	55

Source: COMAR 2021.
Key: dBA = A-weighted decibel.

D-4. Air Quality Resources

Air quality is defined by the concentration of various pollutants in the atmosphere at a given location. Under the Clean Air Act (42 USC Chapter 85), USEPA has established NAAQS for the six pollutants that define air quality, called “criteria pollutants,” which include CO, SO_2, NO_2, O_3, PM_{10} and $PM_{2.5}$, and Pb. VOC and NO_X emissions are precursors of O_3 and are used to represent O_3 generation. 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 SIP to reach attainment or ensure continued attainment. The USEPA General Conformity Rule applies to federal actions occurring in nonattainment and maintenance areas. When the total emissions of nonattainment and maintenance pollutants (or their precursors) exceed specified thresholds (i.e., *de minimis* levels, specified at 40 CFR 93.153), a general conformity determination is required. The General Conformity Rule does not apply to federal actions occurring in attainment or unclassified areas.

Section 202 of the Clean Air Act authorizes USEPA to regulate emissions of air pollutants from new motor vehicles and engines that may endanger public health or welfare. Title V of the Clean Air Act 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 COMAR 26.11.02 and 26.11.03. The

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.

GHGs. GHGs are gas emissions that trap heat in the atmosphere and include water vapor, CO_2, methane, nitrous oxide, tropospheric O_3, and several fluorinated and chlorinated gaseous compounds. GHGs are expressed relative to a reference gas, CO_2, based on their ability to trap heat in the atmosphere, and the results are added to calculate the CO_2e.

The Army follows the *Long-Term Strategy of the United States: Pathways to Net-Zero Greenhouse Gas Emissions by 2050*, which sets target benchmarks to achieve net-zero GHG emissions by no later than 2050 (DOS and EOP 2021).

As of July 2025, USEPA continues to implement the GHG Reporting Program, requiring certain facilities to report GHG emissions from stationary sources, if such emissions exceed 25,000 metric tons of CO_2e per year (40 CFR 98). Major source permitting requirements for GHGs are triggered when a facility exceeds the major threshold of 100,000 metric tpy for stationary-source CO_2e emissions. The program is currently under administrative review, and potential regulatory changes could affect reporting requirements or thresholds in the future. Any such changes would be subject to formal rulemaking and public comment processes.

D-5. Geological Resources

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.

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

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.

Geologic Hazards. Geologic hazards are defined as natural geologic events that can endanger human lives and threaten property. Examples of geologic hazards include earthquakes, landslides, sinkholes, and tsunamis. Earthquakes are a possible geologic hazard in Maryland near Fort Meade.

D-6. Water Resources

Surface Water. Surface-water resources include streams, rivers, ponds, lakes, reservoirs, wetlands, and oceans, which are used for many purposes including ecological support, recreation, drinking water, agriculture, and power generation. The CWA was established to

protect these resources with federal permitting requirements developed under the NPDES program and Section 404 of the CWA. For projects located within the state of Maryland, MDE has the authority to issue NPDES permits.

Published in 2000 and revised in 2009, MDE's *Stormwater Design Manual* incorporates ESD principles, integrating site design, natural hydrology, and additional controls to manage and treat stormwater runoff (MDE 2009). ESD criteria include low-impact development stormwater management controls as outlined in the Department of Defense UFC 3-210-10, *Low Impact Development*.

Groundwater. Groundwater includes water resources located below the Earth's surface and is often used as a primary source for irrigation and drinking-water supplies. Nationally, groundwater resources are protected under the Safe Drinking Water Act. In Maryland, groundwater resources are also protected under the MDE's Water Appropriation and Use Permit System, which ensures that water withdrawals are reasonable for their intended purpose and do not negatively impact water resources or neighboring users. American Water owns and operates the potable water system that serves Fort Meade and obtains potable water from six wells on site under a Water Appropriation and Use Permit.

Floodplains. Floodplains are generally areas of low-lying, flat land present along rivers, stream channels, and coastal waters that are subject to periodic inundation of water because of rain or melting snow. Floodplains play a crucial role in the environment by supporting diverse ecosystems and help regulate water flow and reduce erosion within watersheds. FEMA defines a 100-year floodplain as an area with a 1 percent chance of flooding in any given year. This statistical measure, often referred to as a 100-year flood, does not imply that flooding will occur exactly once every 100 years, but rather that there is a 1 percent likelihood of such events happening each year. EO 11988, *Floodplain Management*, requires federal agencies to avoid, to the extent possible, adverse impacts associated with the occupancy and modification of a floodplain and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative.

Coastal Zone. A coastal zone encompasses coastal waters and adjacent shorelines that are strongly influenced by each other. These zones include islands, transitional and intertidal areas, salt marshes, wetlands, and beaches. Coastal zones are characterized by various landforms and ecosystems, such as rocky shores, mangrove forests, and mudflats. The CZMA, administered by NOAA, was developed to protect the coastal environment from human impact. In Maryland, the MDNR leads the Maryland CZMP. This program is a partnership among local, regional, and State agencies, ensuring comprehensive management of Maryland's coastal resources. The MDE regulates federal activities within Maryland's coastal zone through federal consistency requirements, ensuring that proposed federal activities align with Maryland's coastal resource objectives and policies. The Maryland coastal zone extends from 3 miles out in the Atlantic Ocean to the inland boundaries of 16 counties and Baltimore City that border the Atlantic Ocean, Chesapeake Bay, and the Potomac River up to the District of Columbia. This area encompasses two-thirds of the state's land area and is home to almost 70 percent of Maryland's residents. MDE's Enforceable Coastal Policies address three general groups: general policies, coastal resources, and coastal uses. The general policies are further divided into core, water quality, and flood hazards policies. The Federal Consistency Review process is a key tool for managing coastal uses and resources, facilitating cooperation, and coordination with federal agencies and industry.

D-7. Biological Resources

Biological resources include native or naturalized plants and animals and the habitat in which they exist. Protected and sensitive biological resources include species federally listed as endangered or threatened, candidate, or proposed, and critical habitat; and State-listed species.

Forest Conservation. The Maryland FCA minimizes the loss of the state's forest resources during land development by making the identification and protection of forests and other sensitive areas an integral part of the site planning process. Prime interest areas include areas adjacent to streams or wetlands, those on steep or erodible soils, or those within or adjacent to large contiguous blocks of forest or wildlife corridors. The Maryland FCA is incorporated into the Maryland Coastal Zone Management Program and has been formally approved by NOAA as an Enforceable Policy, making it applicable to all development activities conducted on Fort Meade. The MDNR Forest Service also administers and implements the FCA for non-federal land. NSA demonstrates compliance with the FCA by ensuring that its development and construction projects follow the current Fort Meade FCA and Tree Management Policy to the extent practicable.

Wetlands. Wetlands are protected as a subset of waters of the United States and Section 404 of the CWA. The United States Army Corps of Engineers (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). USACE has jurisdiction over wetlands that are determined to be jurisdictional under Section 404 of the CWA. MDE is the State agency largely responsible for administering Maryland's environmental laws, regulations, and environmental permits related to wetlands, water withdrawal, discharges, stormwater, and water and sewage treatment. Freshwater wetlands in Maryland are protected by the Nontidal Wetlands Protection Program from loss and degradation.

Threatened and Endangered Species. The ESA (16 USC 1536) defines an "endangered species" as any species that is in danger of extinction throughout all or a significant portion of its range. Under the ESA, federal agencies are required to provide documentation that ensures that agency actions will not jeopardize the continued existence of any federally threatened or endangered species or adversely modify or remove critical habitat. The ESA requires that all federal agencies avoid "taking" threatened or endangered species, meaning to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct unless authorized. The provision under Section 7 of the ESA directs all federal agencies to work to conserve endangered and threated species and to use their authority to further the purposes of the ESA.

Migratory Birds. The MBTA of 1918 is the primary legislation in the United States established to conserve migratory birds. The MBTA prohibits the intentional and unintentional taking, killing, or possessing of migratory birds unless permitted by regulation. EO 13186, *Responsibilities of Federal Agencies to Protect Birds*, provides a specific framework for the federal government's compliance with its MBTA obligations and aids in incorporating national planning for bird conservation into agency programs. An MOU between DoD and USFWS promotes the conservation of migratory birds in compliance with EO 13186, while sustaining the use of military-managed lands and airspace for testing, training, and operations. The MOU expired in 2019; however, an addendum signed on April 21, 2022, extended the MOU indefinitely or until either party determines that the MOU needs to be revised (USFWS 2022).

Bald and Golden Eagle Protection Act. Bald and golden eagles are protected under the BGEPA of 1940 (16 USC 668–668c), as amended in 1962. The BGEPA prohibits the take, possession, or transport of bald eagles; golden eagles; and the parts (e.g., feathers, body parts), nests, and eggs without authorization from USFWS. Activities that directly or indirectly lead to a "take" are prohibited without a permit from USFWS.

D-8. Cultural Resources

The term "cultural resources" encompasses a wide range of heritage-related assets as defined by multiple federal laws and EOs. Key regulations include the NHPA (1966), the Archaeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1978), the Archaeological Resources Protection Act (1979), the Native American Graves Protection and Repatriation Act (1990), and EO 13007, *Indian Sacred Sites*.

The NHPA addresses various cultural resources, including prehistoric and historic sites, buildings, structures, districts, and other physical evidence of human activity deemed significant by a culture, subculture, or community for scientific, traditional, religious, or other reasons. These resources may provide insight into past civilizations' cultural practices or hold cultural and religious importance to contemporary groups. Resources that meet the criteria established in the NHPA are considered eligible for listing in the NRHP and are classified as "historic properties" under NHPA protections. Additionally, the Native American Graves Protection and Repatriation Act mandates consultation with culturally affiliated Native American tribes regarding the treatment and repatriation 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 consider the effects of their undertakings on historic properties and provide the Advisory Council on Historic Preservation with an opportunity to comment. As part of this process, agencies assess the NRHP eligibility of cultural resources within a proposed project's Area of Potential Effects (APE) and determine potential impacts on historic properties in coordination with the State Historic Preservation Office and other stakeholders. The APE is defined as the geographic area where an undertaking may directly or indirectly alter the character or use of historic properties, if present. For the proposed project, the APE includes the area affected by direct impacts such as ground disturbance, infrastructure demolition, renovation, and development, as well as indirect impacts like temporary construction noise and visual changes to the surrounding landscape. The historic properties evaluated in this EA were previously identified in accordance with Section 110 of the NHPA, which requires federal agencies to establish programs for the inventory and nomination of cultural resources under their purview to the NRHP.

Archaeological Resources. Archaeological resources encompass prehistoric or historic sites that contain physical evidence of past human activity but lack standing structures. These sites are characterized by areas where human activity has visibly altered the landscape or where physical remnants, such as projectile points or bottles, are present.

Architectural Resources. Architectural resources encompass standing buildings, bridges, dams, and other structures; groups of buildings or structures; and designed landscapes that hold historical or aesthetic significance. Typically, these resources must be more than 50 years old to be considered for inclusion in the NRHP. However, more recent buildings or structures may qualify for protection if they are of exceptional importance or have the potential to attain historical significance over time.

Resources of Traditional, Religious, or Cultural Significance to Native American Tribes. Resources of traditional, religious, or cultural significance may include archaeological sites, sacred locations, historic structures, neighborhoods, prominent landforms, habitats, plants, animals, and minerals that are vital to preserving traditional cultural practices.

D-9. Infrastructure Resources

Infrastructure consists of the systems, physical structures, and utilities that enable a population in a specified area to function. Infrastructure is 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 potable water supply, sanitary sewer and wastewater treatment system, stormwater drainage, electrical supply, natural-gas system, liquid fuel supply, steam and chilled-water systems, and solid waste.

D-10. Sustainability Resources

Sustainability refers to the ability to maintain or support a process or manage establishments over time without depleting natural or physical resources. Sustainable conditions are those in which humans and nature can exist in productive harmony to support present and future generations. NEPA committed the United States to sustainability, declaring it a national policy "to create and maintain conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations" (USEPA 2024b).

The 2005 Energy Policy Act (42 USC 13201 et seq.) was established to address energy production in the United States, including energy efficiency, renewable energy, oil and gas, coal, tribal, nuclear matters and security, vehicles, and motor fuels (including ethanol), hydrogen, electricity, energy tax incentives, hydropower, and geothermal energy. Additionally, the Energy Policy Act provides guidance and requirements for the development and management of more reliable, cost-efficient energy infrastructure (USEPA 2024c).

The 2007 EISA aims to increase U.S. energy security, develop renewable-energy production, and improve vehicle fuel economy. The EISA provides specific guidance on sustainable building actions. Under the EISA, designs for new buildings or major renovations beginning in FY 2030 or later must reduce fossil fuel–generated energy consumption by 100 percent compared to an FY 2003 baseline (USEPA 2024d).

EO 14154, *Unleashing American Energy*, aims to use America's affordable and reliable energy and natural resources. This EO also aims to protect the United States' economic and national security and military preparedness be ensuring that an abundant supply of reliable energy is readily accessible in every state and territory across the nation (Federal Register 2025).

D-11. Hazardous Materials and Wastes Resources

Hazardous Materials and Petroleum Products. Hazardous materials are items or agents, including biological, chemical, or physical materials, that have the potential to cause harm to humans, animals, and the environment. USEPA, OSHA, the United States Department of Transportation (USDOT), and the U.S. Nuclear Regulatory Commission regulate hazardous materials, and each agency provides its own definition of hazardous materials for regulatory purposes. USDOT regulates transportation of hazardous materials per 49 CFR 105–180, and

the Hazardous Materials Table provided in 49 CFR 172.101 lists hazardous materials identified by USDOT.

Hazardous and Petroleum Wastes. Hazardous waste is defined as waste with properties that are dangerous or capable of having a harmful effect on human health or the environment. Under RCRA, regulated hazardous waste includes solid waste that meets hazardous waste classification under RCRA Subtitle C. Management of hazardous waste includes a comprehensive regulatory program that tracks waste from incorporation to final disposal as identified under 40 CFR 242, *Standards Applicable to Generators of Hazardous Waste*. Universal wastes are common hazardous wastes subject to special management provisions under 40 CFR 273, *Standards for Universal Waste Management*.

Toxic Substances. Under the Toxic Substances Control Act (15 USC 53), USEPA regulates toxic chemicals and substances, including mercury, PCBs, ACMs, and LBP.

PCBs are organic chemicals known as polychlorinated hydrocarbons that were used in multiple industrial and commercial applications including, but not limited to, electrical and hydraulic equipment. PCBs were banned in the United States in 1979 and are regulated under 40 CFR 671. Disposal of PCBs is addressed under 40 CFR 750. ACMs include materials that contain more than 1 percent asbestos and are categorized as friable or non-friable. The demolition and renovation of ACMs is regulated primarily under USEPA, specifically through National Emission Standards for Hazardous Air Pollutants. LBP in building materials is regulated under Section 302(c) of the Lead-Based Paint Poisoning Act of 1971. The regulatory threshold in paint for residences is identified at levels equal to or exceeding 1.0 milligram per square centimeter (mg/cm^2) or 0.5 percent by weight for residential structures constructed post-1978. All buildings constructed prior to 1978 are considered to contain LBP. Disposal of LBP waste is regulated by RCRA under 40 CFR 260, dependent upon quantity or concentration.

Environmental Contamination and Ordnance. Cleanup of hazardous substances, pollutants or contaminants, and munitions in accordance with CERCLA (aka Superfund) and other applicable federal laws addressing environmental restoration at DoD installations and facilities are addressed under the Defense Environmental Restoration Program.

D-12. Socioeconomic Resources

Socioeconomics encompasses economies and social elements such as population levels and economic activity. Factors that describe the socioeconomic environment represent a composite of several interrelated and nonrelated attributes. 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. data regarding personal income in a region are used to compare the before and aftereffects of any jobs created or lost as a result of the Proposed Action.