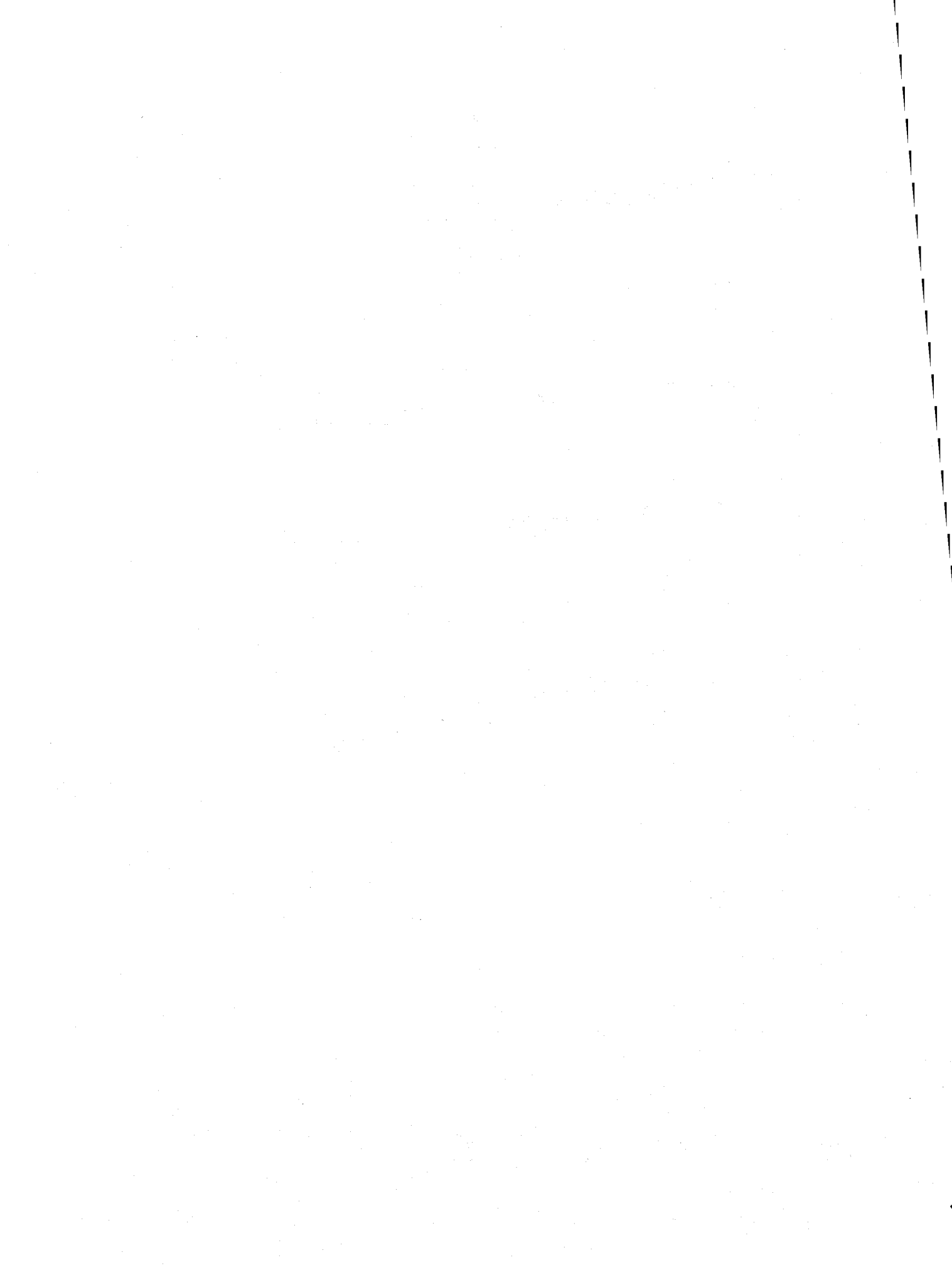


FINAL

**ENVIRONMENTAL IMPACT STATEMENT
FOR THE
PROPOSED UTILITIES UPGRADE PROJECT
AT
FORT GEORGE G. MEADE, MARYLAND**

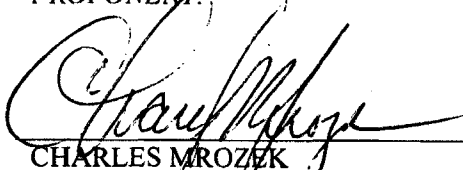
**NATIONAL SECURITY AGENCY
FORT GEORGE G. MEADE, MARYLAND**

JANUARY 2009



FINAL
ENVIRONMENTAL IMPACT STATEMENT
FOR THE
PROPOSED UTILITIES UPGRADE PROJECT
AT
FORT MEADE, MARYLAND

PROPONENT:

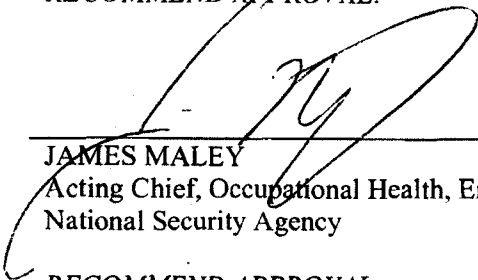


CHARLES MROZEK
Chief, Facilities Services
National Security Agency

21 JAN 09

DATE

RECOMMEND APPROVAL:



JAMES MALEY
Acting Chief, Occupational Health, Environmental, and Safety Services
National Security Agency

21 JAN 09

DATE

RECOMMEND APPROVAL:



DANIEL L. THOMAS
Colonel, U.S. Army
Installation Commander
Fort George G. Meade

21 JAN 09

DATE

APPROVED:



KEITH B. ALEXANDER
Lieutenant General
Director, National Security Agency/Central Security Service

22 JAN 09

DATE

COVER SHEET

UTILITIES UPGRADE PROJECT AT FORT GEORGE G. MEADE, MARYLAND

Proponent: U.S. Department of Defense (DOD), National Security Agency (NSA)

Affected Location: Fort George G. Meade, Maryland

Report Designation: Final Environmental Impact Statement (EIS)

Proposed Action: DOD proposes to upgrade and modernize utilities infrastructure on the NSA campus of Fort Meade, Maryland.

Abstract: DOD proposes to construct and operate (1) a North Utility Plant, (2) a South Generator Facility, and (3) a Central Boiler Plant. The proposed North Utility Plant would provide a fully redundant emergency electrical power supply. Components of the North Utility Plant include new transmission and distribution lines on the NSA campus, a North Electrical Substation and associated switchgear, and a North Generator Facility and associated fuel storage. The proposed South Generator Facility, and associated fuel storage, would upgrade emergency electrical power to an existing substation. The proposed Central Boiler Plant would replace an existing central boiler plant that is outdated and inefficient. This project would include replacement of four boiler units and associated piping and controls, and the replacement of the two fuel storage tanks. DOD proposes to use Tier 2 diesel-fueled emergency generators with selective catalytic reduction for both proposed generator facilities; and boilers with low oxides of nitrogen burners, flue gas recirculation, and selective catalytic reduction.

The analysis in this EIS considers various alternatives to the Proposed Action, including the No Action Alternative, emergency power system alternatives, air emissions control alternatives, location alternatives for the various proposed facilities, and utility line location alternatives. As a result of the development of location alternatives, DOD must also consider alternatives to mitigate adverse impacts associated with the loss of parking spaces.

For additional information, contact Mr. Jeffrey Williams, Office of Occupational Health, Environmental, and Safety Services, 9800 Savage Road, Suite 6404, Fort Meade, MD 27055, 301-688-2970.

Written comments on the Final EIS should be submitted by mail to "Utilities Upgrades EIS," c/o e²M, 2751 Prosperity Avenue, Suite 200, Fairfax, VA 22031, or by email to *UtilityEIS@e2m.net*.



EXECUTIVE SUMMARY

Executive Summary

Introduction

The U.S. Department of Defense (DOD) proposes to upgrade and modernize utilities and infrastructure on the National Security Agency (NSA) campus at Fort George G. Meade, Maryland (Fort Meade). Proposed upgrades include construction and operation of a North Utility Plant, a South Generator Facility, and a Central Boiler Plant. The Proposed Action would have a total construction footprint of 183,000 square feet (ft²) (4.2 acres).

This Final Environmental Impact Statement (EIS) has been prepared through coordination with Federal and state agencies and will support DOD decisionmaking. The EIS identifies and assesses the potential impacts associated with the proposed construction and operation of the systems associated with the Proposed Action. This EIS is also being prepared to fulfill the requirements of the National Environmental Policy Act (NEPA) of 1969.

Purpose and Need

The purpose of the Proposed Action is to upgrade and modernize aging utilities infrastructure through renovation, modernization, and replacement. The Proposed Action is needed to support the capabilities of the existing NSA campus for current and future missions.

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 utilities upgrades are encouraged to participate in the public involvement process.

The purpose of conducting scoping is to provide members of the public and applicable regulatory agencies with the opportunity to submit formal comments regarding the development of the Proposed Action and possible alternatives and on other issues relevant to the EIS. DOD initiated the public scoping process on January 2, 2008, with the publication of the Notice of Intent to prepare an EIS (73 *Federal Register* 172). Advertisements were published in the *Baltimore Sun* and the *Washington Post* on February 6 and 7, 2008, respectively, notifying the public of the intent to prepare an EIS, announcing the public meeting date, and requesting comments on the project. A letter was also distributed on February 12, 2008, to approximately 65 potentially interested Federal, state, and local agencies; Native American tribes; and other stakeholder groups or individuals. Subsequently, a scoping meeting was held on February 20, 2008, in Laurel, Maryland, at the Ramada Inn Laurel to provide a forum for the public and agencies to obtain information and to provide scoping comments. Scoping comments were accepted through March 3, 2008. Substantive concerns identified during scoping included the potential impacts of the proposed utilities project on the Baltimore-Washington Parkway (BW Parkway)—which is listed on the National Register of Historic Places (NRHP)—specifically, the proximity to National Park Service (NPS) land, the removal of visual and scenic forest buffers, the addition of tall or visible buildings, and the importance of properly designed storm water management systems.

A Notice of Availability for the Draft EIS was published in the *Federal Register* on October 17, 2008. The Draft EIS was distributed to 14 agencies, organizations, and individuals that had expressed interest in reviewing it. In addition, 5 individuals requested copies during the public review period. A Public

Meeting was held in Laurel, Maryland, at the Ramada Inn Laurel on November 6, 2008 to provide a public forum for providing information to the public and agencies and for receiving comments. The meeting was advertised in the *Baltimore Sun* and the *Washington Post* on October 17, 2008. The Public Meeting was attended by 10 individuals. No oral or written comments were provided during the Public Meeting. Comments on the Draft EIS were accepted through December 1, 2008. In total, 3 comments were received during the public review period (see **Appendix C**).

Description of the Proposed Action

The Proposed Action includes the construction and operation of a North Utility Plant, a South Generator Facility, a Central Boiler Plant, and associated infrastructure.

The North Utility Plant is proposed to provide electrical power with redundancy, and would consist of a North Electrical Substation, a North Generator Facility, transmission lines, and distribution lines. The North Electrical Substation would provide 50 megavolt-amperes (MVA) of power to the NSA campus. The North Generator Facility would provide 60 to 65 megawatts (MW) of emergency electrical power generated by diesel engine/generator sets. The proposed generator sets would have a selective catalytic reduction (SCR) system to control air pollutant emissions, and each generator would be equipped with an exhaust stack no taller than 35 feet above ground level. The North Generator Facility would also include aboveground storage tanks (ASTs) for diesel fuel, waste oil, and urea. New transmission lines within the NSA campus would be installed to supply primary power. Distribution lines would connect from the proposed North Electrical Substation to an existing electrical power distribution system. The total building footprint for the North Utility Plant would be approximately 105,000 ft² (2.4 acres). Installation of electrical distribution lines would disturb up to 90,000 ft² of area. Installation of transmission lines, which could be either overhead or underground, could disturb up to 53,000 ft² of area. It is assumed that all internal campus utility lines would be installed in previously disturbed areas.

The South Generator Facility is proposed to provide emergency electrical power to supplement an existing South Utility Plant. As a part of this project, an emergency generator facility currently capable of generating 17.6 MW of electrical power would be replaced with a larger generator facility that is capable of generating 47 to 52 MW of emergency electrical power using diesel engine/generator sets. The proposed generator sets would have an SCR system to control air pollutant emissions, and each generator would be equipped with an exhaust stack no taller than 35 feet above ground level. The South Generator Facility would also include ASTs for diesel fuel, waste oil, and urea. The total building footprint would be 60,000 ft² (1.4 acres).

The proposed Central Boiler Plant would replace an existing outdated boiler plant. Four vintage boilers would be replaced with four comparably sized modern dual-fuel boilers with a total heat input rating of 392 million British thermal units per hour (MMBtu/hr). Similar to the existing boiler plant, the proposed Central Boiler Plant would operate primarily using natural gas with No. 2 fuel oil backup. Two modern ASTs for No. 2 fuel oil, with associated spill containment storage, are proposed to replace the existing ASTs. The footprint for the Central Boiler Plant would be approximately 18,000 ft² (0.4 acres).

Alternatives Analysis

An alternatives analysis assists in avoiding unnecessary impacts by considering reasonable options to achieve the purpose and need. The alternatives considered include a No Action Alternative, emergency power system alternatives, emissions control alternatives, facility alternatives, corridors for installation of utility lines, and parking alternatives.

No Action Alternative. Under the No Action Alternative, DOD would not construct a North Utility Plant or upgrade the South Generator Facility. The aging components of the Central Boiler Plant would not be replaced. The existing South Generator Facility and Central Boiler Plant would continue to be used in their current conditions. The No Action Alternative is evaluated in detail in the EIS and serves as a baseline from which to evaluate impacts.

Emergency Power Systems Alternatives. The emergency power systems alternative must be proven and commercially available technology, be reliable equipment, have rapid start-up, have sufficient energy output, and meet Federal and state environmental regulations. Diesel-fueled generator sets meet these criteria. Under this alternative, use of Tier 2 generators was selected as representative of the range of anticipated generators that could be used to provide emergency power for the proposed North Generator Facility and the South Generator Facility. All generators meeting Tier 2 air emissions standards in the range of 2.2 to 2.7 MW would have comparable emissions profiles. Depending on the size of the individual units actually used, between 23 and 29 generators would be needed to generate 65 MW of energy output for the North Generator Facility, and between 18 and 22 generators would be needed to generate 52 MW of energy output for the South Generator Facility. No other emergency power system alternatives were found to meet the evaluation criteria identified for this Proposed Action. Therefore, use of Tier 2 generators is the Proposed Action.

Emissions Control Alternatives. To qualify as a reasonable alternative, emissions control alternatives must have the potential to significantly reduce air emissions, be proven and commercially available technology, be energy-efficient, and be cost-effective. Three emissions controls meet these criteria and are evaluated in detail in the EIS: low oxides of nitrogen (NO_x) burners and flue gas recirculation (FGR) for boilers, SCR for boilers, and SCR for generators. In addition to emissions-control technologies, this EIS also considers limiting boiler and generator operations. Due to the operational requirements of the Proposed Action, limiting operations alone would not be a suitable method of controlling emissions. However, when used in conjunction with other control technologies, it might provide effective means to comply with state and Federal permitting requirements. Limiting operations is not pursued as a separate alternative but is addressed in this EIS.

Low NO_x burners and FGR are the most common combustion-control technologies for reducing NO_x emissions in boilers. These control methods are not technically viable for internal combustion engines, such as generators. The combination of low NO_x burners and FGR for boilers has the potential to significantly reduce air emissions, is a proven technology, is energy-efficient, and is cost-effective. Based on publicly available information, selected models of commercially available ultra-low NO_x boilers would meet the Clean Air Act (CAA) New Source Performance Standards (NSPS) and incorporate low NO_x burners and FGR technologies as combustion controls.

The SCR alternative for boilers is analyzed in this EIS because strict permitting requirements exist in the region. SCR is not usually applied to boilers because the incorporation of low NO_x burners and FGR in boiler design has marginalized the effectiveness of SCR in reducing the already ultra-low NO_x emissions. However, SCR is a reasonably available control technology that could be applied to boilers if determined necessary to further control air pollutant emissions.

SCR is a very effective post-combustion control method of reducing NO_x emissions in generators. Despite its high cost and because of the limited effectiveness of other emissions-control technologies, SCR is the most effective NO_x control for generators. SCR can also meet the U.S. Environmental Protection Agency's (USEPA) Lowest Achievable Emissions Rate (LAER) requirement for generators.

Facility Alternatives. DOD considered various facility alternatives for siting new utilities. Reasonable locations should be within the NSA-controlled property, be available for development or redevelopment,

have sufficient square footage to accommodate the project, maximize use of existing infrastructure and utility connections, avoid disturbing environmental sensitive areas, minimize impacts on adjacent land uses (e.g., military family housing [MFH] or BW Parkway), and minimize the number of parking spaces lost. Eight sites were identified as meeting these criteria and are considered as facility alternatives in the EIS. **Table ES-1** summarizes all eight sites and identifies for which utility the site would be considered suitable.

Utility Line Alternatives. DOD will not disclose the locations of existing or proposed utility corridors for security reasons. For the purposes of this EIS, it is assumed that approximately 90,000 ft² of trenching would occur to install power distribution lines. Additionally, approximately 53,000 ft² of trenching could be needed to install transmission lines, which would enter the NSA campus at an undetermined location along Maryland Route 32 and connect to the proposed North Electrical Substation. Transmission lines could be either overhead or underground.

It is assumed that distribution lines and transmission lines would be installed in previously disturbed areas along existing utility corridors or roadways. It is anticipated that final selection of utility corridors would be made during the engineering and design process. If potential environmental impacts are identified that are beyond those analyzed in this EIS, DOD would undertake additional analyses at such time in accordance with all Federal and state review and permitting procedures.

Parking Alternatives. The existing NSA campus has limited land that can be developed. Construction of new facilities could result in the displacement of some campus parking, depending on the facility alternative selected (refer to **Table ES-1**). Site-specific parking and transportation studies would be accomplished during the design and engineering process to ensure efficient and safe use of space, ingress and egress, and movement patterns. DOD considered various alternatives for siting replacement parking. Reasonable locations should have sufficient square footage to accommodate required project components, avoid disturbing environmentally sensitive areas, minimize impacts on adjacent land uses, minimize the distance employees would have to walk, and be cost-effective.

Eight sites were identified as meeting these criteria; six sites (Sites 1, 2, 3, 4, 6, and 7) are identified in **Table ES-1**, and two additional sites (Sites 9 and 10) were also identified. Preliminary screening resulted in two primary parking alternatives: construction of one or more surface lots or construction of a parking garage. For the purposes of this EIS, a reasonable range of parking alternatives is analyzed in detail to bound the analysis. Assumptions under which replacement parking would be needed—and how much replacement parking would be required—are based on the combination of facility alternatives selected (as identified in **Table ES-1**). It is assumed that a one-to-one area replacement would be needed; that is, for 1 acre of parking lost, 1 acre of equivalent parking would need to be constructed. The full range of options that could be considered reasonable alternatives is identified in **Appendix D** of the EIS. The alternatives evaluated as representative of the range of alternatives include the construction of surface parking lots at undeveloped sites (Sites 4 and 6), construction of a parking garage at Site 3, construction of a parking garage at Site 9, and construction of a parking garage at Site 10. **Table ES-2** summarizes the parking alternatives considered in detail.

Table ES-1. Summary of Facility Alternatives Evaluated in Detail

Site No.	Size	Utility	Brief Description
1	7.3 acres	North Utility Plant	<ul style="list-style-type: none"> - Bounded by Connector Road, Canine Road, and forest - MFH is 500 feet northeast - BW Parkway is 1,850 feet northwest
2	4.1 acres	North Utility Plant	<ul style="list-style-type: none"> - Bounded by Road A, Canine Road, Wray Road, and Dennis Road - MFH is 610 feet northeast - BW Parkway is 2,660 feet northwest
3	5.6 acres	North Utility Plant	<ul style="list-style-type: none"> - Bounded by National Vigilance Park, Canine Road, and forest - BW Parkway is 1,200 feet northwest - National Cryptologic Museum is 890 feet north
4	6.1 acres	North Utility Plant (preferred site)	<ul style="list-style-type: none"> - Surrounded by forest, between Sites 1 and 3 - Undeveloped site (tree stand), within a Forest Conservation Area - BW Parkway is 1,220 feet west - National Vigilance Park is 1,160 feet southwest - National Cryptologic Museum is 980 feet north
5	1.4 acres	South Generator Facility (preferred site)	<ul style="list-style-type: none"> - Bounded by Emory Road and Canine Road - Existing use is for seven emergency generator sets in utility yard
6	2.6 acres	South Generator Facility	<ul style="list-style-type: none"> - Bounded by Dennis Road, Herczog Road, Canine Road, and Emory Road - Undeveloped site (tree stand) - Barracks are 370 feet northeast
7	5.3 acres	South Generator Facility or Central Boiler Plant (not both)	<ul style="list-style-type: none"> - Bounded by Canine Road and Emory Road - Currently used as a motor pool - Barracks are 860 feet north
8	1.8 acres	Central Boiler Plant (preferred site)	<ul style="list-style-type: none"> - Existing use is a boiler plant in a utility yard

Table ES-2. Summary of Parking Alternatives Evaluated in Detail

Parking Alternative	Total Project Size	Site Description
Construct surface lots at Sites 4 and 6	8.7 acres	<ul style="list-style-type: none"> - Sites 4 and 6 are undeveloped tree stands - Site 4 is surrounded by forest, between Sites 1 and 3, BW Parkway is 1,220 feet west, National Vigilance Park is 1,160 feet southwest, and National Cryptologic Museum is 980 feet north - Site 6 is bounded by Dennis Road, Herczog Road, Canine Road, and Emory Road, and barracks are 370 feet northeast
Construct parking garage at Site 3	Three stories, 35 feet tall, footprint of 5.6 acres	<ul style="list-style-type: none"> - Bounded by National Vigilance Park, Canine Road, and forest - BW Parkway is 1,220 feet northwest - National Cryptologic Museum is 890 feet north
Construct parking garage at Site 9	Three stories, 35 feet tall, footprint of 6.1 acres	<ul style="list-style-type: none"> - Bounded by Emory Road, Wenger Road, and forested parcel - Barracks are 1,375 feet north - Currently used as parking lot
Construct parking garage at Site 10	Three stories, 35 feet tall, footprint of 4.8 acres	<ul style="list-style-type: none"> - Bounded by Emory Road and Obrien Road - Several existing structures (15,400 ft²) and parking are on site - Under investigation for potential contamination and presence of unexploded ordnance from a former mortar range - Barracks are 920 feet north

Summary of Environmental Impacts

The level of environmental impact resulting from the Proposed Action would primarily be dependent on the location alternative ultimately selected (refer to **Tables ES-1 and ES-2**). Environmental impacts would generally be more adverse for sites that are currently undeveloped (i.e., Sites 4 and 6) than for sites that are already developed (i.e., Sites 1, 2, 3, 5, 7, 8, 9, and 10). This summary of potential environmental impacts focuses on those impacts that are considered to be more adverse and limits discussions of minor adverse impacts that would be expected from construction activities.

Generally, construction and demolition activities would be expected to result in some level of ground disturbance. Short-term adverse impacts on soil and water resources as a result of sedimentation, erosion, and storm water runoff are unavoidable. Construction and demolition activities also generate solid waste. These kinds of impacts would be expected regardless of the facility or parking alternative.

Sites 4 and 6 are undeveloped sites that have a greater potential for impacts. If either of these sites is selected, then minor adverse impacts on vegetation, wildlife, and storm water would be unavoidable because those natural areas would be lost. It is anticipated that potentially adverse impacts on geological resources and water resources (i.e., sedimentation, erosion, storm water runoff, and stream crossing) could be avoided during site design. If Site 4 is selected and the stream in the southwestern corner cannot be avoided entirely, potential impacts would be minimized to the maximum extent practicable and any required mitigation would be implemented. A formal delineation of wetlands and waters of the United States was conducted on December 2, 2008, on Site 4 and along the unnamed perennial stream between the upstream end of the permanently flooded storm water pond near the northeastern corner of Site 1 and the existing stream crossing and entrance from Canine Road to Site 3. In addition, any wetlands in proximity to the existing staging and equipment storage area adjacent to the northeastern corner of Site 4

were also delineated. All wetlands and other waters of the United States within the assessment area were delineated. A jurisdictional determination of wetlands and waters of the United States was requested from the U.S. Army Corps of Engineers (USACE) Baltimore District and would be obtained prior to implementing the Proposed Action. Any additional required site-specific review and study would be accomplished in accordance with Clean Water Act (CWA) Section 401 and 404 and Maryland Department of the Environment (MDE) Wetlands and Waterways Division permitting requirements. The Section 404 and MDE Wetlands and Waterways Division permitting process would identify whether additional mitigation measures are required. If either Site 4 or Site 6 were selected, then a Forest Stand Delineation and Forest Conservation Plan, including mitigation, in accordance with the Maryland Forest Conservation Act would be required.

Construction of the North Utility Plant would be expected to result in minor to moderate adverse impacts, regardless of the facility alternative selected. It is anticipated that construction of the North Utility Plant at either Sites 1 or 2 could have minor adverse impacts on the nearby MFH neighborhood because of potential visual intrusion of the exhaust stacks as well as operational noise when the generators are in use. Potential visual impacts on the BW Parkway were evaluated because the parkway is listed on the NRHP. On December 2, 2008, a balloon test to supplement and verify the visual impact assessment was conducted at the proposed locations of the North and South Generator Facilities (Sites 4 and 5). At no point were the balloons at either Sites 4 or 5 visible from the BW Parkway. This assessment concluded that the Proposed Action would not impact the viewshed from the BW Parkway, and therefore no effect on the NRHP-listed BW Parkway is expected (see **Section 4.1.2.1** of this EIS). NSA consulted with the NPS under NHPA Section 106 on potential impacts to the BW Parkway (see **Appendix C**). Since no effect is expected on the BW Parkway, no mitigation measures would be necessary.

Construction of the proposed North Utility Plant, the South Generator Facility, and the Central Boiler Plant would introduce stationary sources of noise emissions and air emissions. Long-term adverse impacts would occur during the time that generators in the North Generator Facility and the South Generator Facility would be operating. The total estimated direct and indirect annual air emissions of all criteria pollutants for the entire Proposed Action would be under *de minimis* levels, so a General Conformity Analysis under the CAA would not be required (see Air Quality Supporting Documentation in **Appendix F** of the EIS). The uncontrolled potential to emit criteria pollutants from the proposed stationary sources (i.e., North Generator Facility, South Generator Facility, and Central Boiler Plant) during operations would require emissions controls and limits on operations to avoid the requirement to obtain Nonattainment New Source Review (NNSR) and Prevention of Significant Deterioration (PSD) major source permits. Short- and long-term air emissions would be minor with the incorporation of emissions control and limiting operations (see *Mitigation Measures and Best Management Practices* below and **Section 5** of the EIS).

Best Management Practices and Mitigation Measures

The Proposed Action has the potential to result in adverse environmental impacts. The Proposed Action includes design measures to avoid adverse impacts to the extent practicable. Unavoidable impacts would be minimized or compensated for to the extent practicable. In accordance with Council on Environmental Quality regulations, mitigation measures must be considered for adverse environmental impacts. Once a proposed action is considered significant, then mitigation measures must be developed where it is feasible to do so.

Best Management Practices

General Construction and Post-Construction. During construction and immediately following construction, the following best management practices (BMPs) would be implemented to avoid or minimize short-term minor adverse impacts for all construction activities.

- Construction activities would be restricted between the hours of 10:00 p.m. and 7:00 a.m. to minimize adverse noise impacts.
- Erosion- and sediment-control plans would be required for any project resulting in more than 5,000 ft² of land disturbance and would include sufficient information, drawings, computations, and notes to describe how potential soil erosion and offsite sedimentation associated with a land-disturbing activity would be minimized.
- A storm water management plan would be required for any project resulting in more than 5,000 ft² of land disturbance and would include supporting computations, drawings, and sufficient information describing the manner, location, and type of measures in which storm water runoff would be managed over the entire project. The post-construction storm water release rate would not exceed the rate when undeveloped. Control of storm water runoff could include construction of ponds, infiltration practices, filtration practices, vegetative practices, or runoff pretreatment practices.
- All construction equipment would be maintained according to manufacturer's specifications to ensure it is in proper working order. All fuels and other potentially hazardous materials would be contained and stored appropriately. The procedures identified in the NSA's Spill Prevention Control and Countermeasure Plan would be followed to quickly contain and clean up a spill.
- At least 40 percent of nonhazardous construction and demolition debris would be recycled to divert waste from being landfilled.
- All construction vehicles would be equipped with backing alarms, two-way radios, and slow-moving vehicle signs, when appropriate.
- Construction vehicle traffic would be routed and scheduled to minimize conflicts with other traffic.
- Construction staging areas would be sited to minimize traffic impacts.

North Utility Plant. The following BMPs are specific to the North Utility Plant. Additional measures are also included to reduce site-specific adverse impacts. No additional site-specific BMPs were identified for Site 2. Most of the following BMPs are intended to reduce potential long-term adverse impacts as a result of operations.

- Noise-producing equipment would be contained inside a facility constructed with noise-reducing material. Generator exhausts open to the exterior of the building would be equipped with industrial silencers.
- Best Available Control Technology (BACT)/LAER review for each criteria pollutant and Maximum Achievable Control Technology (MACT) review for regulated hazardous air pollutants (HAPs) and designated categories would be conducted for new permitted stationary sources of emissions. Air dispersion modeling would be conducted if required by MDE. Procedures would be established for measuring and recording emissions and process rates, and meeting the NSPS and National Emissions Standards for Hazardous Air Pollutants (NESHAP) requirements.

Site 1

- The stream that is northwest of Site 1 (outside of site boundaries) would be avoided to the maximum extent practicable.

Site 3

- The stream that is southwest of Site 3 (outside of site boundaries) would be avoided to the maximum extent practicable.

Site 4

- The stream that is southwest of Site 4 would be avoided to the maximum extent practicable. Because a road crossing would be required, total avoidance of the stream might not be possible.
- Wildlife would be allowed to move out of the path of construction equipment during site-clearing activities.

South Generator Facility. The following BMPs are specific to the South Generator Facility. Additional measures are also included to reduce site-specific adverse impacts for Site 6; no site-specific mitigation measures were identified for Sites 5 and 7. Most of the following mitigation measures and BMPs are intended to reduce potential long-term adverse impacts as a result of operations.

- Noise-producing equipment would be contained inside a facility constructed with noise-reducing material. Generator exhausts open to the exterior of the building would be equipped with industrial silencers.
- BACT/LAER review for each criteria pollutant and MACT review for regulated HAPs and designated categories would be conducted for new permitted stationary sources of emissions. Air dispersion modeling would be conducted if required by MDE. Procedures would be established for measuring and recording emissions and process rates, and meeting the NSPS and NESHAP requirements.

Site 6

- Wildlife would be allowed to move out of the path of construction equipment during site-clearing activities.

Central Boiler Plant. The following BMPs are specific to the Central Boiler Plant. No site-specific mitigation measures were identified. This BMP is intended to reduce potential long-term adverse impacts as a result of operations.

- Noise-producing equipment would be contained inside a facility.

Surface Lots for Replacement Parking. The following BMPs are specific to the construction of two surface lots at Sites 4 and 6.

- The stream that is southwest of Site 4 would be avoided to the maximum extent practicable. Because a road crossing would be required, total avoidance of the stream might not be possible.
- Wildlife would be allowed to move out of the path of construction equipment during site-clearing activities.

Parking Garage. The following BMPs are specific to the construction of a parking garage. Site-specific parking and transportation studies would be accomplished to ensure efficient and safe use of space, ingress and egress, and movement patterns. No site-specific mitigation measures were identified for Site 9.

Site 3

- The stream that is southwest of Site 3 (outside of site boundaries) would be avoided to the maximum extent practicable.

Site 10

- Care would be taken during the construction process to restrict activities and equipment to the developed areas within the site to minimize the potential for encountering unexploded ordnance.

Mitigation Measures

North Utility Plant. The following mitigation measures are specific to the North Utility Plant. Additional measures are also included to reduce site-specific adverse impacts. Most of the following mitigation measures are intended to reduce potential long-term adverse impacts as a result of operations.

- Mitigation would be required to reduce NO_x emissions below the NNSR major source threshold. Use of SCR as an emissions control and voluntary federally enforceable limitations on the hours of operation (i.e., 100 hours) of the generators could reduce emissions enough to obtain a Minor NSR permit, but specific emissions controls and operating limitations would be decided during the permitting process.

Site 1

- The existing tree buffer between MFH and the NSA campus could be enhanced to ensure minimal visual intrusion.

Site 2

- The existing tree buffer between MFH and the NSA campus could be enhanced to ensure minimal visual intrusion.

Site 3

- The facility could be sited on the far northeastern end of the parcel to minimize impacts on National Vigilance Park. A tree buffer could be added to provide screening between National Vigilance Park and proposed development.

Site 4

- In accordance with Fort Meade's tree management policy and the Maryland Forest Conservation Act, a minimum of 20 percent of the forested area would be preserved.
- If the stream that is southwest of Site 4 cannot be avoided entirely, potential impacts would be minimized to the maximum extent practicable and any required mitigation would be implemented. A formal delineation of wetlands and waters of the United States was conducted

on December 2, 2008, on Site 4 and along the unnamed perennial stream between the upstream end of the permanently flooded storm water pond near the northwestern corner of Site 1 and the existing stream crossing and entrance from Canine Road to Site 3. In addition, any wetlands in proximity to the existing staging and equipment storage area adjacent to the southwestern corner of Site 4 were also delineated. All wetlands and other waters of the United States within the assessment area were delineated. A jurisdictional determination of wetlands and waters of the United States was requested from the USACE Baltimore District and would be obtained prior to implementing the Proposed Action. Any additional required site-specific review and study would be accomplished in accordance with CWA Section 401 and 404 and MDE Wetlands and Waterways Division permitting requirements. The Section 404 and MDE Wetlands and Waterways Division permitting process would identify whether additional mitigation measures are required.

South Generator Facility. The following mitigation measures are specific to the South Generator Facility. Additional measures are also included to reduce site-specific adverse impacts for Site 6; no site-specific mitigation measures were identified for Sites 5 and 7. Most of the following mitigation measures and BMPs are intended to reduce potential long-term adverse impacts as a result of operations.

- Mitigation would be required to reduce NO_x emissions below the NNSR major source threshold. Use of SCR as an emissions control and voluntary federally enforceable limitations on the hours of operation (i.e., 100 hours) of the generators could reduce emissions enough to obtain a Minor NSR permit, but specific emissions controls and operating limitations would be decided during the permitting process.

Site 6

- In accordance with Fort Meade's tree management policy and the Maryland Forest Conservation Act, a minimum of 20 percent of the forested area would be preserved.

Central Boiler Plant. The following mitigation measure is specific to the Central Boiler Plant. No site-specific mitigation measures were identified. This mitigation measure is intended to reduce potential long-term adverse impacts as a result of operations.

- Mitigation would be required to reduce carbon monoxide emissions below the PSD major source threshold and NO_x emissions below the NNSR major source threshold. Use of limited fuel throughput, low NO_x burners, FGR, and SCR could reduce emissions enough to obtain a Minor NSR permit, but specific emissions controls and operating limitations would be decided during the permitting process. Limiting the hours of operation and installation of oxidation catalysts could ultimately be incorporated into the design and permit process in lieu of or in addition to fuel limitations to meet permitting requirements.

Surface Lots for Replacement Parking. The following mitigation measures are specific to the construction of two surface lots at Sites 4 and 6.

- Low-impact development could include use of landscaped parking lot islands to reduce heat island effect and manage storm water.
- In accordance with Fort Meade's tree management policy and the Maryland Forest Conservation Act, a minimum of 20 percent of forested areas would be preserved.
- If the stream that is southwest of Site 4 cannot be avoided entirely, potential impacts would be minimized to the maximum extent practicable and any required mitigation would be

implemented. A formal delineation of wetlands and waters of the United States was conducted on December 2, 2008, on Site 4 and along the unnamed perennial stream between the upstream end of the permanently flooded storm water pond near the northeastern corner of Site 1 and the existing stream crossing and entrance from Canine Road to Site 3. In addition, any wetlands in proximity to the existing staging and equipment storage area adjacent to the northeastern corner of Site 4 were also delineated. All wetlands and other waters of the United States within the assessment area were delineated. A jurisdictional determination of wetlands and waters of the United States was requested from the USACE Baltimore District and would be obtained prior to implementing the Proposed Action. Any additional required site-specific review and study would be accomplished in accordance with CWA Section 401 and 404 and MDE Wetlands and Waterways Division permitting requirements. The Section 404 and MDE Wetlands and Waterways Division permitting process would identify whether additional mitigation measures are required.

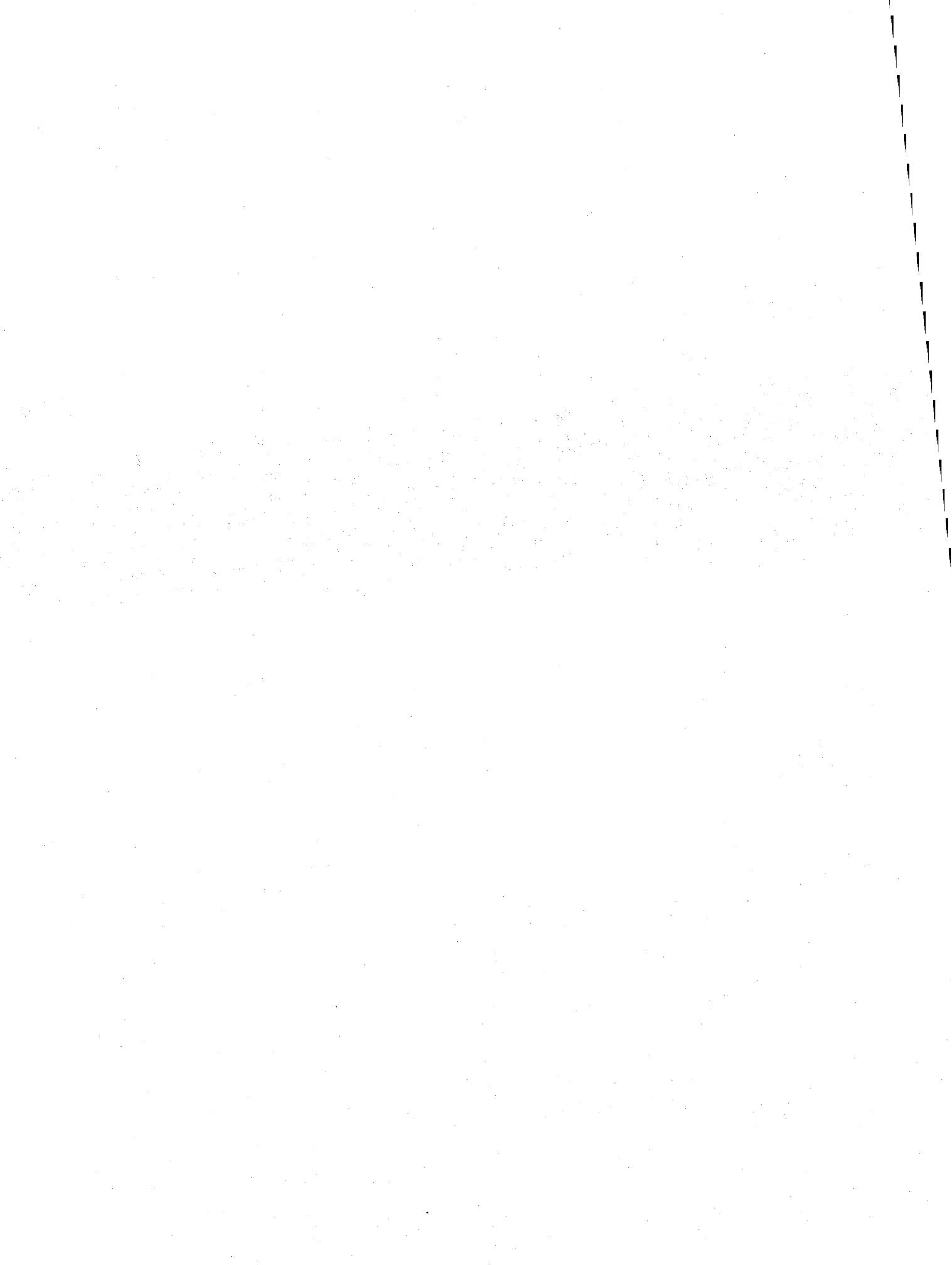
Parking Garage. The following mitigation measures are specific to the construction of a parking garage. Site-specific parking and transportation studies would be accomplished to ensure efficient and safe use of space, ingress and egress, and movement patterns. No site-specific mitigation measures were identified for Sites 9 and 10.

- Low-impact development could include use of landscaped parking lot islands to reduce heat island effect and manage storm water.

Site 3

- The garage could be sited on the far northeastern end of the parcel to minimize impacts on National Vigilance Park. A tree buffer could be added to provide screening between National Vigilance Park and proposed development.
- If the proposed garage can be seen from the BW Parkway, particularly during winter months when deciduous trees have lost their leaves, mitigation to reduce viewshed impacts from the BW Parkway could include painting facilities to blend with the terrain or planting additional native evergreen species of trees to fill any gaps.

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**FINAL
ENVIRONMENTAL IMPACT STATEMENT
FOR THE
PROPOSED UTILITIES UPGRADE PROJECT AT
FORT GEORGE G. MEADE, MARYLAND**

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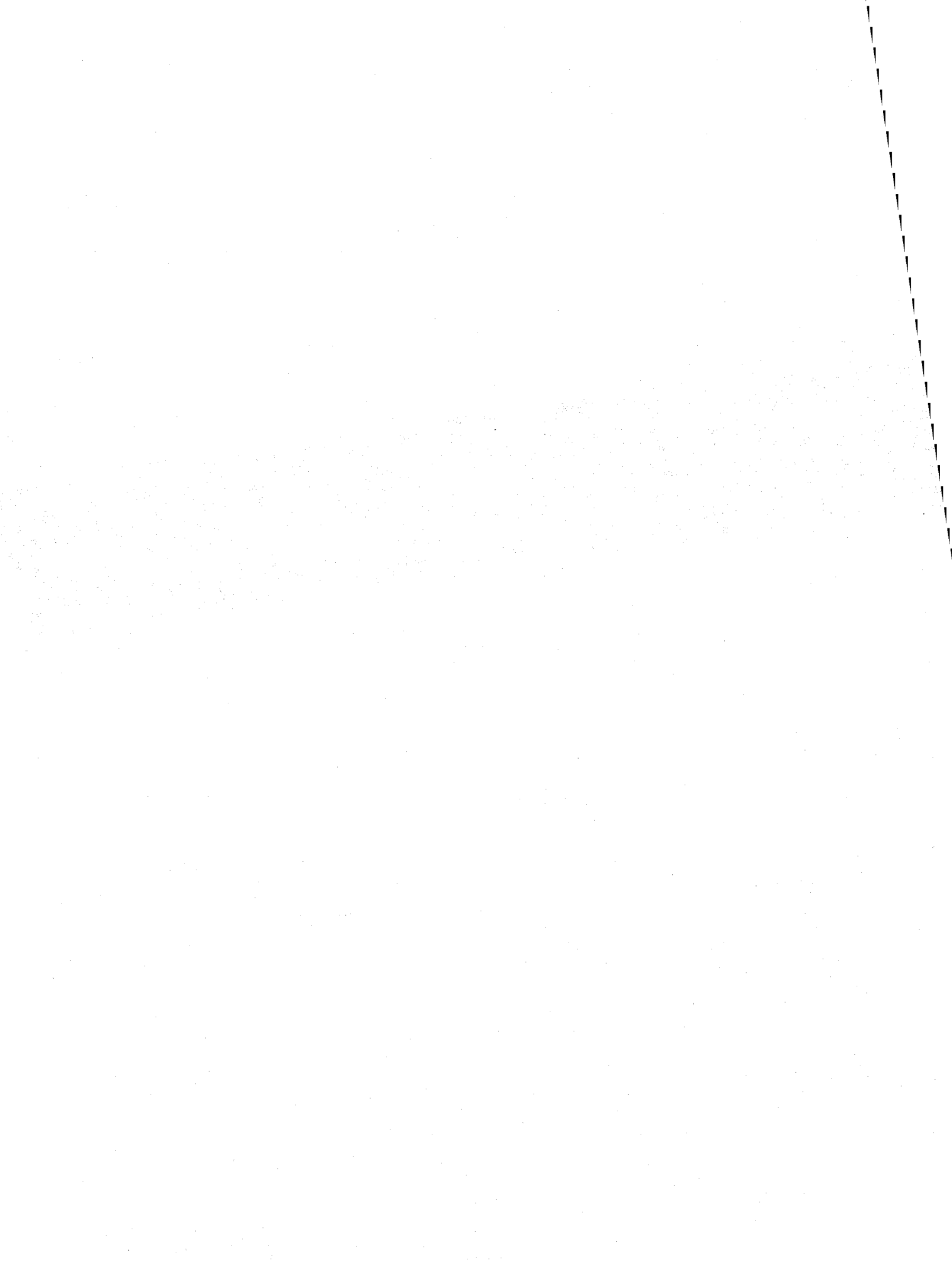
ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit	DMA	Defense Media Agency
µg/L	micrograms per liter	DNL	day-night average A-weighted sound level
ACHP	Advisory Council on Historic Preservation	DOD	Department of Defense
ACM	asbestos-containing material	DRO	Diesel Range Organics
amsl	above mean sea level	EA	Environmental Assessment
APE	Area of Potential Effect	EIS	Environmental Impact Statement
AQCR	air quality control region	EO	Executive Order
AST	aboveground storage tank	ESA	Endangered Species Act
BACT	Best Available Control Technology	EUL	Enhanced Use Lease
BGE	Baltimore Gas and Electric	FEMA	Federal Emergency Management Agency
BMP	Best Management Practice	FGR	flue gas recirculation
BRAC	Base Realignment and Closure	FONSI	Finding of No Significant Impact
BTEX	benzene, toluene, ethylbenzene, and xylene	FPPA	Farmland Protection Policy Act
BW Parkway	Baltimore-Washington Parkway	FR	Federal Register
CAA	Clean Air Act	ft ²	square feet
CDP	census-designated place	FY	Fiscal Year
CEQ	Council on Environmental Quality	GIS	geographic information system
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	GRO	Gasoline Range Organics
CFR	Code of Federal Regulations	HAP	hazardous air pollutant
CMC	classified material conversion	HVAC	heating, ventilation, and air conditioning
CO	carbon monoxide	ITR	injection timing retard
COMAR	Code of Maryland Regulations	kV	kilovolt
CPCN	Certificate of Public Convenience and Necessity	kW	kilowatt
CRMP	Cultural Resources Management Plan	LAER	Lowest Achievable Emissions Rate
CWA	Clean Water Act	LBP	lead-based paint
CZMP	Coastal Zone Management Program	Leq	equivalent sound level
dB	decibels	LOS	level of service
dBA	A-weighted decibels	MACT	Maximum Achievable Control Technology
DISA	Defense Information System Agency	MDE	Maryland Department of the Environment
		MFH	military family housing
		mg/kg	milligrams per kilogram
		mg/L	milligrams per liter

mgd	million gallons per day	PM _{2.5}	particulate matter less than or equal to 2.5 microns
MHT	Maryland Historical Trust	POW	Prisoner-of-War
MMBtu/hr	million British thermal units per hour	ppm	parts per million
MSAT	Mobile Source Air Toxic	PSD	Prevention of Significant Deterioration
MVA	megavolt-ampere	PTE	potential to emit
MW	megawatt	RCRA	Resource Conservation and Recovery Act
NAAQS	National Ambient Air Quality Standards	ROD	Record of Decision
NARA	National Archives and Records Administration	ROI	Region of Influence
NEPA	National Environmental Policy Act	SARA	Superfund Amendments and Reauthorization Act
NESHAP	National Emission Standards for Hazardous Air Pollutants	SCR	selective catalytic reduction
NHPA	National Historic Preservation Act	SIP	State Implementation Plan
NNSR	Nonattainment New Source Review	SNCR	selective noncatalytic reduction
NOA	Notice of Availability	SO ₂	sulfur dioxide
NOI	Notice of Intent	SO _x	oxides of sulfur
NO _x	oxides of nitrogen	SPCC	Spill Prevention, Control, and Countermeasure
NPDES	National Pollutant Discharge Elimination System	SVOC	semivolatile organic compound
NPL	National Priorities List	SWPPP	Storm Water Pollution Prevention Plan
NPS	National Park Service	TCP	Traditional Cultural Property
NRCS	Natural Resources Conservation Service	TMDL	Total Maximum Daily Load
NRHP	National Register of Historic Places	tpy	tons per year
NSA	National Security Agency	TSCA	Toxic Substances Control Act
NSPS	New Source Performance Standards	U.S.C.	United States Code
NSR	New Source Review	USACE	U.S. Army Corps of Engineers
O ₃	ozone	USEPA	U.S. Environmental Protection Agency
OTR	ozone transport region	USFWS	U.S. Fish and Wildlife Service
P.L.	Public Law	UST	underground storage tank
PCB	polychlorinated biphenyl	UXO	unexploded ordnance
PM	particulate matter	VOC	volatile organic compound
PM ₁₀	particulate matter less than or equal to 10 microns		

SECTION 1

PURPOSE OF AND NEED FOR ACTION



1. Purpose of and Need for Action

1.1 Introduction

This Final Environmental Impact Statement (EIS) addresses the proposal by the Department of Defense (DOD) to upgrade utilities at the National Security Agency (NSA) campus on Fort George G. Meade (Fort Meade), Maryland. This EIS was prepared to comply with the requirements of the National Environmental Policy Act of 1969 (NEPA), as amended (42 United States Code [U.S.C.] Section 4321–4347); the Council on Environmental Quality’s (CEQ) *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 Code of Federal Regulations [CFR] Parts 1500–1508); and DOD’s *Environmental Effects in the United States of DoD Actions* (32 CFR Part 188).

The EIS is organized into seven sections and appendices. **Section 1** states the purpose, need, scope, and public involvement efforts for the Proposed Action. **Section 2** contains a detailed description of the Proposed Action, the alternatives considered, and provides an introduction to projects considered for potential cumulative impacts. **Section 3** describes the existing conditions of the potentially affected environment. **Section 4** identifies the environmental impacts of implementing all reasonable alternatives, including direct, indirect, and cumulative impacts. **Section 5** describes the best management practices (BMPs) and mitigation measures developed to minimize potential impacts. **Section 6** provides the names of those persons who prepared the EIS. **Section 7** lists the references used to support the analysis.

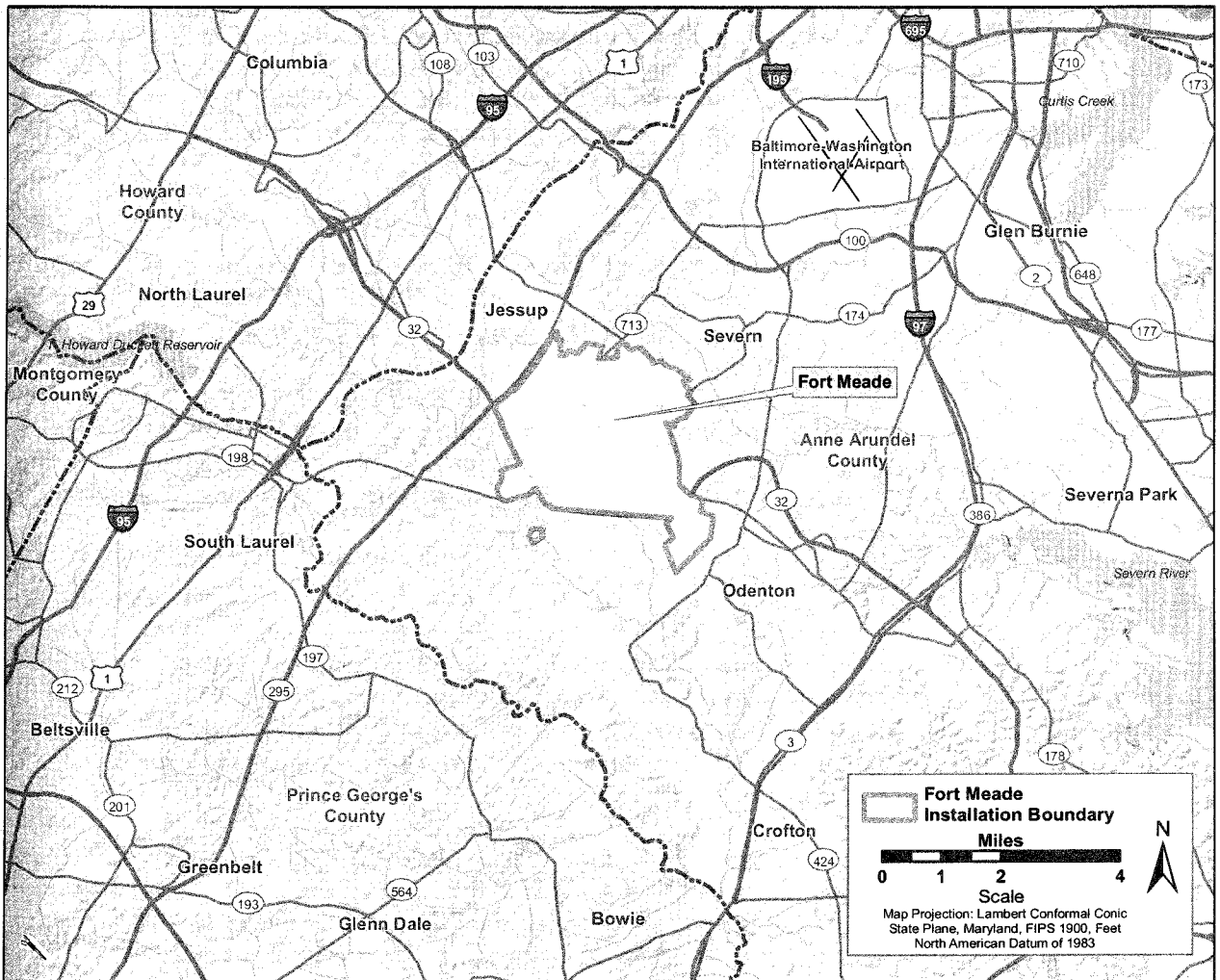
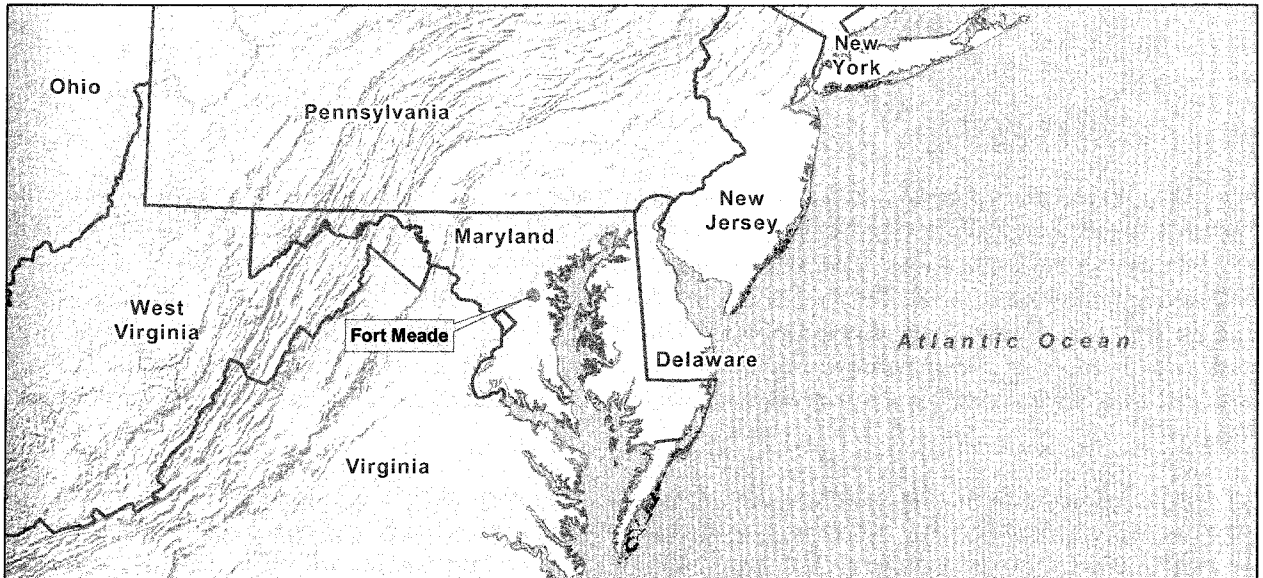
1.2 Purpose and Need Statement

The DOD mission requires a robust and reliable utilities infrastructure. Although the utilities infrastructure at Fort Meade has been incrementally upgraded over the years, improvements are needed to support ongoing and future mission requirements. DOD proposes to embark upon a project to upgrade and modernize the utilities infrastructure at the NSA campus on Fort Meade. **Figure 1.2-1** shows the location of Fort Meade, Maryland. The purpose of the project is to renew aging utilities infrastructure through renovation, modernization, and replacement. Utilities upgrades are needed to support the existing campus and the mission going forward. Specifically, DOD proposes to construct and operate a North Utility Plant, to upgrade the existing South Generator Facility, and to replace the existing Central Boiler Plant.

1.3 Scope of the EIS

Scope consists of the range of actions, alternatives, and impacts to be considered. Upgrading utilities infrastructure consists of several separate actions (i.e., constructing a North Utility Plant, upgrading a South Generator Facility, and replacing the Central Boiler Plant). These individual actions are considered together in this EIS as one proposal because they are similar in timing and location and would fulfill a common need to renew aging infrastructure.

DOD prepared an Environmental Assessment (EA) and a subsequent Finding of No Significant Impact (FONSI) analyzing the replacement of an electrical substation that services the southern portion of the NSA campus on Fort Meade (DOD 2007). Relevant components of this EA, hereafter referred to as the South Electrical Substation EA, will be analyzed as appropriate for potential cumulative impacts; however, this EIS does not reassess those actions previously analyzed and found not to be significant. The South Electrical Substation EA is incorporated by reference into this document.



Source: ESRI StreetMap USA 2005

Figure 1.2-1. Location of Fort Meade, Maryland

The scope of the Proposed Action and the range of alternatives to be considered are presented in detail in **Section 2**. In accordance with CEQ regulations, the No Action Alternative is analyzed in order to provide the baseline against which the environmental impacts of implementing the range of alternatives addressed can be compared. This EIS identifies appropriate mitigation measures that are not already included in the Proposed Action or alternatives in order to avoid, minimize, reduce, or compensate for adverse environmental impacts.

The original scope of the EIS considered an additional utilities upgrade project: construction of a Central Chiller Plant to provide chilled water throughout the campus to cool equipment and facilities. The Central Chiller Plant would have included a chiller facility, chilled water distribution lines, a dedicated electrical substation, dedicated emergency electrical power supply, and power transmission lines. However, DOD determined this project should be removed from the scope of this EIS because the requirement for the Central Chiller Plant includes future campus expansion. At this time, future campus expansion is not ripe for decisionmaking. If DOD pursues construction of a Central Chiller Plant in the future, the appropriate NEPA analysis will be conducted at that time.

1.3.1 Environmental Laws, Regulations, and Executive Orders

To comply with NEPA, the planning and decisionmaking process involves a study of 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 the form of an EA or EIS, which enables decisionmakers to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated “with other planning and environmental review procedures required by law or by agency practice so that all such procedures run concurrently rather than consecutively” (40 CFR 1500.2).

This EIS examines the environmental impacts of the Proposed Action and reasonable alternatives on the following resource areas: land use, noise, air quality, geological resources, water resources, biological resources, cultural resources, infrastructure, transportation, hazardous materials and wastes, and socioeconomics and environmental justice. **Appendix A** of this EIS contains summaries of the environmental laws, regulations, and EOs that might apply to this project. Where relevant, these laws are described in more detail in the appropriate resource areas presented in **Section 3**. The scope of the analysis of potential environmental consequences given in **Section 4** considers direct, indirect, and cumulative impacts.

As required in 40 CFR 1502.25, the Final EIS contains a list of all Federal permits, licenses, and coordination that might be obtained in implementing the Proposed Action or alternatives (see **Table 1.3-1**).

1.3.2 Other Relevant Laws, Regulations, and Executive Orders

The policies and goals of NEPA are supplementary to an agency’s existing authorizations (42 U.S.C. Section 4335). The DOD will adhere to mission requirements as identified in the National Security Act of 1947 (50 U.S.C. Section 401) and EO 12333, *United States Intelligence Activities*, as amended by EO 13355, *Strengthened Management of the Intelligence Community*. There could be aspects and details of the Proposed Action that are classified. However, this EIS 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 while also ensuring that sensitive information is safeguarded.

Table 1.3-1. List of Federal Permits, Licenses, and Other Entitlements for the Proposed Action

Agency	Permit/Approval/Coordination
U.S. Fish and Wildlife Service (USFWS)	<ul style="list-style-type: none"> – Endangered Species Act (ESA) Section 7 coordination – Migratory Bird Treaty Act coordination
U.S. Army Corps of Engineers (USACE)	<ul style="list-style-type: none"> – Clean Water Act (CWA) Section 404 permit
Maryland Department of the Environment (MDE), Water Management Administration	<ul style="list-style-type: none"> – CWA Section 401 State Water Quality Certification – CWA NPDES permit
MDE, Air and Radiation Management Administration	<ul style="list-style-type: none"> – Clean Air Act (CAA) Minor New Source Review (NSR) construction permit – CAA Title V Minor permit modification – CAA Title V Significant permit modifications
Maryland Department of Natural Resources Forest Service	<ul style="list-style-type: none"> – Forest Stand Delineation and Forest Conservation Plan approval
National Park Service (NPS)	<ul style="list-style-type: none"> – Consultation regarding potential viewshed impacts
Federally recognized Native American Tribes	<ul style="list-style-type: none"> – Consultation regarding potential impacts on cultural resources
Maryland Historical Trust (MHT)	<ul style="list-style-type: none"> – National Historic Preservation Act (NHPA) Section 106 consultation
Maryland Public Service Commission	<ul style="list-style-type: none"> – Waivers from Certificate of Public Convenience and Necessity (CPCN)

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 utilities upgrades are encouraged to participate in the public involvement process.

1.4.1 Scoping Process

The purpose of conducting scoping is to provide members of the public and applicable regulatory agencies with the opportunity to submit formal comments regarding the development of the Proposed Action and possible alternatives and on issues relevant to the EIS. Scoping helps ensure that relevant issues are identified early in the NEPA process and are properly studied, that minor issues do not needlessly consume time and effort, and the Proposed Action and alternatives are thoroughly developed.

DOD initiated the public scoping process on January 2, 2008, with the publication of the Notice of Intent (NOI) to prepare an EIS (73 *Federal Register* [FR] 172). Advertisements were published in the *Baltimore Sun* and the *Washington Post* on February 6 and 7, 2008, respectively, notifying the public of the intent to prepare an EIS, announcing the public meeting date, and requesting comments on the project. A letter was also distributed on February 12, 2008, to approximately 65 potentially interested Federal, state, and local agencies; Native American tribes; and other stakeholder groups or individuals. Subsequently, a scoping meeting was held on February 20, 2008, in Laurel, Maryland, at the Ramada Inn Laurel to provide a forum for the public and agencies to obtain information and to provide scoping

comments. Scoping comments were officially accepted through March 3, 2008. All scoping outreach tools, including the NOI, the text of the display advertisements, the interested party letter, interested party mailing list, and scoping comments received are included in **Appendix B**. All scoping comments were considered during the preparation of the Draft EIS. Substantive concerns identified during scoping included the potential impacts of the proposed utilities project on the Baltimore-Washington Parkway (BW Parkway)—which is listed on the National Register of Historic Places (NRHP)—specifically, the proximity to National Park Service (NPS) land, the removal of visual and scenic forest buffers, the addition of tall or visible buildings, and the importance of properly designed storm water management systems (Syphax 2008).

1.4.2 Review of the Draft EIS

DOD provided a 45-day public review period for the Draft EIS (40 CFR 1506.10). The public review period was initiated through publication of a Notice of Availability (NOA) in the *Federal Register* (73 FR 202, pp. 61859) on October 17, 2008. Methods similar to those used during the scoping period were used to notify the public and agencies of the public review period for the Draft EIS, including a mailing to 35 potentially interested parties.

The Draft EIS was distributed to 14 agencies, organizations and individuals that had expressed interest during the scoping process in reviewing the Draft EIS. In addition, 5 individuals requested copies during the public review period (40 CFR 1502.19). A Public Meeting was held in Laurel, Maryland, at the Ramada Inn Laurel on November 6, 2008 to provide a forum for the public and agencies to obtain information and to provide scoping. The meeting was advertised in the *Baltimore Sun* and the *Washington Post*. The Public Meeting was attended by 10 individuals. No oral or written comments were provided during the Public Meeting. Comments on the Draft EIS were accepted through December 1, 2008. In total, 3 comments were received during the public review period. All comments on the Draft EIS were considered during the preparation of the Final EIS. **Appendix C** of the EIS includes all materials, including the NOA and other outreach tools used, and all comments on the Draft EIS that are received during the public review period.

1.4.3 Availability of the Final EIS

An NOA for the Final EIS will be published in the *Federal Register* announcing that the Final EIS is available for review. At a minimum, the Final EIS will be circulated to Federal and state agencies having jurisdiction by law or special subject matter expertise; any person, organization, or agency that has requested a copy of the Final EIS; and any person, organization, or agency that has made a substantive comment on the Draft EIS (40 CFR 1502.19). During the 30-day waiting period associated with the Final EIS, DOD will take no action nor make any decisions regarding whether or not to implement the Proposed Action. Comments that are received during the waiting period associated with the Final EIS will be considered in the decisionmaking process and documented as such input in the Record of Decision (ROD).

2. Description of the Proposed Action and Alternatives

2.1 Proposed Action

DOD proposes to upgrade and modernize utilities infrastructure on the NSA campus at Fort Meade, Maryland. The Proposed Action would include construction and operation of (1) a North Utility Plant, (2) a South Generator Facility, and (3) a Central Boiler Plant (which is actually a replacement of an existing boiler plant). Detailed descriptions of the requirements associated with construction and operation of each of these infrastructure components are described in detail in Sections 2.1.1, 2.1.2, and 2.1.3, respectively.

2.1.1 North Utility Plant

DOD proposes to construct a North Utility Plant to provide electrical power with redundancy. The North Utility Plant would consist of the following components:

- **Transmission Lines.** Baltimore Gas and Electric (BGE) would supply the primary power for the North Utility Plant. In order to ensure that power sources are redundant to existing users, new high-voltage transmission lines would be installed to provide primary power from off site to the proposed electrical substation. This EIS considers the potential impacts of installing transmission lines within the NSA campus only. It is assumed that that the transmission lines would begin along Maryland Route 32 (or MD-32) and run to the North Electrical Substation.
- **North Electrical Substation.** The new transmission lines would connect to the proposed 50-megavolt-ampere (MVA) substation, where transformers would step down the high-voltage electricity to medium-voltage (i.e., 15 kilovolts [kV]) for use on site. The proposed North Electrical Substation, including switchgear housing, would require a footprint of approximately 45,000 square feet (ft²) (URS 2008).
- **Distribution Lines.** Distribution lines would connect from the proposed substation to an existing electric power distribution system. All ground disturbances associated with the distribution lines would be in areas that are previously disturbed and that do not contain sensitive resources.
- **North Generator Facility.** The North Generator Facility would connect to the proposed North Electrical Substation identified above and provide a source of redundant emergency power. DOD proposes to use multiple generator sets sized at 2.2 to 2.7 megawatts (MW) (i.e., 23 to 29 generator sets) to form a 60- to 65-MW North Generator Facility. The diesel engine/generator sets would have battery-powered starter motors and operate using ultra-low sulfur diesel fuel. DOD proposes to use generator sets that have selective catalytic reduction (SCR) as a pollution-control system. Each diesel engine would have its own exhaust stack that would be no taller than 35 feet above ground level. The North Generator Facility would include 26 to 31 20,000-gallon aboveground storage tanks (ASTs) for diesel fuel (depending on the number of generators), two 6,000-gallon storage tanks for urea used in the SCR systems, and one 500-gallon AST for waste oil. Each storage tank would have spill containment consistent with the volume of fluid contained and in accordance with all current regulatory requirements. Small containers for chemicals used in water chemistry for cooling water systems, which would use internal circulation, would also be included. The proposed generator plant, including the surrounding support area, would require a footprint of approximately 60,000 ft² (URS 2008).

For the purposes of analysis, the EIS assumes the upper boundary of impacts. For example, this EIS assumes that there would be 29 generator sets to provide the maximum footprint, and that the power generation would be 65 MW to provide the maximum emissions.

For the proposed North Utility Plant, DOD has identified an undeveloped wooded area (Site 4) as the preferred location for this facility (see discussion of Site 4 in **Section 2.2.4**). Three other location alternatives are also considered (see discussion of Sites 1, 2, and 3 in **Section 2.2.4**). The EIS does not disclose the locations of existing or proposed transmission or distribution lines for security purposes; an alternatives analysis for proposed transmissions lines and utility corridors is presented in **Section 2.2.5**. Power generating alternatives and emissions control alternatives are discussed in **Sections 2.2.2** and **2.2.3**, respectively.

2.1.2 South Generator Facility

DOD currently operates a South Utility Plant, which includes a South Electrical Substation, switchgear, and emergency generators. Replacement of the South Electrical Substation was recently analyzed in a separate EA (DOD 2007).

DOD proposes to construct a South Generator Facility that is capable of generating 47 to 52 MW of emergency electrical power to supplement the South Utility Plant. As part of this project, seven existing diesel-powered generator sets, with a combined capacity of 17.6 MW, and the associated building and ancillary equipment would be removed. DOD proposes to use multiple generator sets sized at 2.2 to 2.7 MW (i.e., 18 to 22 generator sets) to form a 47- to 52-MW generator facility. The diesel engine/generator sets would have battery-powered starter motors and operate using ultra-low sulfur diesel fuel. DOD proposes to use generator sets that have SCR as a pollution-control system. Each diesel engine would have its own exhaust stack that would be no taller than 35 feet above ground level. The South Generator Facility would include 16 to 20 20,000-gallon ASTs for diesel fuel (depending on the number of generators), two 6,000-gallon storage tanks for urea used in the SCR systems, and one 500-gallon AST for waste oil. Each storage tank would have spill containment consistent with the volume of fluid contained and in accordance with all current regulatory requirements. Small containers for chemicals used in water chemistry for cooling water systems, which would use internal circulation, would also be included. The generator facility would connect to the South Electrical Substation and provide a source of redundant emergency power. The proposed South Generator Facility, including fuel storage, would require a footprint of approximately 60,000 ft² (URS 2008).

For the purposes of analysis, the EIS assumes the upper boundary of impacts. For example, this EIS assumes that there would be 22 generator sets to provide the maximum footprint, and that the power generation would be 52 MW to provide the maximum emissions.

For the proposed South Generator Facility, DOD identified the existing site (Site 5) as the preferred site (see discussion of Site 5 in **Section 2.2.4**). Two other location alternatives were identified and are analyzed in this EIS (see **Section 2.2.4**). Power-generating alternatives and emissions-control alternatives are discussed in **Sections 2.2.2** and **2.2.3**, respectively.

2.1.3 Central Boiler Plant

DOD currently operates a central boiler plant that consists of four high-pressure steam boilers, pumps, and piping, and two ASTs that store backup fuel for the boilers. The underground steam distribution and condensate return system does not require replacement. The proposed Central Boiler Plant would include the following components:

- **Boilers.** DOD proposes to remove four vintage boilers and replace them with four modern, energy-efficient dual-fuel boilers. The proposed boilers would primarily burn natural gas but would be capable of burning No. 2 fuel oil as a backup. Each boiler would be rated at 98 million British thermal units per hour (MMBtu/hr), but only two boilers would normally operate at any given time. Each boiler would have its own exhaust stack that would be approximately 100 feet above ground level¹. DOD proposes to construct a new Central Boiler Plant in the general vicinity of the existing boiler facility. Existing piping would be used to the extent possible to interconnect with the existing steam and condensate distribution and return systems. The new Central Boiler Plant would have a footprint similar to the existing facility, approximately 12,000 ft².
- **Aboveground Storage Tanks.** DOD proposes to remove two 200,000-gallon ASTs that supply fuel oil to the Central Boiler Plant and the associated spill containment surrounding the ASTs, and to replace them with modern ASTs and spill containment. Each of the proposed ASTs would be steel tanks for storing fuel oil. Secondary containment would meet or exceed U.S. Environmental Protection Agency (USEPA), Maryland Department of the Environment (MDE), and National Fire Protection Association standards. It is anticipated that the replacement of the ASTs and containment dikes would disturb approximately 6,000 ft².

For the new Central Boiler Plant, DOD has identified the existing site of the boiler plant and ASTs as the preferred alternative (Site 8) and one alternative location (see **Section 2.2.4**). Emissions control alternatives are discussed in **Section 2.2.3**.

2.1.4 Summary of Proposed Action Requirements

Table 2.1-1 summarizes the minimum electrical, heating, cooling, and facility space requirements of the Proposed Action, as described in **Sections 2.1.1** through **2.1.3**.

The Proposed Action would not result in a direct increase in NSA or government employees because it is anticipated that all proposed facilities would be maintained under existing maintenance contracts. The Proposed Action would be expected to result in indirect increases in contracted workers. For the purposes of this analysis, it is assumed that indirect personnel increases would be less than 1 percent, which is considered minimal.

2.2 Alternatives Analysis

An alternatives analysis assists in avoiding unnecessary impacts by considering reasonable options to achieve the project purpose and need, as stated in **Section 1.2**. An agency must consider alternatives to a proposed action, the scope of which must include the No Action Alternative, other courses of actions, and mitigation measures (40 CFR 1508.25). Accordingly, **Section 2.2.1** presents the No Action Alternative. Other alternatives under consideration include power systems for emergency electrical generation facilities (see **Section 2.2.2**), emissions control on pollutant-emitting equipment (i.e., generators and boilers) (see **Section 2.2.3**), locations where there is land available for construction or redevelopment to construct facilities (see **Section 2.2.4**), corridors for installation of utility lines (see **Section 2.2.5**), and types and locations of replacement parking (see **Section 2.2.6**).

¹ The stack height for the proposed Central Boiler Plant is an estimate only. The actual height could vary if MDE determines that site-specific air modeling is required in conjunction with permitting.

Table 2.1-1. Summary of the Minimum Requirements Associated with the Proposed Action

Infrastructure Component	Total Load or Capacity Needed	Building Footprint
North Utility Plant *		
North Electrical Substation	50 MVA	45,000 ft ²
North Generator Facility	60 to 65 MW	60,000 ft ²
<i>Subtotal</i>		105,000 ft²; 2.4 acres
South Generator Facility	47 to 52 MW	60,000 ft²; 1.4 acres
Central Boiler Plant		
Boilers	392 MMBtu/hr	12,000 ft ²
ASTs	400,000 gallons	6,000 ft ²
<i>Subtotal</i>		18,000 ft²; 0.4 acres
Total Proposed Action Building Requirements		183,000 ft²; 4.2 acres

Note: * Ground disturbance associated with utility corridors, including both transmission and distribution lines, is accounted for in the utility corridors alternatives in Section 2.2.5.

2.2.1 No Action Alternative

CEQ regulations specify the inclusion of the No Action Alternative in the alternatives analysis (40 CFR 1502.14). Since DOD has already identified a need for action by specifying infrastructure components that are required to sustain the mission on Fort Meade's NSA campus, it is understood that 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 and alternative actions can be compared.

Under the No Action Alternative, DOD would not construct a North Utility Plant, upgrade the aging South Generator Facility, or replace the aging Central Boiler Plant.

The No Action Alternative would have no effect on primary electrical supply but would also fail to provide the means to ensure multiple redundant power supplies.

The Central Boiler Plant would continue to be used in its current condition and maintained, as needed. The boilers are old and inefficient; furthermore, aging units would become more expensive and difficult to maintain as replacement parts become harder to find. The ASTs servicing the Central Boiler Plant are a potential source of environmental contamination because of their condition and age; the associated containment dikes are compromised, despite ongoing maintenance, by intruding vegetation and groundhog holes. A leak from an AST or a spill during AST refueling could result in soil or water contamination and subsequent expensive and possibly difficult remediation.

2.2.2 Emergency Power System Alternatives

DOD proposes to construct emergency generator facilities to ensure a redundant power supply. The Proposed Action would involve two utility projects that would provide emergency power: the proposed North Generator Facility (60 to 65 MW) for the North Utility Plant (see Section 2.1.1) and the proposed South Generator Facility (47 to 52 MW) (see Section 2.1.2). This section describes the process used to

objectively identify emergency power alternatives to be carried forward, and the alternatives to be eliminated from further detailed environmental analysis in this document. A comparative summary of the alternatives, and how they do or do not meet specific selection criteria, is also included.

As demonstrated in **Section 1.2**, the purpose of and need for the Proposed Action have been carefully examined and documented. The following analysis was prepared to determine which power generation alternatives have the best potential to satisfy emergency power requirements. Alternatives that did not fully satisfy the purpose and need were not carried forward for further detailed analysis in this EIS. Alternatives to supply emergency power that were considered potentially viable included internal combustion generator sets, microturbines, and fuel cells.

2.2.2.1 Evaluation Criteria

In an effort to satisfy the purpose of and need for the Proposed Action, DOD developed evaluation criteria to compare alternative ways of providing emergency power. The DOD invited stakeholder input on the scope of analysis for this EIS (see **Section 1.4.1**), and through scoping and meetings with planners, DOD identified the following seven evaluation criteria in determining reasonable alternatives for emergency power generation:

1. Proven and commercially available technology
2. Reliable equipment
3. Rapid start-up
4. Sufficient energy output
5. Meets Federal and state environmental regulations
6. Energy-efficient
7. Cost-effective.

For an emergency power system to be considered reasonable, at a minimum it must meet the first five criteria. Furthermore, any alternative that DOD selects would need to comply with Federal policy for energy efficiency and cost effectiveness in accordance with EO 13221, *Energy Efficient Standby Power Devices*, and EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*. **Table 2.2-1** compares internal combustion generator sets, microturbines, and fuel cells to the evaluation criteria outlined above. The specific reasons as to whether or not the various evaluation criteria were met or not are elaborated upon within the discussion associated with each respective alternative given in **Section 2.2.2.2**.

Table 2.2-1. Comparison of Emergency Power Alternatives to Critical Evaluation Criteria

Emergency Power System	Evaluation Criteria					Meets evaluation criteria
	Proven and commercially available technology	Reliable equipment	Rapid start-up	Sufficient energy output	Meets environmental regulations	
Generator Sets	Yes	Yes	Yes	Yes	Yes	Yes
Microturbines	Yes	No	No	Yes	Yes	No
Fuel Cells	No	No	No	Yes	Yes	No

2.2.2.2 Alternatives Evaluated in Detail in this EIS

Generator Sets. Generators used to generate electricity are driven by internal combustion engines that run on diesel fuel. They range in size from a few hundred to several thousand kilowatts (kW). Generators are commonly used for electricity and emergency power generation in central utility facilities and industrial applications. This alternative considers the use of 2.2- to 2.7-MW Tier 2 generators to provide emergency power for the proposed North Generator Facility and the South Generator Facility. Manufacturers' specifications for several generator types were reviewed. The 2.2- to 2.7-MW generator sets were selected for analysis because they are among the largest commercially available off-the-shelf units in terms of energy output that meet the Tier 2 air emissions standards. Tier 2 emissions controls are very effective for off-the-shelf generators of this size and type, and are ideal for the addition of other post-combustion control technologies. One 2.2- to 2.7-MW generator unit has a minimum space requirement of approximately 22 feet long, 8.5 feet wide, and 10 feet high (Caterpillar 2008). Depending on the size of the individual units selected, between 23 and 29 generators would be needed to generate 65 MW of electrical energy output for the North Generator Facility, and between 18 and 22 generators would be needed to generate 52 MW of energy output for the South Generator Facility.

Although not required for emergency applications, it is possible that new Tier 4 generators could be available for nonemergency applications in the next few years. Generators ultimately selected might differ in specific features from the ones described in this EIS, but the emissions profiles would be consistent with or lower than the Tier 2 engines described herein. All generators meeting Tier 2 air emissions standards in the range of 2.2 to 2.7 MW would have comparable emissions profiles. Therefore, the 2.5-MW Tier 2 generators have been carried forward to facilitate a detailed analysis under NEPA.

Generator sets are the industry standard for emergency power generation and are a proven commercially available technology with rapid start-up capabilities. Banks of off-the-shelf generator sets can be configured to provide the emergency power requirements outlined and have the capacity for application of emission-control technologies to meet the strict state and Federal air quality regulations within the Baltimore Metropolitan region. The use of generator sets is the only emergency power alternative that fully meets the critical evaluation criteria, and consequently, this alternative is carried forward for further detailed analysis.

2.2.2.3 Alternatives Considered but Eliminated from Further Detailed Evaluation

Microturbines. Microturbines are small combustion turbines that produce between 25 kW and 1,000 kW of power. Microturbines were derived from turbocharger technologies found in large trucks or the turbines in aircraft auxiliary power units. Turbines of many sizes are commonly used for electricity generation in central utility generating stations and industrial applications. There are a number of manufacturers of turbine generator sets in a size appropriate to the Proposed Action. For the purposes of this analysis, this alternative considers the use of 1-MW microturbines for emergency power. Manufacturers' specifications for several microturbines types were reviewed. The 1-MW microturbines were selected for analysis because they are among the largest commercially available units in terms of energy output. One 1-MW microturbine unit has a minimum space requirement of approximately 28 feet long, 8 feet wide, and 10 feet high (Capstone 2008). All microturbines would be driven by internal combustion engines, though not all units would necessarily be made by the same manufacturer. Sixty-five 1-MW units would be needed to generate 65 MW of energy output. Other microturbines reviewed were smaller in size and power output, and had a higher cost per MW than other options evaluated. They would require larger overall building footprints and cost and were not realistic for the facilities being proposed.

Microturbines have limited air emissions, have a long record of commercial service in emergency and standby power applications, and are highly reliable. They come in a variety of sizes and can be operated together to meet the proposed project power requirements. However, they require more extensive start sequences and do not increase load quickly because of the need to equalize internal temperatures before applying additional load. Microturbines are not considered to be a viable alternative because of the time it takes for them to generate useful power. Additionally, microturbines have a substantially high capital cost and are more financially viable for uses requiring full-time operation (Capstone 2008, USEPA 2002a). Therefore, microturbines were eliminated from further detailed evaluation as an emergency power alternative.

Fuel Cells. A fuel cell is an electrochemical device that uses a constant supply of fuel to convert chemical energy to electrical energy. The fuels, hydrogen and oxygen, are fed to the fuel cell and a chemical reaction occurs that produces electricity along with heat and water. Although they produce virtually no emissions, they are not widely used or technically feasible for emergency power generation (DOE 2008, CERL 2008). For the purposes of this analysis, this alternative considers the use of 2.4-MW fuel cells for emergency power. Manufacturer's specifications for several fuel cell types were reviewed. The 2.4-MW fuel cells were selected for analysis because they are among the largest commercially available units in terms of energy output. One of these 2.4-MW fuel cells is considered relatively large, measuring approximately 60 feet long, 55 feet wide, and 30 feet high (FCE 2007). Fuel cells for different facilities would not necessarily be made by the same manufacturer, and would vary depending on the size and type ultimately selected. Twenty-seven 2.4-MW units would be needed to generate approximately 65 MW of energy output. Other fuel cells reviewed were smaller in size and power output, and had a higher cost per MW than those carried forward. They would require larger overall building footprints and cost and were not realistic for the facilities being proposed.

Fuel cells have virtually no air emissions, and they might be configured to meet the overall power requirements of the Proposed Action. However, this emergency power alternative is not a proven technology and does not have rapid startup capabilities. Fuel cell technology is in an early stage of development and even the few commercially available models have limited operating experience. In addition, fuel cells require approximately 20 seconds to bring online, which does not meet the design needs for emergency power generation (DOE 2008, FCE 2007). Even more so than with microturbines, fuel cells have substantially higher capital and operating cost when compared to generators. DOD, through the U.S. Army Corp of Engineers (USACE), has evaluated sites and installed 30 fuel cells for stationary applications. The primary use of the fuel cells has been heating applications and small-scale full-time electricity generation. At this time, the DOD fuel cell group has not selected emergency power generation as a suitable application for fuel cells (CERL 2008). Therefore, fuel cells were eliminated from further detailed evaluation in this EIS as an emergency power alternative.

Renewable Energy Sources. Renewable sources of energy include wind power, solar power, and hydropower. While these energy sources are proven and commercially available, they do not have adequate reliability or a rapid enough start-up time to consider them as reasonable alternatives for emergency power systems. Energy output is inherently constrained by the natural environment. While windmills can be engineered to generate large energy outputs through structure height and length and angle of the propeller blades, the energy output varies from moment to moment with wind velocity. Solar panels can only generate electricity when the sun is shining. Hydroenergy requires a strong perennial flow, which might not be available during periods of drought. Furthermore, the physical resources for constructing any of these structures are simply not available at Fort Meade. Some of the largest commercially available (in energy output) windmills generate between 1.5 MW (onshore applications) and 3.6 MW (offshore applications) of electrical energy and tower more than 30 stories above ground level (GE 2005a, GE 2005b). Solar panels require between 80 and 120 ft², depending on the panel angle, per kW of energy output (GE 2007); the Proposed Action would require between 5.2 million and 7.8

million ft² (119 and 179 acres) of exposed sun surface to generate 65 MW of total emergency electric power. Hydroelectric dams require a moving water source and a large area that can be dammed to form a reservoir. None of these alternatives were considered reasonable for this Proposed Action, and they were eliminated from further detailed evaluation in this EIS.

2.2.3 Emissions Control Alternatives

The proposed boilers for the Central Boiler Plant and proposed emergency generators for the North Generator Facility and South Generator Facility could emit pollution and have adverse contributions to already poor air quality in the Fort Meade area. DOD has identified and considered alternatives to limit air emissions during implementation of the Proposed Action. These measures are being addressed proactively (1) to avoid, by design, significant impacts on air quality; and (2) to identify the most direct way to comply with strict state and Federal air quality regulations in the region. Fort Meade is in a nonattainment area for ozone (O₃) and fine particulate matter (PM_{2.5}) (i.e., particulate matter [PM] less than or equal to 2.5 micrometers). DOD seeks to minimize—by design—the effects of the Proposed Action on regional air quality by limiting emissions of oxides of nitrogen (NO_x), volatile organic compounds (VOCs), PM_{2.5}, and oxides of sulfur (SO_x), which are the precursors of O₃ and PM_{2.5}. Existing air quality conditions and air quality regulations pertinent to the Proposed Action are presented in detail in **Section 3.3** of this EIS.

Boilers and generators have the potential to emit (PTE) NO_x at rates much greater than VOC, PM_{2.5}, and SO_x. NO_x emissions, in particular, are a concern in O₃ and PM_{2.5} nonattainment areas. Due to the scope of the Proposed Action and the equipment requirements, NO_x emissions could be considerable, and controls likely would be mandatory under Federal and state air permitting requirements. Although emissions controls for VOC, PM_{2.5}, and SO_x have all been carried forward for detailed analysis, NO_x emissions are the focus of the control systems and strategies outlined herein.

For both boilers and generators, NO_x controls can be classified into two types: combustion and post-combustion control methods. Combustion-control methods prevent the formation of NO_x during the combustion process, while post-combustion methods reduce NO_x emissions after they are created by the combustion process. Simply speaking, combustion-control methods reduce the amount of NO_x emissions by lowering combustion temperatures. They are more economical than post-combustion methods and are often incorporated directly into the design of boilers and generators to maximize efficiency and to meet regulatory requirements such as the Clean Air Act (CAA) New Source Performance Standards (NSPS) (40 CFR Part 60). Combustion-control methods include burner modification, such as low NO_x burners and flue gas recirculation (FGR), for boilers and injection timing retard (ITR) for generators. Post-combustion-control methods “treat” flue gases to remove NO_x after its formation. Post-combustion control methods include selective noncatalytic reduction (SNCR) and SCR (Clever Brooks 2006a, USEPA 1995a, USEPA 2002b).

2.2.3.1 Evaluation Criteria

In an effort to satisfy the purpose of and need for the Proposed Action, DOD developed evaluation criteria to compare alternative ways of reducing air pollutant emissions. The DOD invited stakeholder input on the scope of analysis for the EIS (see **Section 1.4.1**), and through the public scoping process and meeting with planners, DOD identified the following four evaluation criteria in determining reasonable alternatives for controlling emissions:

1. Potential to significantly reduce air emissions
2. Proven and commercially available technology

3. Energy efficiency
4. Cost effectiveness.

Table 2.2-2 compares each emissions-control alternative to all the evaluation criteria outlined above. An emissions control alternative that meets all the evaluation criteria is carried forward in this EIS for detailed analysis. The reasons as to whether or not the various evaluation criteria are met are elaborated upon within the discussion associated with each respective alternative.

Table 2.2-2. Comparison of Emissions Controls to Evaluation Criteria

Source	Emissions Controls	Evaluation Criteria				Meets evaluation criteria
		Potential to significantly reduce air emissions	Proven and commercially available technology	Energy-efficient	Cost-effective	
Boilers	Low NO _x Burners and FGR	Yes	Yes	Yes	Yes	Yes
	SCR	Yes	Yes	Yes	No	Yes*
	SNCR	No	Yes	No	No	No
Generators	SCR	Yes	Yes	Yes	No	Yes*
	SNCR	Yes	Yes	Yes	No	No

Note: * Although not a cost-effective control method, SCR was carried forward for both generators and boilers because they might be required to meet the strict permitting requirements within the region.

2.2.3.2 Alternatives Evaluated in Detail in this EIS

Low NO_x Burners and FGR. Burner modifications (or low NO_x burners) are the most common combustion-control technology in boilers. Burner modifications involve changing the design of a standard burner to lower the flame temperature and subsequent NO_x formation. To comply with the more stringent air quality regulations, burner modifications must be used in conjunction with other NO_x reduction methods, such as FGR. If burner modifications are used exclusively to achieve low NO_x levels, adverse effects on boiler operating parameters such as turndown, decreased capacity, increased carbon monoxide (CO) levels, and decreased efficiency can result (Cleaver Brooks 2006a).

FGR is another common and cost-effective combustion-control method of reducing NO_x emissions in boilers. This control method is not technically viable for internal combustion engines, such as generators. FGR entails recirculating a portion of relatively cool exhaust gases back into the combustion chamber in order to reduce the flame temperature and limit NO_x formation. The limit of NO_x reduction varies for different fuels: 90 percent reduction for natural gas and a 25 to 30 percent reduction for standard fuel oils. Because of its effectiveness, uncomplicated design, and reliability, new boilers often use an integral FGR approach. By designing FGR and low NO_x burners as a package with the boiler, the effects on boiler operating parameters (e.g., turndown, capacity, CO levels, and efficiency) can be minimized. Boilers that meet the NSPS, as well as boilers with ultra-low NO_x designs, have been carried forward as a single alternative. Ultra-low NO_x designs emit between 9 and 30 parts per million (ppm) NO_x (Cleaver Brooks 2006a, Cleaver Brooks 2006b, USEPA 1995a).

Low NO_x burners and FGR for boilers have been carried forward for detailed analysis. FGR, combined with burner modifications, has the potential to significantly reduce air emissions, is a proven and commercially available technology, is energy-efficient, and is cost-effective. Based on publicly available information, selected models of commercially available ultra-low NO_x boilers meet the NSPS by incorporating low NO_x burners and FGR technologies as combustion controls (40 CFR 60 Subpart Dc, Cleaver Brooks 2006a, Cleaver Brooks 2006b, USEPA 1995a). Ultra-low NO_x boilers that use low NO_x burners and FGR meet the evaluation criteria and are carried forward for detailed analysis.

Combustion Control Methods for Generators. An example of a combustion-control technology for generators is ITR. Injection of fuel into the cylinder of an internal combustion engine initiates the combustion process. Retarding the timing of the diesel fuel injection causes the combustion process to occur later in the power stroke when the piston is in the downward motion and combustion chamber volume is increasing. By increasing the volume, the combustion temperature and pressure are lowered, thereby lowering NO_x formation. Preignition chamber combustion, adjusting the air-to-fuel ratio, and derating are other combustion-control technologies used in generators. These technologies are often used in concert to meet the Federal Tier 1 and Tier 2 emissions standards for generators, and are naturally incorporated into the standard designs. Therefore, combustion-control technologies for generators are not distinctly and separately addressed in the EIS. Generators that meet the Tier 2 standards have been carried forward for detailed analysis, and it is assumed that they incorporate reasonable combustion-control technologies to meet these standards (40 CFR Part 60, Part 85 et seq., Caterpillar 2005, USEPA 1995a).

SCR. SCR is a very effective post-combustion-control method of reducing NO_x emissions in generators. It involves the injection of ammonia in the exhaust gases in the presence of a catalyst. The catalyst allows the ammonia to reduce NO_x levels at lower exhaust temperatures than SNCR (discussed below). SCR can result in NO_x reductions up to 90 percent (USEPA 1994, 1995a, 1999, 2006). Despite its high cost and due to the limited effectiveness of other emissions-control technologies incorporated into off-the-shelf generator units, SCR is the most effective NO_x control for generators (Caterpillar 2007, USEPA 1995a, USEPA 2002b, USEPA 2006). SCR also meets the Lowest Achievable Emissions Rate (LAER) requirement for generators, which is by definition independent of cost (40 CFR 51.165, USEPA 2008a). It is likely that the use of SCR would be required to meet both Federal and state air permitting requirements. SCR for generators has been carried forward for detailed analysis.

Emergency diesel generators greater than 2.237 MW (3,000 horsepower) must meet the Tier 4 NSPS in 2011 only if add-on controls such as SCR are not required to do so (71 FR 39157). Since it is technologically unlikely the Tier 4 standards are achievable without add-on controls, the effective NSPS for 2.2- to 2.7-MW emergency diesel generators is Tier 2. Notably, there are currently no commercially obtainable Tier 4 generators of suitable size; therefore, nominal emissions factors are not available. Although not required for emergency generator applications, it is possible that Tier 4 generators could be available for nonemergency application within the next few years. For the purposes of this EIS, it is assumed that off-the-shelf Tier 4 generators available after 2011 will be similar in design or have emissions similar to the existing off-the-shelf Tier 2 units with SCR. Generators ultimately selected might differ in specific features from the ones described in this EIS, but the emissions profiles would be consistent with or lower than the Tier 2 engines described herein. Therefore, the Tier 2 generators have been carried forward to facilitate a detailed analysis in this EIS under NEPA because they are the most suitable off-the-shelf generators at this time.

The incorporation of FGR and low NO_x burners into boiler design has marginalized the effectiveness of SCR in reducing the already ultra-low NO_x emissions, so SCR is rarely applied to boilers. This combined with their high capital and operating costs makes SCR an unreasonable emissions-control method for

boilers (USEPA 1994, USEPA 1999). However, due to the strict permitting requirements of the region, SCR for boilers has been carried forward for detailed analysis in this EIS.

Limiting Generator Operation. Limiting emergency generator operation is the most direct and cost-effective emissions control method. It is accomplished by incorporating federally enforceable limits in the construction and operating permit(s) of new units. The obvious drawback to this approach is that if the limitations are not carefully chosen, the equipment might not meet the needs of the Proposed Action. Due to the operational requirements of the Proposed Action, limiting the operation would not be a suitable standalone approach to reducing emissions. However, when used in conjunction with other control methods, such as SCR, it might be a very effective approach to reduce the potential for emissions and to subsequently comply with state and Federal permitting requirements. Therefore, although not distinctly and separately addressed in this EIS, restricting operation through federally enforceable limits might be required in addition to other control methods, and has been addressed throughout this EIS in that context (40 CFR 51.165, USEPA 1995b).

2.2.3.3 Alternatives Considered but Eliminated from Detailed Evaluation

SNCR. SNCR is a moderately effective post-combustion-control method of reducing NO_x emissions from both boilers and generators. It involves the injection of a NO_x-reducing agent, such as ammonia or urea, in the exhaust gases. The ammonia or urea breaks down the NO_x in the exhaust gases into water and atmospheric nitrogen. SNCR reduces NO_x up to 50 percent. However, the technology is extremely difficult to apply to industrial boilers and emergency generators that do not operate under steady conditions because the location where the ammonia (or urea) must be injected is constantly changing (USEPA 1994, 1995a, 1999, 2006).

SNCR is rarely applied to boilers because the effectiveness of low NO_x burners combined with FGR make the further reduction in emissions unnecessary. This factor combined with its high capital and operating costs makes SNCR an unreasonable emissions control method for boilers (USEPA 1994, USEPA 1999). Therefore, SNCR was eliminated from detailed evaluation as an emissions control alternative for boilers.

Unlike SCR, SNCR does not meet the LAER requirements for generators. It is unlikely that it would be sufficient to meet Federal and state permitting requirements (USEPA 2008a). Therefore, SNCR was eliminated from detailed evaluation as an emissions-control alternative for generators.

2.2.4 Facility Alternatives

2.2.4.1 Evaluation Criteria

DOD identified the following evaluation criteria in determining reasonable locations on which new utilities could be sited:

- Is on NSA-controlled property
- Is available for development or redevelopment
- Has sufficient square footage to accommodate required project components and security stand-off distances
- Minimizes mission impacts
- Maximizes use of existing infrastructure and utility connections, if applicable

- Avoids disturbing environmentally sensitive areas (e.g., forests, streams, known contamination)
- Minimizes impacts (visual or environmental) on adjacent sensitive land uses (i.e., military family housing [MFH], National Register of Historic Places (NRHP) listed BW Parkway)
- Minimizes the number of parking spaces lost.

The first three criteria are absolute in that they must all be met in order to consider any site as a location alternative. Sites that do not meet the remainder of the criteria might still be suitable through engineering or mitigation.

2.2.4.2 Alternatives Evaluated in Detail in this EIS

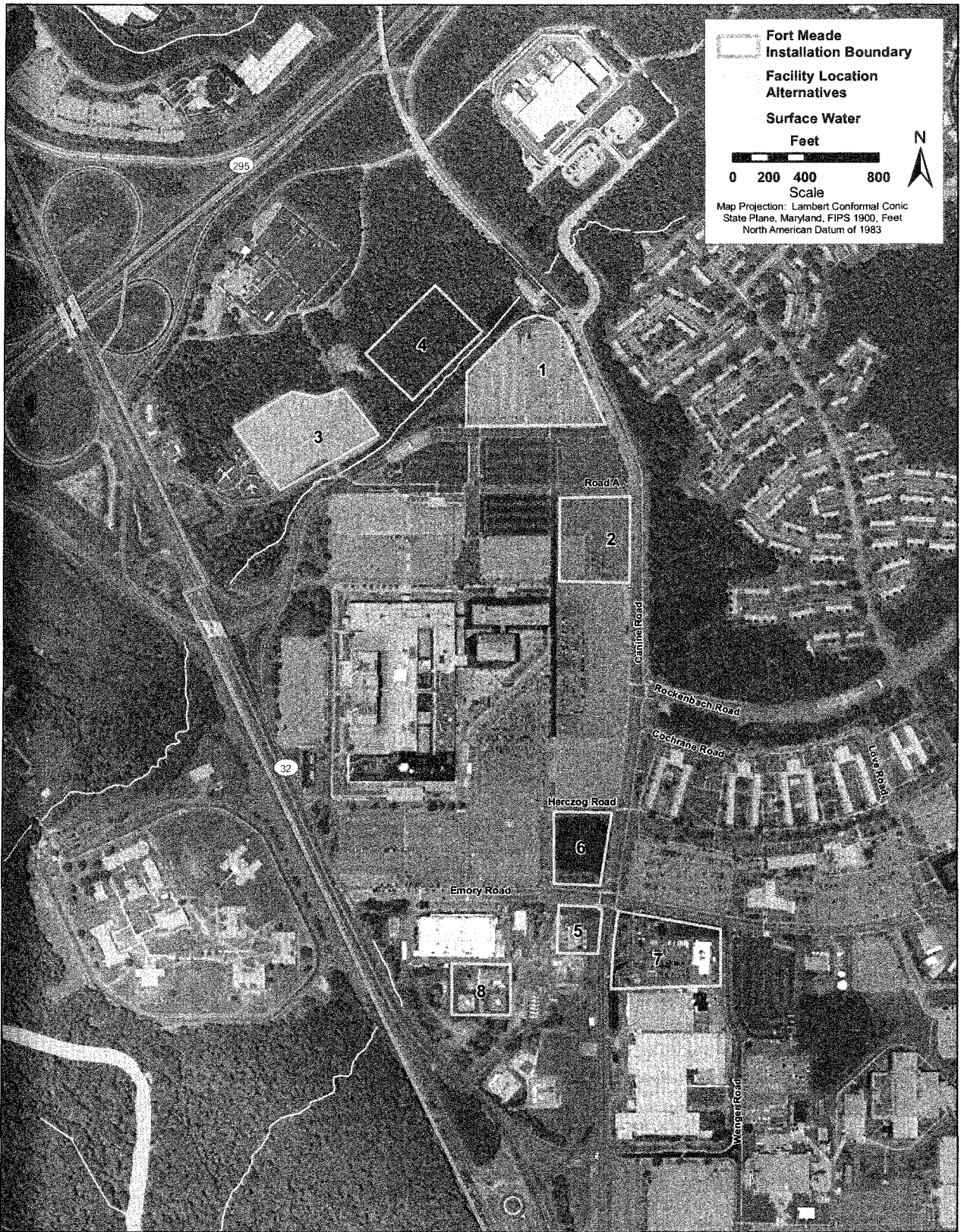
Eight sites have been identified as location alternatives, which are shown in **Figure 2.2-1** and described in detail in the following text. These eight sites are carried forward as facility alternatives in this EIS. For the purposes of this EIS, the approximate size indicated for each site is assumed to be the area of disturbance for construction.

Table 2.2-3 summarizes the relative suitability for each site alternative evaluated in detail in this EIS for the utilities projects. The relative rankings presented in **Table 2.2-3** do not account for engineering, design, or mitigation that could improve site suitability for a specific use. The relative rankings are elaborated upon under each location alternative. The full analysis of the potential impacts of implementing the Proposed Action at each location alternative is presented in **Section 4** of this EIS.

Site 1. Site 1 (approximately 7.3 acres) is bounded by forest on the northwest, Connector Road on the northeast, and Canine Road on the south. Privatized MFH is approximately 500 feet to the northeast on the other side of Connector Road. The BW Parkway is approximately 1,850 feet to the northwest. The current use of Site 1 is a parking lot. DOD has identified Site 1 as a facility alternative for the North Utility Plant.

Since Site 1 is currently a parking lot, construction of the North Utility Plant would avoid impacts on environmentally sensitive areas associated with development activities, such as tree removal. However, construction of the North Utility Plant with an approximate footprint of 2 acres on Site 1 would result in the loss of some current parking area. If Site 1 were selected as the location for the North Utility Plant, it is likely that the site design and engineering would be able to minimize the amount of actual parking area lost so that some parking could still be used. The number of acres that would be disturbed at Site 1 would be a maximum of 7.3 acres and could be less, but the exact space requirements would not be known until the detailed design process begins. At the time of publication of the Final EIS, only high-level engineering design has occurred and a conservative evaluation of impacts has been taken. However, for the purposes of this EIS, it is assumed that construction of the North Utility Plant would result in the loss of 7.3 acres of parking, which would be the greatest parking loss of any of the North Utility Plant site alternatives. Site 1 is close to the Midway Common MFH neighborhood. A tree buffer does provide some separation between Site 1 and the MFH area. The overall ranking reflects Site 1 as the least suitable site for the North Utility Plant for the reasons listed in **Table 2.2-3**.

Site 2. Site 2 (approximately 4.1 acres) is bounded by Road A on the north, Canine Road on the east, Wray Road on the south, and Dennis Road on the west. Privatized MFH is approximately 610 feet to the northeast on the other side of Canine Road. The BW Parkway is approximately 2,660 feet to the northwest. The current use of Site 2 is a parking lot. DOD has identified Site 2 as a location alternative for the North Utility Plant.



Source of Aerial Photography: NAIP 2007; Location Alternatives: eM Inc 2007.

Figure 2.2-1. Facility Alternatives under Consideration

Table 2.2-3. Suitability Comparison of Facility Alternatives for Proposed Utilities Projects

Site No.	Evaluation Criteria Ranking					Overall Suitability
	Minimizes Mission Impacts	Maximizes Existing Infrastructure	Avoids Environmentally Sensitive Areas	Minimizes Adverse Impacts on Sensitive Surrounding Land Uses	Minimizes Parking Lost	
North Utility Plant Location Alternatives						
Site 1	4	4	1	3	4	3.2
Site 2	4	3	1	4	2	2.8
Site 3	2	2	1	2	3	2.0
Site 4	1	1	4	1	1	1.6
South Generator Facility Location Alternatives						
Site 5	1	1	1	1	1	1.0
Site 6	2	3	3	3	1	2.4
Site 7	3	2	1	2	3	2.2
Central Boiler Plant Location Alternatives						
Site 7	2	2	1	1	2	1.6
Site 8	1	1	1	1	1	1.0

Source: URS 2008

Notes:

The ranking is for relative comparisons of each location alternative for its possible use based on the following scale:

- lowest number = meets evaluation criterion and is the most favorable alternative
- highest number = does not meet evaluation criterion or is least favorable alternative
- numbers in between = relative rank based on suitability or preference for each criterion
- equal numbers = no preference among location alternatives for that criterion

Overall suitability is the average of all values where the lowest number is the most suitable location alternative based solely on the evaluation criteria.

Site 2 is a parking lot, so there is less potential to conflict with sensitive resources during construction activities. It is assumed that if Site 2 were selected as the location for the North Utility Plant then 4.1 acres of parking would be lost. The number of acres that would be disturbed at Site 2 would be a maximum of 4.1 acres and could be less, but the exact space requirements would not be known until the detailed design process begins. At the time of publication of the Final EIS, only high-level engineering design has occurred and a conservative evaluation of impacts has been taken. Site 2 is also close to the Midway Common MFH neighborhood, but it is the farthest site from the BW Parkway. A tree buffer does provide some separation between Site 2 and the MFH area. The overall ranking reflects Site 2 as the third-most suitable site for the North Utility Plant for the reasons listed in Table 2.2-3.

Site 3. Site 3 (approximately 5.6 acres) is just east of National Vigilance Park, a static aircraft display, and is northwest of Canine Road. Site 3 is on NSA-controlled property, but not within the NSA-patrolled fence line. If Site 3 is selected, the NSA-patrolled fence would be relocated to include the proposed facilities. On the north, this location alternative is surrounded by trees. MD-32 is approximately 800 feet

to the west, and the BW Parkway is approximately 1,200 feet to the northwest. The current use for this site is an overflow parking lot. DOD has identified Site 3 as a location alternative for the North Utility Plant.

Site 3 is a parking lot, so there is less potential to encounter sensitive resources during construction activities. Similar to Site 1, if Site 3 were selected as the location for the North Utility Plant, it is likely that the site design and engineering would be able to minimize the amount of actual parking lost so that some parking could still be used for overflow. The number of acres that would be disturbed at Site 3 would be a maximum of 5.6 acres and could be less, but the exact space requirements would not be known until the detailed design process begins. At the time of publication of the Final EIS, only high-level engineering design has occurred and a conservative evaluation of impacts has been taken. However, for the purposes of the EIS, it is assumed that construction of the North Utility Plant would result in the loss of 5.6 acres of parking. A tree buffer provides some separation between Site 3 and the BW Parkway. The overall ranking reflects Site 3 as the second most suitable site for the North Utility Plant for the reasons listed in **Table 2.2-3**. Site 3 is also relatively close to adjacent land uses that, while not as sensitive as housing or NRHP-listed resources, could be impacted by the construction and operation of the North Utility Plant; these are National Vigilance Park (adjacent) and the National Cryptologic Museum (approximately 890 feet north).

Site 4. Site 4 (approximately 6.1 acres) is west of Site 1 and northeast of Site 3, on NSA-controlled property, but not within the NSA-patrolled fence line. It is approximately 1,220 feet from the BW Parkway. This parcel is within a Forest Conservation Area. DOD has identified Site 4 as the preferred alternative for the North Utility Plant.

Since Site 4 is undeveloped, construction of the North Utility Plant at this site would have greater potential for environmental impacts but no parking would be lost. Development of this site for the North Utility Plant would result in the removal of approximately 4 acres of trees to ensure site clearance, accessibility, and security (URS 2008). Additionally, this site would require a new access road, which would most likely cross a perennial stream (URS 2008). The number of acres that would be disturbed at Site 4 would be a maximum of 4 acres and could be less, but the exact space requirements would not be known until the detailed design process begins. At the time of publication of the Final EIS, only high-level engineering design has occurred and a conservative evaluation of impacts has been made. Final project design would limit impacts on forested areas and visual resources to the maximum extent practical. Some reforestation would occur to improve the adjacent pine scrub forest; however the extent of the forest restoration is not known at this time.

Site 4 is the second farthest away from sensitive land uses. A tree buffer would continue to provide separation between Site 4 and the BW Parkway, but use of this site would require the removal of several acres of trees. This site, as with Site 3, is also relatively close to adjacent land uses that, while not as sensitive as housing or NRHP-listed resources, could be impacted by the construction and operation of the North Utility Plant; these are National Vigilance Park (approximately 1,160 feet southwest) and the National Cryptologic Museum (approximately 980 feet west). If Site 4 is selected, the NSA-patrolled fence would be relocated to include the proposed facilities. The overall ranking reflects Site 4 as the most suitable site for the North Utility Plant for the reasons listed in **Table 2.2-3**.

Site 5. Site 5 (approximately 1.4 acres) is the location of seven existing generator sets (8,570 ft²) and within an enclosed utility yard. It is immediately south of Emory Road, west of Canine Road, and north of the proposed site for the South Electrical Substation replacement project. Construction of the proposed South Generator Facility at Site 5 is the preferred alternative, as described in **Section 2.1.2**.

Site use as a generator facility has historically resulted in fuel spills and some environmental contamination. In the 1970s and early 1980s, it is known that an area south of the site was used as a burial site for ash and magnetic tape residue that was used during that time. Groundwater sampling around the area has not indicated any contamination from the presence of these materials. The previously identified South Electrical Substation is planned immediately south of Site 5, as previously analyzed in the South Electrical Substation EA (DOD 2007). The remnant foundation of a former chiller facility and the decommissioned Canine Road Pretreatment Plant are also in the immediate vicinity the proposed site. Since Site 5 is the location of existing generators, the continued use of this site for emergency generators would maximize existing infrastructure. The overall ranking reflects Site 5 as the most suitable site for the proposed South Generator Facility (see **Table 2.2-3**).

Site 6. Site 6 (approximately 2.6 acres) is bounded by Dennis Road on the west, Herczog Road on the north, Canine Road on the east, and Emory Road on the south. Site 6 is one of two remaining tree stands on the central portion of the campus. Development of this site would result in the loss of several acres of forest. DOD has identified Site 6 as a potential location alternative for the South Generator Facility.

Since Site 6 is undeveloped, construction of the South Generator Facility at this site would have greater potential for environmental impacts but no parking would be lost. Land uses surrounding Site 6 include primarily parking and the utility yard, but there are also some barracks (approximately 370 feet northeast) and administrative buildings on the east side of Canine Road. Of the three alternative sites, Site 6 was ranked as least suitable for minimizing impacts on adjacent land uses because of its proximity to the barracks. The overall ranking reflects Site 6 as the least suitable site for the South Generator Facility for the reasons listed in **Table 2.2-3**.

Site 7. Site 7 (approximately 5.3 acres) is southeast of the intersection of Canine Road and Emory Road. Site 7 is the location of the former motor pool. Use of Site 7 would require moving the remnants of the motor pool to another location (approximately 1.3 acres of parking). DOD has identified Site 7 as a location alternative for the South Generator Facility and the Central Boiler Plant.

Though Sites 5 and 8 are more suitable for the South Generator Facility and the Central Boiler Plant because of the existing infrastructure, Site 7 also has access to the necessary utility connections to accommodate either facility with only minor utility work. It is assumed that if Site 7 were selected as the location for the South Generator Facility or the Central Boiler Plant, 1.3 acres of parking would be lost, though the motor pool is small enough to possibly be accommodated in an existing overflow lot. Surrounding land uses are primarily parking and administrative buildings; the barracks are approximately 860 feet north and separated from Site 7 by other structures. The overall suitability ranking for Site 7 for both facilities is shown in **Table 2.2-3**.

Site 8. Site 8 (approximately 1.8 acres) is the location of the existing boiler facility and within an enclosed utility yard. Replacement of the Central Boiler Plant at Site 8 is the preferred alternative, as described in **Section 2.1.3**.

Site use as a boiler plant has historically resulted in fuel spills and generation of hazardous waste from water descaling units (these are no longer used at the plant). Contaminated soils have been removed from the site at various times, and groundwater monitoring wells are in place (DOD 2001). Site 8 is periodically sampled and monitored, and soil and groundwater contamination are not thought to occur. Since Site 8 is the current location of the boiler plant, replacement of an in-kind Central Boiler Plant with comparably sized units would maximize the use of existing infrastructure. The overall ranking reflects Site 8 as a suitable site for the Central Boiler Plant for these reasons (see **Table 2.2-3**).

2.2.4.3 Alternatives Considered but Eliminated from Detailed Evaluation

Areas Outside the NSA Campus. As a tenant on Fort Meade, NSA is subject to real estate agreements and cannot begin construction of facilities outside their exclusive use area without officially acquiring the real estate agreements to do so from the Department of the Army. CEQ regulations state that agencies must consider alternatives outside their jurisdiction if an alternative is reasonable. Since the need for the action addressed in the EIS is to stabilize the existing infrastructure and is consequently an immediate need, the failure to begin construction in a reasonable time period could substantially delay utility construction. Therefore, for this reason, DOD does not consider areas outside of the existing campus as reasonable for this project.

Other Areas Within the NSA Campus. NSA has land holdings on Fort Meade north of the central portion of the campus. This land is a Forest Conservation Area and abuts the BW Parkway. The installation of utility lines over the greater distance to this area would result in substantially more ground disturbance and would be operationally inefficient. Siting utilities so far outside the existing secured perimeter would result in a substantial expansion of the perimeter and associated ground disturbance, construction costs, and manpower to secure the perimeter. Therefore, the use of other areas within the NSA campus was eliminated from further detailed evaluation as location alternatives.

2.2.5 Utility Corridor Alternatives

The proposed North Utility Plant (**Section 2.1.1**) would require installation of utility lines (i.e., power distribution lines, high-voltage power transmission lines) on the NSA campus regardless of which site is selected. It is also possible that the Proposed Action or alternatives might require the relocation or realignment of some utility lines in order to accommodate a new structure at some of the sites identified in **Section 2.2.4**. The following selection criteria would be used in determining utility line corridors:

- Avoid installation in undisturbed areas by preferentially choosing utility corridors to coincide with existing utility paths or along roadways.
- Avoid environmentally sensitive areas (e.g., forests, wetlands, streams) when utility lines cannot be installed in previously disturbed areas.
- Minimize potential disturbances to scenic views by careful site selection, if overhead utilities are installed (e.g., BW Parkway).
- Minimize area of disturbance by collocating and installing proposed utility lines at the same time, to the greatest extent possible.
- Minimize area of disturbance by choosing the shortest path possible, if the previously mentioned criteria cannot be applied.

Existing above- and underground utility corridors would be used to the maximum extent possible to minimize construction disturbance. DOD will not disclose the locations of existing or proposed utility corridors for security reasons. For the purposes of this EIS, it is assumed that the maximum ground disturbance associated with utility trenching for power distribution lines would be 90,000 ft². The estimated 90,000 ft² would be on previously disturbed areas.

In addition to power distribution lines, it is estimated that either overhead or underground power transmission lines would be required for the North Utility Plant. These transmission lines would provide power from a planned BGE substation to the proposed North Electrical Substation. Currently, the BGE substation has not been sited, so transmission lines could be either overhead or underground where they would enter the NSA campus. It is anticipated that the BGE substation will be constructed south of MD-

32 and west of the BW Parkway and enter the NSA campus along MD-32. This EIS considers the installation of transmission lines as they enter the NSA campus. It is assumed that all transmission lines would be constructed along existing utility corridors and roadways to the maximum extent possible. Since it is unknown whether transmission lines would be overhead or underground, it is assumed that the area of disturbance on the NSA campus for transmission line installation would be 53,000 ft².

All utility lines would be installed and maintained in accordance with existing Federal and state safety standards and regulations. It is anticipated that final selection of the utility corridors would be made during the engineering and design process. If potential environmental impacts are identified that are beyond those analyzed in this EIS, DOD would undertake additional analysis at that time in accordance with all Federal and state review and permitting procedures.

2.2.6 Parking Alternatives

The existing NSA campus has limited developable land, as shown in **Figure 2.2-1**. Construction of new utility plant components would likely result in the displacement of some campus parking. Parking lots are fully used most days, including overflow parking, so the net loss of any parking would require replacement parking. However, the amount of replacement parking needed would depend on the facility alternatives selected, as described in **Section 2.2.4**.

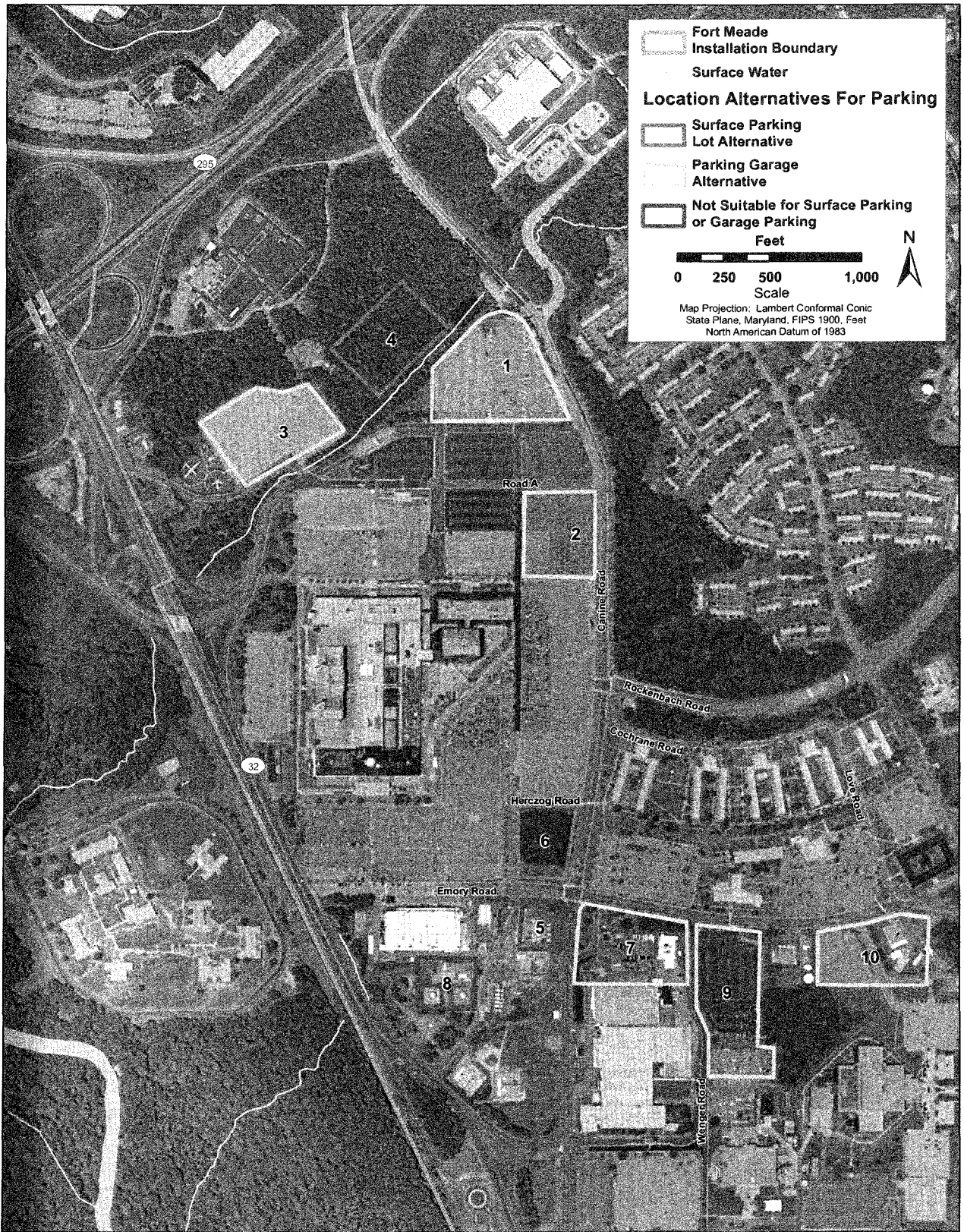
Since the utilities upgrades project is in the early planning stages, no engineering or design work for replacement parking has been accomplished. Therefore, this EIS does not consider various design factors in detail but makes generalizations about surface parking and parking garages. The exact space requirements would not be known until the detailed design process begins. At the time of publication of the Final EIS, only high-level engineering design has occurred. It is anticipated that site-specific parking and transportation studies would be accomplished during the design and engineering process to ensure efficient and safe use of space, ingress and egress, and movement patterns.

2.2.6.1 Evaluation Criteria

DOD identified the following evaluation criteria in determining reasonable locations where replacement parking could be sited:

- Has sufficient square footage to accommodate required project components and security stand-off distances
- Avoids the disturbance of environmentally sensitive areas (e.g., forests, streams, known contamination)
- Minimizes impacts (visual or environmental) on adjacent sensitive land uses (e.g., MFH, NRHP-listed BW Parkway)
- Minimizes the distance that employees would have to walk
- Is cost-effective.

DOD identified eight sites as location alternatives for replacement parking based on the criteria above. Most sites available for construction of facilities (see **Section 2.2.4**) would also be considered available for mitigation parking. Sites 1, 2, 3, 4, 6, and 7, which are described in **Section 2.2.4**, were identified as parking alternatives. In addition, DOD identified Site 9 and Site 10 that could also be used as parking alternatives. **Figure 2.2-2** shows the site locations of the parking alternatives evaluated in detail in this EIS. **Table 2.2-4** summarizes each site under consideration as a parking location alternative, including the size of the site, the area of parking that exists at the site (if applicable), and considerations associated with the site.



Source of Aerial Photography: NAIP 2007; Location Alternatives: e2M Inc 2007.

Figure 2.2-2. Locations of Parking Alternatives under Consideration

Table 2.2-4. Summary of Locations Available for Use as Parking Areas

Site No.	Facility Alternative for Utility	Site Size (acres)	Existing Parking Area (acres)	Site Considerations
Site 1	North Utility Plant	7.3	7.3	<ul style="list-style-type: none"> - Bounded by Connector Road, Canine Road, and forest - MFH is 500 feet northeast - BW Parkway is 1,850 feet northwest
Site 2	North Utility Plant	4.1	4.1	<ul style="list-style-type: none"> - Bounded by Road A, Canine Road, Wray Road, and Dennis Road - MFH is 610 feet northeast - BW Parkway is 2,600 feet northwest
Site 3	North Utility Plant	5.6	5.6	<ul style="list-style-type: none"> - Bounded by National Vigilance Park, Canine Road, and forest - BW Parkway is 1,200 feet northwest - National Cryptologic Museum is 890 feet north
Site 4	North Utility Plant (preferred site)	6.1	--	<ul style="list-style-type: none"> - Surrounded by forest, between Sites 1 and 3 - Undeveloped site (tree stand), within a Forest Conservation Area - BW Parkway is 1,220 feet west - National Vigilance Park is 1,160 feet southwest - National Cryptologic Museum is 980 feet north
Site 6	South Generator Facility	2.6	--	<ul style="list-style-type: none"> - Bounded by Dennis Road, Herczog Road, Canine Road, and Emory Road - Undeveloped site (tree stand) - Barracks are 370 feet northeast
Site 7	South Generator Facility or Central Boiler Plant *	5.3	1.3	<ul style="list-style-type: none"> - Bounded by Canine Road and Emory Road - Currently used as a motor pool - Barracks are 860 feet north
Site 9	--	6.1	6.1	<ul style="list-style-type: none"> - Bounded by Emory Road, Wenger Road, and forested parcel - Barracks are 1,380 feet north - Currently used as parking lot
Site 10	--	4.8	2.2	<ul style="list-style-type: none"> - Bounded by Emory Road and Obrien Road - Several existing structures (15,400 ft²) and parking are on site - Under investigation for potential contamination and presence of unexploded ordnance (UXO) from a former mortar range - Barracks are 920 feet north

Note: * Site 7 could accommodate either the South Generator Facility or the Central Boiler Plant, but not both facilities.

Preliminary screening resulted in two primary parking alternatives: construction of a surface lot (or several lots) or construction of a parking garage at those sites identified in **Figure 2.2-2** and **Table 2.2-4**. For the purposes of this EIS, a reasonable range of parking alternatives will be analyzed in detail to bound the analysis. The parking mitigation alternative would depend primarily on the facility alternatives selected for the North Utility Plant, the South Generator Facility, and the Central Boiler Plant. The number of parking spaces eliminated by selection of a facility alternative for each utility upgrade component would vary, and the sites available for construction of mitigation parking would depend on the sites selected for the utility upgrade components. **Table 2.2-5** summarizes all alternatives resulting from various combinations of siting options. **Appendix D** includes the detailed calculations and assumptions that show the full range of parking alternatives available.

Table 2.2-5. Summary of Parking Alternatives Based on Combinations of Facility Alternatives

Site No.	Site Size (acres)	All Combinations of Facility Alternatives							
		<u>Option 1</u> North-1 South or Boiler-7	<u>Option 2</u> North-1 South-5 Boiler-8	<u>Option 3</u> North-2 South or Boiler-7	<u>Option 4</u> North-2 South-5 Boiler-8	<u>Option 5</u> North-3 South or Boiler-7	<u>Option 6</u> North-3 South-5 Boiler-8	<u>Option 7</u> North-4 South or Boiler-7	<u>Option 8</u> North-4 South-5 Boiler-8
Site 1	7.3	--	--	2 stories	2 stories	2 stories	2 stories	2 stories	0
Site 2	4.1	4 stories	4 stories	--	--	3 stories	3 stories	2 stories	0
Site 3	5.6	3 stories	3 stories	3 stories	2 stories	--	--	2 stories	0
Site 4	6.1	2 lots	2 lots	1 lot	1 lot	2 lots	1 lot	1 lot	--
Site 6	2.6			0	0		NA	1 lot	0
Site 7	5.3	--	3 stories	--	2 stories	--	3 stories	--	0
Site 9	6.1	3 stories	3 stories	3 stories	2 stories	2 stories	3 stories	2 stories	0
Site 10	4.8	4 stories	3 stories	3 stories	2 stories	3 stories	3 stories	2 stories	0

Notes:

-- = Site could not be used for parking because it would be used for a utility in this option.

0 = No replacement parking would be needed under this option.

4 stories = Site is not considered a reasonable parking garage location because of its height and availability of other alternatives.

NA = Not considered a reasonable parking alternative because the site would not be large enough for one lot that accommodates all parking needs in this scenario.

North = North Utility Plant, South = South Generator Facility, and Boiler = Central Boiler Plant

As discussed in Section 2.2.4, either the South Generator Facility or the Central Boiler Plant could be located at Site 7, but not both.

2.2.6.2 Alternatives Evaluated in Detail in the EIS

Assumptions under which replacement parking would be needed—and how much replacement parking would be required—are based on the combination of site alternatives selected, as discussed in **Section 2.2.4** and shown in **Figure 2.2-1**. It is assumed that a one-to-one area replacement would be needed; that is, for 1 acre of parking lost, 1 acre equivalent would need to be constructed as a replacement. To determine the possible outcomes of all combinations of facility alternatives, all scenarios were compared to determine the amount of parking lost to the amount of space available at each of the remaining sites that could fulfill parking requirements either through the construction of a parking garage or through converting undeveloped sites to surface parking lots. **Appendix D** includes the detailed calculations and assumptions that show the full range of parking alternatives available.

Any of the options identified in **Table 2.2-5** would be considered reasonable alternatives, unless indicated otherwise. Option 8 identified in **Table 2.2-5** is the preferred alternative (i.e., construction of the North Utility Plant at Site 4, construction of the South Generator Facility at Site 5, and construction of the Central Boiler Plant at Site 8) and would result in no additional need for parking because no parking would be lost. This option is not analyzed separately because it would not result in impacts above and beyond those described for implementing the Proposed Action at the preferred sites. The alternatives described below and evaluated in detail in **Section 4** of this EIS are considered representative of the range of reasonable alternatives that are available for replacement parking.

Construct Surface Parking Lots. This alternative assumes that surface parking would be constructed on both Site 4 and Site 6 (see detailed description of sites in **Section 2.2.4** or in **Table 2.2-4**). Use of these two sites would result in the conversion of approximately 8.7 acres of forest to paved parking. Site 4 and Site 6 are the only undeveloped sites that have been identified as available for development on the NSA campus.

It is anticipated that Sites 4 and 6 would be able to provide sufficient replacement parking for any of the facility alternatives selected for the North Utility Plant, South Generator Facility, and Central Boiler Plant. For example, use of Site 1 for the North Utility Plant and Site 7 for either the South Generator Facility or Central Boiler Plant would result in the loss of approximately 8.7 acres, which would be the greatest parking loss of any of the facility alternatives for the utilities. While some combinations of siting alternatives might require only the use of Site 4 or Site 6, the potential impacts of using both sites for surface lots are considered in this EIS to provide the upper limit of potential environmental impacts on undeveloped sites.

Construction of two surface lots would be considered more cost-effective than construction of a parking garage. However, this alternative would result in disturbance and removal of forest resources, which are more environmentally sensitive areas than other developed areas. Large surface parking areas can also exacerbate other environmental problems. Large areas of paved surfaces can contribute to warming of air temperatures in the vicinity of the lot. Surface lots tend to absorb and accumulate fuels, oils, road salt, and other materials that can be transported into surface water bodies during rainfall events. Large areas of flat surfaces can also contribute to sheet flow and increased storm water velocity during heavy rainfall events.

Construct a Parking Garage. Under this alternative, a multistory parking garage would be constructed to provide replacement parking. A parking garage could be constructed on a developed site (i.e., an existing parking lot). For the purposes of this EIS, three scenarios for a parking garage will be analyzed in detail: (1) a three-story parking structure on Site 3, (2) a three-story parking structure on Site 9, and (3) a three-story parking structure on Site 10. The maximum height of a three-story parking structure is assumed to be 35 feet for this EIS, though actual height would vary depending on the final design and engineering. These three alternatives are mutually exclusive in that selection of one of these alternatives would be expected to provide the amount of parking required to replace any parking that is lost as a result of constructing the North Utility Plant, the South Generator Facility, and the Central Boiler Plant.

As presented in **Appendix D**, Sites 1, 2, 3, 7, 9, and 10 could be used to construct a parking garage. However, given the possible combinations of where facilities could be constructed, only three representative locations have been selected for detailed analysis to cover the range of reasonable parking alternatives: Sites 3, 9, and 10. The number of stories could vary, again, according to the combination of sites, but three stories was selected as representative for a parking garage and would encompass a two-story structure. Several scenarios result in a requirement for four stories (see **Appendix D**), which are not considered as alternatives in this EIS at any sites because of the potential for visual impacts on surrounding land uses when there are other less-intrusive options available (see **Table 2.2-4**).

Construction of a parking garage on the undeveloped Sites 4 or 6 is also not considered as an alternative in this EIS because there are other alternatives available at less sensitive and previously developed sites.

Construction of a parking garage would be considered a more expensive alternative than construction of surface parking lots. Construction of parking structures are considerably more expensive to design and engineer and require parking and traffic flow studies to ensure safe ingress and egress and traffic movement inside the structure. Parking structures also pose the challenge of being visually integrated into a campus or setting. Parking garages offer other environmental and land use benefits, such as a smaller impervious surface and construction footprint. Furthermore, use of existing parking lots to construct a parking garage would minimize impacts on undeveloped sites, such as removal of trees and soil erosion.

2.2.6.3 Alternatives Considered but Eliminated from Detailed Evaluation

Site 5 and Site 8. Sites 5 and 8 are described in **Section 2.2.4**. Site 5 is the preferred site for the South Generator Facility, and Site 8 is the preferred site for the Central Boiler Plant. There are location alternatives for both the South Generator Facility and the Central Boiler Plant. However, if other location alternatives were selected for the construction of these facilities, then Sites 5 and 8 could not be used for employee parking because they are in the middle of a utility yard. Therefore, Sites 5 and 8 are not considered further in this EIS in the parking lot alternatives analysis.

Areas Outside the NSA Campus. As a tenant on Fort Meade, NSA is subject to real estate agreements and cannot begin construction of parking lots without officially acquiring the real estate agreements to do so from the Department of the Army. Even if construction of parking lots were to occur outside the campus, employees would be required to walk unreasonable distances from parking lots to buildings. Therefore, areas outside the NSA campus were eliminated from further detailed evaluation as parking mitigation alternatives.

Other Areas Within the NSA Campus. NSA has land holdings on Fort Meade north of the central portion of the campus. This land is a Forest Conservation Area and abuts the BW Parkway. If construction of parking lots were to occur in other areas that are currently undeveloped and well beyond the main buildings of the campus, employees would be required to walk unreasonable distances from parking lots to buildings. Therefore, other areas within the NSA campus were eliminated from further detailed evaluation as parking mitigation alternatives.

Mass Transportation or Ride-Sharing Programs. EO 12191, *Federal Facility Ridesharing Program*, and EO 13150, *Federal Workforce Transportation*, state a Federal policy for promoting the use of ridesharing by personnel working at Federal facilities and encouraging the use of fringe benefit programs and nonmonetary incentives for mass transportation and vanpool use. Use of mass transportation and ride-sharing would be beneficial in reducing DOD employees' contributions to traffic congestion and air pollution, but it is not anticipated that increased mass transportation and ride-sharing programs would reduce the demand for parking sufficient to compensate for the loss of entire parking areas. Mass transportation and ride-sharing incentives could be explored outside this Proposed Action to increase commuting options, but it is not considered a reasonable alternative as a parking mitigation alternative.

2.3 Identification of the Preferred Alternative

CEQ's implementing regulations instruct EIS preparers to "Identify the agency's preferred alternative, if one or more exists in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference" (40 CFR 1502.14(c)). The DOD's preferred alternative is to construct the North Utility Plant as described in **Section 2.1.1** at Site 4, upgrade the South Generator

Facility as described in **Section 2.1.2** at Site 5, and replace the Central Boiler Plant as described in **Section 2.1.3** at Site 8. If Sites 4, 5, and 8 are selected for the facility locations, then no additional replacement parking would be needed.

2.4 Identification of Cumulative Actions

CEQ defines cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” Informed decisionmaking is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

The following discussion presents those actions or projects that are temporally or geographically related to the Proposed Action and, as such, have the potential to result in cumulative impacts. The cumulative impacts analysis will be presented by resource area in **Section 4.15**.

NSA Actions

Past Actions. Prior to development, the NSA campus was previously used as farmland (DOD 2001). Development began in the mid-1950s when NSA became a tenant of Fort Meade. Past actions and development of the campus that could result in cumulative impacts would be encompassed in the existing condition (see **Section 3**). Therefore, no specific past actions have been identified for cumulative impacts analysis.

South Electrical Substation EA. As mentioned in **Section 1.3**, DOD prepared an EA for the replacement of an electrical substation in the southern portion of the NSA campus (DOD 2007). The South Electrical Substation EA analyzed the replacement of switchgear, two step-down transformers with N+1 redundancy built-in, and air brake switches, and included associated miscellaneous improvements such as storm water management and roadway modifications. No significant impacts were identified; however, this project will be considered in the cumulative impacts analysis because the proposed South Generator Facility would be immediately north of the replaced substation and would connect to it.

Expansion of the NSA Campus. NSA has considered areas of the Fort Meade campus for possible expansion in the future. The only area adjacent to the NSA campus where expansion could occur is the tract east of Canine Road and north of Emory Road, called the “9800 Area,” extending to the Fort Meade Golf Course (see **Figure 2.4-1**). NSA has expressed interest in acquiring additional land from Fort Meade for mission expansion sometime in the future, but the possibility of additional missions and associated facilities needs, utilities demands, and personnel are not yet ripe for decisionmaking. In the future, this parcel of land could become a viable location for the construction of NSA assets or expansion under appropriate real estate agreements. Future expansion would be the subject of appropriate additional NEPA analysis at that time. Any future expansion is unrelated to the purpose of and need for this Proposed Action. The possibility of expansion is considered too speculative at this point to include in the cumulative impacts analysis; therefore, it will not be addressed further.

Fort Meade Actions

Base Realignment and Closure (BRAC) Actions. The U.S. Army prepared a ROD in November 2007 based on the *Final Environmental Impact Statement for Implementation of Base Realignment and Closure 2005 and Enhanced Use Lease Actions at Fort George G. Meade, Maryland* (the “BRAC/EUL EIS”)

(USACE 2007). The DOD will consolidate and relocate the Defense Information System Agency (DISA), the Defense Media Agency (DMA), and Department of Adjudication Activities to Fort Meade. A Post Exchange, gym, and unaccompanied personnel housing would also be constructed on Fort Meade to provide facilities associated with accommodating additional incoming personnel. The locations of these projects are shown in **Figure 2.4-1**. Combined, these projects would require approximately 3.0 million ft² (69 acres) of new facility and vehicle space. Significant adverse impacts on traffic and transportation, vegetation and wildlife, and utilities were identified as a result of the associated increased personnel (approximately 5,700 people) and removal of forest (approximately 25 acres) (USACE 2007). BRAC actions are considered in the cumulative impacts analysis.

Enhanced Use Lease (EUL) Actions. The November 2007 ROD based on the BRAC/EUL EIS also identified excess land owned by Fort Meade to be leased to a private developer for the construction of office buildings (173 acres) and two 18-hole golf courses (367 acres). The locations of these projects are shown in **Figure 2.4-1**. It is anticipated that approximately 2.0 million ft² (46 acres) would be developed for office space and parking. Significant adverse impacts on traffic and transportation, vegetation and wildlife, and utilities were identified as a result of the associated increased personnel (approximately 10,000 people) and removal of forest (approximately 205 acres) (USACE 2007). EUL actions are considered in the cumulative impacts analysis.

Military Family Housing. In 2002, the U.S. Army transferred MFH responsibilities to Picerne Military Housing through leasing agreements. The neighborhood closest to NSA property is Midway Common (see **Figure 2.4-1**). Midway Common is the largest MFH neighborhood with more than 800 homes. It serves all ranks of soldiers and is home to single-family one-level ranch homes with basements, duplexes, and townhomes. Major renovations to Midway Common are anticipated to be complete in 2008 (Picerne 2003a). An additional neighborhood center will be constructed in 2009 (Picerne 2003b). Ongoing actions at the Midway Common neighborhood are considered in the cumulative impacts analysis because it is adjacent to Sites 1 and 2 under consideration for this Proposed Action.

902nd Military Intelligence Group Administrative and Operations Center. The U.S. Army Intelligence and Security Command identified a requirement to construct a new 902nd Military Intelligence Group administrative and operations center. The proposed facility would occupy approximately 420,000 ft² on the western portion of Fort Meade (see **Figure 2.4-1**). The EA and FONSI for this project identified short-term impacts on transportation systems because of the influx of construction vehicles and construction workers traveling to and from Fort Meade (INSCOM 2007). Given the limited extent of potentially adverse impacts and the distance between the proposed 92nd Military Intelligence Group building and the Proposed Action, this project is not considered further in this EIS for potential cumulative impacts.

Asymmetric Warfare Group Compound and Motor Pool. The Asymmetric Warfare Group prepared an EA analyzing the construction of a 50-acre compound for administrative and operations buildings, an indoor firing range, and a 2-acre motor pool for vehicle storage and maintenance (see **Figure 2.4-1**). The EA identified short-term impacts associated with construction activities (AWG 2006). Given the limited extent of potentially adverse impacts and the distance between the complex and motor pool and the Proposed Action, this project is not considered further in this EIS for potential cumulative impacts.

Central Maryland Transit Operations Facility. Approximately 15 acres are proposed for lease to a Howard and Anne Arundel County Partnership for the construction, operation, and maintenance of a bus terminal and maintenance facility. The proposed site is located in the southwestern corner of the installation, bordered by MD-32, MD-198, and the Tipton Airfield (USACE 2007). The facility would include storage and maintenance space for a 120-bus operation and employ 200 people (Scott 2008).

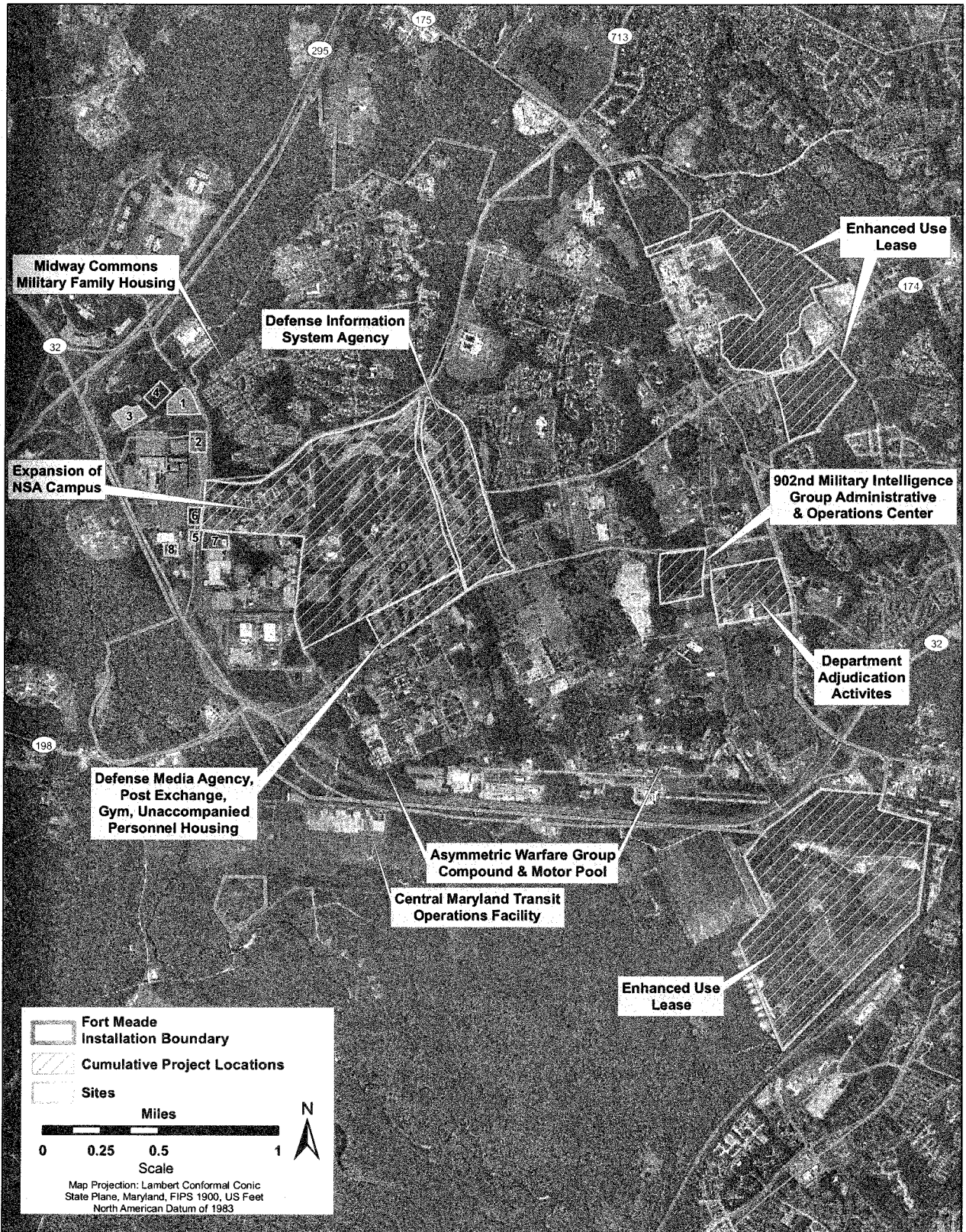


Figure 2.4-1. Locations of Other Actions under Consideration for Cumulative Impacts

Potential unexploded ordnance (UXO) issues at this site have yet to be completely assessed, and could cause the proposed facility to be located off the installation. This project is in the vicinity of the NSA campus and could help to alleviate existing parking problems at the NSA. It is currently in the planning stages and estimated to be complete by 2013 (MDOT 2008a). Therefore, this project is considered in the cumulative impacts analysis.

Energy Savings Performance Contract Program. Anne Arundel County has agreed to sell methane produced at Millersville Landfill to Fort Meade. The methane can be used to help meet increasing energy demands on Fort Meade and support the DISA realignment (USACE 2007). The additional methane acquired from the landfill will meet some energy requirements but not meet them entirely (Rupar 2006). Generally, this program would be expected to result in short-term adverse impacts from pipeline construction and long-term beneficial impacts from economical energy practices. However, no cumulative impacts would be expected because the natural gas would not be available for this Proposed Action, and construction activities would be too geographically removed to result in cumulative impacts. This project is not considered further in this EIS for potential cumulative impacts.

Other Actions Outside of NSA and Fort Meade

BGE Substation. BGE has plans to construct a substation south of MD-32 and west of the BW Parkway. This substation would supply power from the electrical grid to the proposed North Electrical Substation and other users in the surrounding area. Currently, this BGE Substation has not been sited, so it is unknown exactly where or how transmission lines would cross the BW Parkway and eventually enter the NSA campus. This project is in the early planning stages, but it is associated with the electrical needs of the Proposed Action and is in the vicinity of Fort Meade. Therefore, this project is considered generally in the cumulative impacts analysis. The Proposed Action, as described in **Section 2.2.5**, considers the installation of either overhead or underground power transmission lines entering the NSA campus along MD-32 and continuing to Site 1, Site 2, Site 3, or Site 4. All other activities associated with construction and utility line installation outside of the NSA campus are not considered a part of this Proposed Action but are included in the cumulative impacts analysis.

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SECTION 3

AFFECTED ENVIRONMENT

3. Affected Environment

All potentially relevant resource areas were initially considered for analysis in this EIS. In compliance with NEPA and CEQ guidelines, the following discussion of the affected environment focuses only on those resource areas considered potentially subject to impacts and with potentially significant environmental issues. The affected environment for this EIS includes land use, noise, air quality, geological resources, water resources, biological resources, cultural resources, infrastructure, transportation, hazardous materials and wastes, and socioeconomics and environmental justice.

One environmental resource area that is often selected for analysis in an EIS was deleted from detailed analysis in this EIS: human health and safety. Human health and safety addresses (1) workers' health and safety during demolition activities and facilities construction, and (2) public and worker safety during facility operations.

Construction site safety is largely a matter of adherence to regulatory requirements imposed for the benefit of employees and implementation of operational practices that reduce risks of illness, injury, death, and property damage. The health and safety of onsite military and civilian workers are safeguarded by DOD regulations designed to comply with standards issued by the Occupational Safety and Health Administration and USEPA. These standards specify the amount and type of training required for industrial workers, the use of protective equipment and clothing, engineering controls, and maximum exposure limits for workplace stressors. Construction workers would not be exposed to greater safety risks from the inherent dangers at construction sites. Contractors would be required to establish and maintain safety. Therefore, the proposed construction would not introduce new or unusual safety risks, assuming construction protocols are followed.

Industrial hygiene programs address exposure to hazardous materials, use of personal protective equipment, and availability of Material Safety Data Sheets. Industrial hygiene is the responsibility of contractors, as applicable. Contractor responsibilities are to review potentially hazardous workplace operations; monitor exposure to workplace chemical (e.g., asbestos, lead, hazardous material), physical (e.g., noise propagation), and biological (e.g., infectious waste) agents; recommend and evaluate controls (e.g., ventilation, respirators) for the protection of personnel; and ensure a medical surveillance program is in place to perform occupational health physicals for those workers subject to any accidental chemical exposures.

All of the proposed construction sites are on the NSA campus of Fort Meade. Exposure by the public to these sites would be limited since the general public cannot freely access the NSA campus or Fort Meade. During times of demolition and construction, construction crews would display necessary warnings of possible safety concerns within the site area. Public health and safety is not expected to be impacted by the Proposed Action. The proposed construction would not expose members of the general public to increased safety risks.

3.1 Land Use

3.1.1 Definition of the Resource

The term "land use" refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. In many cases, land use descriptions are codified in local zoning laws. There is, however, no nationally recognized convention or uniform terminology for describing land use categories. As a result, the meanings of various land use descriptions, "labels," and definitions vary among jurisdictions.

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

Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent parcels. Compatibility among land uses fosters the societal interest of realizing the best uses of real property. Tools supporting land use planning include written master plans/management plans and zoning regulations. In appropriate cases, the locations and extent of proposed actions need to be evaluated for their potential impacts on 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 matters such as existing land use at the project site, the types of land uses on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its "permanence."

3.1.2 Existing Conditions

Fort Meade is primarily in Anne Arundel County, Maryland, and encompasses 5,067 acres (USACE 2007). Fort Meade lies 16 miles northeast of Washington, D.C., and 12 miles southwest of the City of Baltimore (see **Figure 2.2-1**). Major transportation routes surrounding Fort Meade include the BW Parkway, MD-32, and Annapolis Road. Amtrak rail lines run along the southwest of the installation beyond the BW Parkway. See **Section 3.9** for a detailed discussion on transportation.

Land use surrounding Fort Meade consists primarily of developed property that supports a growing population. The populations of Severn, Odenton, and Jessup around Fort Meade have increased by 20 to 60 percent between 1990 and 2000 (U.S Census Bureau 2000). The Patuxent Research Refuge lies to the immediate southwest of the installation boundary and is operated by the U.S. Fish and Wildlife Service (USFWS). The Patuxent Research Refuge is approximately 1.5 miles from the NSA campus and is the only refuge in the United States that is solely designated for research. The U.S. Geological Survey currently conducts scientific studies at the Patuxent Research Refuge concerning sensitive species such as the endangered whooping crane. Off-installation land use surrounding the NSA campus consists of office space, retail, and transportation/utilities with open space to the east (AAC 2004).

The NSA campus is in the western portion of Fort Meade, adjacent to Jessup. Jessup is a semi-rural, low-density area with most land use designated as residential mixed use in the 1997 Anne Arundel County General Development Plan. A residential mixed-used site incorporates residential, retail, and office space (AAC 2004). Land to the south of the NSA campus is zoned residential. Land to the west is zoned industrial, and industrial heavy with open space farther west. The Oak Hill Youth Detention Center is to the west of Site 8 across from MD-32. To the north and east of the NSA campus, land is zoned residential (AAC 2004).

Maryland counties adopted Smart Growth initiatives in 1997 as guidelines for future development. Smart Growth initiatives call for mixed-use land development, walkable communities, preservation of open space, a variety of transportation options, and compact building design. In addition to Smart Growth initiatives adopted by Maryland counties, Fort Meade has developed a Comprehensive Expansion Master Plan to establish goals for future development conducive to high technology, intelligence, administrative, and training missions by current and future tenants (U.S. Army 2005). The Comprehensive Expansion Master Plan envisions Fort Meade as a Federal campus, built for long-term sustainability for the mission and the environment.

The NSA campus consists of administrative and operations buildings, utilities, parking, and open space land uses. The entire campus occupies approximately 630 acres of Fort Meade. Areas on Fort Meade surrounding the NSA campus include the Midway Common MFH neighborhood to the northeast, administrative facilities and barracks to the east, and open space to the southeast. Additionally, the National Vigilance Park and the National Cryptologic Museum are on NSA's exclusive use area, adjacent to the BW Parkway and northwest of the developed portions of the campus. The National Vigilance Park is a static aircraft display honoring the soldiers who performed airborne signals intelligence missions during the Cold War. The park is surrounded by forested land to the north and abuts Site 3 to the west. The National Cryptologic Museum contains artifacts relevant to the history and legacy of cryptology. The museum is north of Site 3, surrounded by forested land to the south and east and transportation corridor to the north and west. The public has access to both the National Vigilance Park and the National Cryptologic Museum. Table 3.1-1 shows the current and surrounding land use for each facility and parking alternative location.

Table 3.1-1. Summary of Land Use for Facility and Parking Alternatives

Site Number	Current Land Use	Surrounding Land Use	Alternative Being Considered in EIS
Site 1	Parking lot	Industrial, residential, transportation/utility	North Utility Plant
Site 2	Parking lot	Industrial, residential, transportation/utility	North Utility Plant
Site 3	Parking lot	Forest, transportation, National Vigilance Park and National Cryptologic Museum	North Utility Plant or three-story parking garage
Site 4	Forest Conservation Area	Forest, industrial	North Utility Plant (preferred alternative) or surface parking lot
Site 5	Utility yard	Industrial	South Generator Facility (preferred alternative)
Site 6	Forest	Parking, administrative, barracks	South Generator Facility or surface parking lot
Site 7	Former motor pool	Parking, administrative, barracks	South Generator Facility or Central Boiler Plant
Site 8	Utility yard	Industrial	Central Boiler Plant (preferred alternative)
Site 9	Parking lot	Parking, administrative, forested wetland	Three-story parking garage
Site 10	Parking lot	Parking, administrative	Three-story parking garage

3.2 Noise

3.2.1 Definition of the Resource

Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Human response to noise varies depending on the type and characteristics of the noise, distance between the noise source and the receptor, receptor

sensitivity, and time of day. Noise is often generated by activities that are part of everyday life, such as construction or vehicular traffic.

Sound varies by both intensity and frequency. Sound pressure level, described in decibels (dB), is used to quantify sound intensity. The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. The cycles from high to low pressure each second, also called Hertz, are used to quantify sound frequency. The human ear responds differently to different frequencies. A-weighting, referred to as dBA, approximates this frequency response to express accurately the perception of sound by humans. Sounds encountered in daily life and their approximate levels in dBA are provided in **Table 3.2-1**.

Table 3.2-1. Common Sounds and Their Levels

Outdoor	Sound level (dBA)
Heavy Truck	100
Noisy Office	80
Conversational Speech	60
Private Office	50
Quiet Residence	40
Recording Studio	30
Leaves Rustling	20

Source: Everest 2001

The sound pressure level noise metric describes steady noise levels although very few noises are, in fact, constant. Therefore the day-night average A-weighted sound level (DNL) noise metric has been developed. DNL is defined as the average sound energy in a 24-hour period with a 10-dB penalty added to the nighttime levels (10 p.m. to 7 a.m.). DNL is a useful descriptor for noise because (1) it averages ongoing yet intermittent noise, and (2) it measures total sound energy over a 24-hour period. In addition, the equivalent sound level (Leq) is often used to describe the overall noise environment. Leq is best described as the average sound level over a period of time. Being an average, it is the total energy of the noise, so it is easier to measure and a better indicator of the likelihood that a noise would generate complaints. Many noise standards and noise ordinances are based on Leq.

The Noise Control Act of 1972 (Public Law [P.L.] 92-574) directs Federal agencies to comply with applicable Federal, state, interstate, and local noise control regulations. In 1974, the USEPA provided information suggesting that continuous and long-term noise levels in excess of a DNL of 65 dBA are normally unacceptable for noise-sensitive land uses such as residences, schools, churches, and hospitals (USEPA 1974).

The State of Maryland's Environmental Noise Act of 1974 limits noise to the level that will protect health, general welfare, and property. The State of Maryland limits both the overall noise environment and the maximum allowable noise level for residential, industrial, and commercial areas. Construction and demolition activities are exempt from the limits outlined in **Tables 3.2-2** and **3.2-3** during the daytime hours. For construction and demolition activities, a person may not cause or permit noise levels that exceed 90 dBA during daytime hours (i.e., between 7:00 a.m. and 10:00 p.m.) or levels specified in **Table 3.2-3** during nighttime hours. In addition, while the regulations specify a maximum allowable noise level for pile-driving activities, that standard does not apply between the hours of 8:00 a.m. and

5:00 p.m. Emergency operations are completely exempt from the regulation (Code of Maryland Regulations [COMAR] 26.02.03).

Although Anne Arundel County maintains a general planning noise policy, the local code does not set strict noise levels or standards not to be exceeded. It does prohibit the establishment of a facility or activity that will generate noise levels that would interfere with the welfare of other nearby land uses. Both the Federal and the state noise regulations are more restrictive and concise than the local ordinance.

Table 3.2-2. State of Maryland Overall Environmental Noise Standards

Zoning District	Sound Level (dBA)	Measure
Industrial	70	Leq (24-hour)
Commercial	64	DNL
Residential	55	DNL

Source: COMAR 26.02.03

Table 3.2-3. Maximum Allowable Noise Levels for Receiving Land Use Categories

Day/Night	Maximum Allowable Noise Levels (dBA)		
	Industrial	Commercial	Residential
Day	75	67	65
Night	75	62	55

Source: COMAR 26.02.03.

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

3.2.2 Existing Conditions

NSA and Fort Meade are relatively quiet with no notable sources of noise. The NSA campus does not have an airfield, heavy industrial operations, or heavy weapons ranges. The main source of noise on Fort Meade is vehicular traffic. Other sources of noise on the NSA campus include the normal operation of heating, ventilation, and air conditioning (HVAC) systems; military unit physical training; lawn maintenance; snow removal; and construction activities. None of these operations or activities produces excessive levels of noise. Existing noise levels (Leq and DNL) were estimated for the facility and parking alternative sites and surrounding areas using the techniques specified in the *American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound Part 3: Short-term measurements with an observer present*, and are provided in **Table 3.2-4** (ANSI 2003).

Table 3.2-4. Estimated Existing Noise Levels

Site	Closest Noise-Sensitive Receptor			Predominant Source of Noise	Estimated Existing Sound Levels (dBA)		
	Distance	Direction	Type		DNL	Leq	Leq
						(Daytime)	(Nighttime)
1	500 feet (152 meters)	East	Residential (MFH)	BW Parkway	65	64	57
2	609 feet (187 meters)	Northeast	Residential (MFH)	BW Parkway	65	64	57
3	1,805 feet (550 meters)	East	Residential (MFH)	BW Parkway	65	64	57
4	1,024 feet (312 meters)	East	Residential (MFH)	BW Parkway	65	64	57
5	705 feet (215 meters)	Northeast	Residential (barracks)	Patuxent Freeway	60	58	52
6	371 feet (113 meters)	East	Residential (barracks)	Canine and Emory Roads	55	53	47
7	864 feet (263 meters)	North	Residential (barracks)	Canine and Emory Roads	55	53	47
8	900 feet (274 meters)	Northwest	Residential (barracks)	Emory Road	55	53	47
9	1,375 feet (419 meters)	Northeast	Residential (barracks)	Patuxent Freeway	60	58	52
10	920 feet (280 meters)	North	Residential (barracks)	Canine and Emory Roads	55	53	47

Source: ANSI 2003

3.3 Air Quality

3.3.1 Definition of the Resource

Air pollution is the presence in the outdoor atmosphere of one or more contaminants (e.g., dust, fumes, gas, mist, odor, smoke, or vapor) in quantities and of characteristics and duration such as to be injurious to human, plant, or animal life or to property, or to interfere unreasonably with the comfortable enjoyment of life and property. Air quality as a resource incorporates several components that describe the levels of overall air pollution within a region, sources of air emissions, and regulations governing air emissions. Below is a discussion of the regional climate, the National Ambient Air Quality Standards (NAAQS), local ambient air quality, and the State Implementation Plan (SIP) for the CAA for the Baltimore Region.

3.3.2 Existing Conditions

Regional Climate. The climate of the project area is affected by its proximity to the Chesapeake Bay, Delaware Bay, and Atlantic Ocean. The daily average high temperatures range from 40 degrees

Fahrenheit (°F) during January to 87 °F during July. Daily average low temperatures range from 23 °F during January to 67 °F during July. The record minimum and maximum temperatures are -7 °F and 105 °F, respectively. The annual average precipitation amounts to 41 inches and is uniformly distributed throughout the year. The annual average snowfall amounts to 20 inches. At least a trace of precipitation occurs on approximately one-third of the days during the year. Prevailing winds are from the west-northwest. Southwesterly winds are more frequent during the summer months and northwesterly winds are more frequent during the winter months. The region is frequently under the influence of the Bermuda High Pressure System during the summer months. Air quality problems in the region are typically associated with this summer phenomenon (USACE 2007).

National Ambient Air Quality Standards and Attainment Status. USEPA Region 3 and MDE regulate air quality in Maryland. The CAA (42 U.S.C. 7401–7671q), as amended, gives USEPA the responsibility to establish the primary and secondary NAAQS (40 CFR Part 50) that set acceptable concentration levels for seven criteria pollutants: particulate matter less than 10 microns (PM₁₀), PM_{2.5}, sulfur dioxide (SO₂), CO, NO_x, O₃, and lead. Short-term standards (i.e., 1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term standards (i.e., annual averages) have been established for pollutants contributing to chronic health effects. Each state has the authority to adopt standards stricter than those established under the Federal program; however, the State of Maryland accepts the Federal standards.

Federal regulations designate air quality control regions (AQCRs) that have concentrations of one or more of the criteria pollutants that exceed the NAAQS as *nonattainment* areas. Federal regulations designate AQCRs with levels below the NAAQS as *attainment* areas. *Maintenance* areas are AQCRs that have previously been designated nonattainment and have been redesignated to attainment for a probationary period through implementation of maintenance plans. According to the severity of the pollution problem, nonattainment areas can be categorized as marginal, moderate, serious, severe, or extreme. Anne Arundel County (and therefore NSA) is within the Baltimore Intrastate AQCR, or AQCR 115 (40 CFR 81.12). AQCR 115 is within the ozone transport region (OTR) that includes 11 states and Washington, D.C. USEPA has designated Anne Arundel County as the following (40 CFR 81.321):

- Moderate nonattainment for the 8-hour O₃ NAAQS
- Nonattainment for the PM_{2.5} NAAQS
- Attainment for all other criteria pollutants.

Local Ambient Air Quality. Existing ambient air quality conditions near NSA and Fort Meade can be estimated from measurements conducted at air quality monitoring stations close to the NSA campus. The most recent available data from MDE for nearby monitoring stations describe the existing ambient air quality conditions at NSA (see **Table 3.3-1**). With the exception of the 8-hour O₃ NAAQS, most recent air quality measurements are below the NAAQS (USEPA 2008b). The reported measurement of 0.113 ppm for the 8-hour level exceeds the NAAQS of 0.08 ppm. This exceedance is expected because the region has been designated an O₃ nonattainment area.

State Implementation Plan. The CAA, as amended in 1990, mandates that state agencies adopt SIPs that target the elimination or reduction of the severity and number of violations of the NAAQS. SIPs set forth policies to expeditiously achieve and maintain attainment of the NAAQS.

Table 3.3-1. 2007 Local Ambient Air Quality Monitoring Results

Pollutant	Primary NAAQS ^a	Secondary NAAQS ^a	Monitored Data ^b
CO			
8-Hour Maximum ^c (ppm)	9	None	3.1
1-Hour Maximum ^c (ppm)	35	None	19
NO₂			
Annual Arithmetic Mean (ppm)	0.053	0.053	0.019
O₃			
8-Hour Maximum ^d (ppm)	0.08	0.12	0.113
PM_{2.5}			
Annual Arithmetic Mean ^e (μg/m ³)	15	15	14.1
24-Hour Maximum ^f (μg/m ³)	65	65	46
PM₁₀			
Annual Arithmetic Mean ^g (μg/m ³)	50	50	29
24-Hour Maximum ^c (μg/m ³)	150	150	64
SO₂			
Annual Arithmetic Mean (ppm)	0.03	None	0.004
24-Hour Maximum ^c (ppm)	0.14	None	0.021

Notes:

^a Source: 40 CFR 50.1–50.12.^b Source: USEPA 2008b^c Not to be exceeded more than once per year.^d The 3-year average of the fourth highest daily maximum 8-hour average O₃ concentrations over each year must not exceed 0.08 ppm.^e The 3-year average of the weighted annual mean PM_{2.5} concentrations at each monitor within an area must not exceed 15.0 μg/m³.^f The 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor must not exceed 65 μg/m³.^g The 3-year average of the weighted annual mean PM₁₀ concentration at each monitor within an area must not exceed 50 μg/m³.

Because the Baltimore Metropolitan Area is a moderate nonattainment area for the 8-hour O₃ NAAQS and a nonattainment area for the PM_{2.5} NAAQS, the State of Maryland was required to develop SIPs that outline the actions that would be taken to achieve the 8-hour O₃ and the PM_{2.5} NAAQS. The current USEPA-approved regional air quality plans are the *Baltimore Nonattainment Area 8-Hour Ozone State Implementation Plan and Base Year Inventory* (MDE 2007) and the *Baltimore Nonattainment Area PM_{2.5} State Implementation Plan and Base Year Inventory* (MDE 2008a). Within these plans, MDE compiles a regional emissions inventory and sets regional emissions budgets. The current USEPA-approved SIP revisions for the region estimates of NO_x, VOCs, SO_x, and PM_{2.5} are outlined below (see Table 3.3-2).

Table 3.3-2. 2009 Projected Annual Emissions Inventory for the Baltimore Nonattainment Area

Emission Source	Criteria Pollutant or Precursor Emissions (tpy)			
	NO _x	VOC	PM _{2.5}	SO _x
Point	23,644	3,903	3,291	113,942
Quasi-Point	3,401	500	408	2,189
Area	7,862	37,537	9,196	5,396
Non-Road	11,696	12,566	1,403	413
On-Road	36,502	13,460	686	320
Biogenics	635	33,527	0	0
Total	83,742	101,496	14,987	122,261

Source: MDE 2007 and MDE 2008a

Since 1990, Maryland has developed a core of air quality regulations that have been approved by the USEPA. These approvals signified the development of the general requirements of the Maryland SIP. The Maryland program for regulation of air emissions affects industrial sources, commercial facilities, and residential development activities. Regulation occurs primarily through a process of reviewing engineering documents and other technical information, applying emissions standards and regulations in the issuance of permits, performing field inspections, and assisting industries in determining their compliance status with applicable requirements.

The CAA defines mandatory Class I Federal areas as certain national parks, wilderness areas, national memorial parks, and international parks that were in existence as of August 1977. There are no Class I areas in the State of Maryland. Class I areas closest to the proposed site include Shenandoah National Park and James River Face in Virginia, and Otter Creek and Dolly Sods wilderness areas in West Virginia (USEPA 2008c).

Clean Air Act Conformity. The 1990 amendments to the CAA require Federal agencies to ensure that their actions conform to the SIP in a nonattainment area. USEPA has developed two distinctive sets of conformity regulations: one for transportation projects and one for nontransportation projects. Nontransportation projects are governed by general conformity regulations (40 CFR Parts 6, 51, and 93), which are described in the final rule *Determining Conformity of General Federal Actions to State or Federal Implementation Plans* (published in the *Federal Register* on November 30, 1993). The General Conformity Rule requirements became effective January 31, 1994. Under Section 176(c) of CAA, the General Conformity Rule became applicable 1 year after the O₃ and the PM_{2.5} nonattainment designations became effective. Maryland has adopted the Federal conformity regulations by reference (COMAR 26.11.26.03). The Proposed Action is a nontransportation project within a nonattainment area. Therefore, a general conformity analysis is required with respect to the 8-hour O₃ and PM_{2.5} NAAQS.

The General Conformity Rule specifies threshold emissions levels by pollutant to determine the applicability of conformity requirements for a project (see Table 3.3-3). For an area in moderate nonattainment for the 8-hour O₃ NAAQS within the OTR, the applicability criterion is 100 tons per year (tpy) for NO_x and 50 tpy for VOCs (40 CFR 93.153). For an area in nonattainment for the PM_{2.5} NAAQS, the applicability criterion is 100 tpy for PM_{2.5}, NO_x, and SO₂ (71 FR 40420). VOCs and ammonia were also identified as potential PM_{2.5} precursors. However, neither Maryland nor USEPA has

Table 3.3-3. Applicability Thresholds for Nonattainment Areas

Criteria pollutants	Applicability threshold (tpy)
O₃ (NO_x or VOCs)	
Serious Nonattainment Areas	50
Severe Nonattainment Areas	25
Extreme Nonattainment Areas	10
Other O ₃ Nonattainment Areas outside an OTR	100
Marginal and Moderate Nonattainment Areas Inside an OTR	
VOC	50
NO _x	100
CO	100
All Nonattainment Areas	100
SO₂ or NO_x	
All Nonattainment Areas	100
PM₁₀	
Moderate Nonattainment Areas	100
Serious Nonattainment Areas	70
PM_{2.5} (PM_{2.5}, NO_x)	
All Nonattainment Areas	100
Lead	
All Nonattainment Areas	25

Sources: 40 CFR 93.153 and 71 FR 40420

found that ammonia contributes to PM_{2.5} problems in AQCR 115 or other downwind areas. Therefore, ammonia was not carried forward for detailed analysis, while the VOC emissions are addressed as a precursor to O₃.

Mobile Sources. Mobile sources of concern include primarily automobiles and vehicular traffic. The primary air pollutants from mobile sources are CO, NO_x, and VOCs. Lead emissions from mobile sources have declined in recent years through the increased use of unleaded gasoline and are extremely small. Potential SO₂ and particulate emissions from mobile sources are small compared to emissions from point sources, such as power plants and industrial facilities. Air quality impacts from traffic are generally evaluated on two scales.

- **Mesoscale**—Mesoscale analysis is performed for the entire AQCR by the MDE. Potential emissions increases from additional vehicle miles traveled resulting from an action could affect regional O₃ or PM_{2.5} levels. However, because these are problems of regional concern and subject to air transport phenomena under different weather conditions, regional impacts are

generally evaluated using regional airshed models. Mesoscale analysis is generally not conducted on a project-specific basis and is not necessary for this EIS.

- **Microscale**—Microscale analysis is performed to identify localized hot spots of criteria pollutants. CO is a site-specific pollutant with higher concentrations found adjacent to roadways and signalized intersections. Microscale analysis is often conducted on a project-specific basis in regions where CO is of particular concern. Anne Arundel County, and therefore NSA and Fort Meade, is neither a nonattainment nor a maintenance area for CO; therefore, microscale analysis is not necessary for this EIS.

Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the CAA. The MSATs are compounds emitted from highway vehicles and nonroad equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. As with particulate matter, traffic from these intersections is not anticipated to be an air quality concern for MSAT because the intersections affected are primarily secondary arterial roads. Quantitative procedures to conduct MSAT analysis have not yet been standardized and are not standard practice for nontransportation projects on secondary arterials; therefore, such analysis is not included in this EIS (USDOT 2006a). In addition, quantitative procedures to address PM_{2.5} hot spot analysis have not yet been standardized, and it is not standard practice to conduct such analyses for nontransportation projects. Therefore, such analysis is not included in this EIS (USEPA 2008d).

Existing Emissions. Title V of the CAA requires states to establish an air operating permit program. The requirements of Title V are outlined in the Federal regulations in 40 CFR Part 70 and in the MDE's regulations at COMAR 26.11.03. The permits required by these regulations are often referred to as Title V or Part 70 permits. Based on its PTE, NSA is a major source of air emissions for NO_x. Stationary sources of air emissions at NSA include boilers, generators, incinerators, and classified material reclamation furnaces. An NSA campuswide Title V permit (No. 24-003-00317) was issued on April 1, 2005 (NSA 2005). As part of the Title V permit requirements, NSA must submit a comprehensive emissions statement annually. **Table 3.3-4** summarizes the 2007 NSA campus emissions from significant stationary sources.

Table 3.3-4. 2007 Emissions from Significant Stationary Sources at NSA (tpy)

SO _x	CO	PM ₁₀	PM _{2.5}	NO _x	VOC	Total HAP
9.31	4.06	0.88	0.01	47.60	3.05	0.67

Source: NSA 2007

Note: HAP = hazardous air pollutant

Permitting Requirements. MDE oversees programs for permitting the construction and operation of new or modified stationary source air emissions in Maryland. Maryland air permitting is required for many industries and facilities that emit regulated pollutants. Based on the size of the emissions units and type of pollutants emitted (criteria pollutants or hazardous air pollutants [HAPs]), MDE sets permit rules and standards for emissions sources.

The air quality permitting process begins with the application for a construction permit. The North Utility Plant, South Generator Facility, and the Central Boiler Plant would require permits to construct in one form or another. There are three types of construction permits available through the MDE for the construction and temporary operation of new emissions sources: Major New or Modified Source Construction Permits in Nonattainment Areas (Nonattainment New Source Review [NNSR]); Prevention

of Significant Deterioration (PSD) permits in Attainment Areas; and Minor New Source Construction Permits (Minor New Source Review [NSR]).

NNSR and PSD permits are both part of the MDE Major NSR program. Thresholds that determine the type of construction permit that might be required depend on both the quantity and type of emissions. Thresholds requiring either an NNSR or a PSD permit for a modification to an existing source in Anne Arundel County are outlined in **Table 3.3-5**. PSD review and permitting is required for sources emitting 100 tpy of any regulated pollutant for any of 26 named PSD source categories. One of the named source categories is fossil fuel boilers that singly or in combination at a single facility total more than 250 MMBtu/hr heat input (COMAR 26.11.01.01B(37)). For all other sources not in the 26 named source categories, PSD review is required if the source emits 250 tpy or more of any regulated pollutant.

Table 3.3-5. Major Modification Thresholds of Criteria Pollutants within Anne Arundel County

Pollutant	New major source (tpy)		Major modification to an existing source ^a (tpy)	
	PSD ^b	NNSR	PSD	NNSR
CO	250 (100)		100	
NO _x		25		25
SO ₂		100		40
PM	250 (100)		25	
PM ₁₀	250 (100)		15	
PM _{2.5}		100		10
VOCs		25		25

Source: COMAR 26.11.17.01 and 40 CFR Part 52

Notes:

^a Represents the project emission increase considered "significant."

^b PSD review and permitting is required for sources emitting 100 tpy of any regulated pollutant for fossil fuel boilers (or combination of them) totaling more than 250 MMBtu/hr heat input (COMAR 26.11.01.01B (37)).

Nonattainment New Source Review. Major New or Modified Source Construction Permits in Nonattainment Areas (NNSR Permit) are required for any major new sources or major modifications to existing sources intended to be constructed in an area designated as nonattainment. Currently, when undergoing a physical or operational change, a source determines major NSR applicability through a two-step analysis. First, determine if the increased emissions from a particular proposed project alone are above the thresholds. If the emissions increase is below the threshold, a NNSR permit would not be required. If the emissions increase is above the threshold, then determine through a procedure called "netting" if the project's net emissions plus all contemporaneous increases and decreases in the previous 5 years at the source are above the thresholds (COMAR 26.11.17.01 B (16) and COMAR 26.11.17.02 F (1)). If this determination results in an increase that is lower than the threshold, a NNSR permit would not be required.

NNSR permits are legal documents that specify what construction is allowed; what emissions limits must not be exceeded; reporting, recordkeeping, and monitoring requirements; and often how the source can be operated. The NNSR permitting process typically takes 18 to 24 months. Specifically, typical requirements for a NNSR permit can include the following:

- Best Available Control Technology (BACT) review for qualifying attainment criteria pollutants
- LAER review for qualifying nonattainment pollutants (i.e., VOCs, NO_x and PM_{2.5})
- Maximum Achievable Control Technology (MACT) review for HAPs
- Air quality analysis (predictive air dispersion modeling)
- Acquiring emissions offsets at a one to three or greater ratio for all contemporaneous emissions increases that have occurred or are expected to occur
- A public involvement process.

Prevention of Significant Deterioration. 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 (all but O₃ and PM_{2.5}). The PSD permitting process typically takes 18 to 24 months to complete. Sources subject to PSD are typically required to complete the following:

- BACT review for criteria pollutants
- Predictive modeling of emissions from proposed and existing sources
- Public involvement.

Minor New Source Review. A Minor New, Modified, and certain Major Source Construction Permit (or Minor NSR permit) would be required to construct minor new sources, minor modifications of existing sources, and major sources not subject to NNSR or PSD permit requirements. The Minor NSR permitting process typically takes 4 to 5 months to complete. Sources subject to Minor NSR could be required to complete the following:

- BACT review for each criteria pollutant
- MACT review for regulated HAPs and designated categories
- Air quality analysis (predictive air dispersion modeling), upon request by MDE
- Establish procedures for measuring and recording emissions and process rates.

Maryland Public Service Commission. In Maryland, agencies constructing an electric generating station, including emergency power, must apply for and obtain either (1) a Certificate of Public Convenience and Necessity (CPCN) for larger power generation projects, or (2) a CPCN waiver for smaller power generation projects that meet certain applicability thresholds established by the Public Service Commission. Waivers are available for generating stations designed to generate less than 70 MW of electricity, or for stations where no electricity would be exported offsite for sale to the electric distribution system.

Operation Permits. Under MDE's Title V Facility Permit regulations (COMAR 26.11.02 and 26.11.03), a Title V Significant Permit Modification is required for facilities whose emissions increases exceed the emissions thresholds outlined in **Table 3.3-5**. In addition, a Significant Permit Modification would be required if it became necessary to establish federally enforceable limitations to reduce potential emissions below the thresholds. A minor permit modification would be required if emissions were below the thresholds and a federally enforceable limit was not necessary. Submission of an application for these permit modifications would be required within one year of the first operation of a new emissions source.

Because this EIS has several separate project components that are being evaluated, it is important to assess how they can be combined or aggregated for permitting. Project emissions are aggregated from projects that are technically or economically dependent. A technically dependent project is incapable of

being performed as planned in the absence of the other project. Economically dependent projects require each other for their economic viability. The North Utility Plant, South Generator Facility, and the Central Boiler Plant are all both technically and economically independent of each other. Therefore, their emissions would not be aggregated for permitting purposes.

In addition to the permitting requirements to construct and operate new or modified emissions sources, NSPS and National Emission Standards for Hazardous Air Pollutants (NESHAPs) set emissions control standards for categories of new stationary emissions sources of both criteria pollutants and HAPs.

The NSPS process requires USEPA to list categories of stationary sources that cause or contribute to air pollution that might reasonably be anticipated to endanger public health or welfare. The NSPS program sets uniform emissions limitations for many industrial sources. As of July 11, 2005, stationary diesel engines (such as back-up generators) are subject to NSPS. Applicability of the NSPS is based on engine size and date of purchase and construction. Limitations on emissions come into effect using a tiered approach over time, Tier 1 being the least restrictive and Tier 4 being the most. In addition, boilers with a maximum heat input of 10 MMBtu/hr or greater would be required to comply with NSPS.

The CAA Amendments of 1990, under revisions to Section 112, required USEPA to list and promulgate NESHAPs to reduce the emissions of HAPs, such as formaldehyde, benzene, xylene, and toluene from categories of major and area sources (40 CFR Part 63). New stationary sources whose PTE HAPs exceeds either 10 tpy of a single HAP, or 25 tpy of all regulated HAPs, would be subject to MACT requirements.

The construction projects would be accomplished in full compliance with Maryland regulatory requirements, through the use of compliant practices or products. These requirements appear in COMAR Title 26, Subtitle 11, *Air Quality*. They include the following:

- Particulate Matter from Materials Handling and Construction (COMAR 26.11.06.03.D)
- Open Fires (COMAR 26.11.06)
- Control of Emissions of Volatile Organic Compounds from Architectural Coatings (COMAR 26.11.33)
- Control of Emissions of Volatile Organic Compounds from Consumer Products (COMAR 26.11.32)
- Control of Emissions of Volatile Organic Compounds from Adhesives and Sealants (COMAR 26.11.35).

In addition to the above stated regulations, on October 24, 2008 the MDE has proposed a new regulation under COMAR 26.11.09 Control of Fuel Burning Equipment titled "Stationary Internal Combustion Engines and Certain Fuel-Burning Installations for Emergency Generators". The regulation establishes emission requirements for new emergency generators. This listing is not all inclusive; NSA and any contractors would comply with all applicable Maryland air pollution control regulations.

3.4 Geological Resources

3.4.1 Definition of the Resource

Geology and soils resources include the surface and subsurface materials of the earth. Within a given physiographic province, these resources typically are described in terms of topography, soils, geology, minerals, and paleontology, where applicable.

Topography is defined as the relative positions and elevations of the natural or human-made features of an area that describe the configuration of its surface. Regional topography is influenced by many factors, including human activity, seismic activity of the underlying geological material, climatic conditions, and erosion. Information describing topography typically encompasses surface elevations, slope, and physiographic features (i.e., mountains, ravines, or depressions).

Site-specific geological resources typically consist of surface and subsurface materials and their inherent properties. Principal factors influencing the ability of geological resources to support structural development are seismic properties (i.e., potential for subsurface shifting, faulting, or crustal disturbance), topography, and soil stability. Soils are the unconsolidated materials overlying bedrock or other parent material. They develop from weathering processes on mineral and organic materials and are typically described in terms of their landscape position, slope, and physical and chemical characteristics. Soil types differ in structure, elasticity, strength, shrink-swell potential, drainage characteristics, and erosion potential, which can affect their ability to support certain applications or uses. In appropriate cases, soil properties must be examined for compatibility with particular construction activities or types of land use.

Prime and unique farmland is protected under the Farmland Protection Policy Act (FPPA) of 1981. Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. Unique farmland is defined as land other than prime farmland that is used for the production of specific high-value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality or high yields of a specific crop when treated and managed according to acceptable farming methods. Soil qualities, growing season, and moisture supply are needed for well-managed soil to produce a sustained high yield of crops in an economic manner. The land could be cropland, pasture, rangeland, or other land, but not urban built-up land or water. The intent of the FPPA is to minimize the extent that Federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses. The FPPA also ensures that Federal programs are administered in a manner that, to the extent practicable, will be compatible with private, state, and local government programs and policies to protect farmland.

The Natural Resources Conservation Service (NRCS) is responsible for overseeing compliance with the FPPA and has developed the rules and regulations for implementation of the FPPA (7 CFR Part 658). The FPPA applies to activities on prime and unique farmland, as well as farmland of statewide and local importance (see 7 CFR Part 658, July 5, 1984). Determination of whether an area is considered prime or unique farmland and potential impacts associated with a project is based on preparation of the Farmland Conversion Impact Rating Form AD-1006 for areas where prime farmland soils occur and by applying criteria established at Section 658.5 of the FPPA (7 CFR Part 658).

3.4.2 Existing Conditions

Physiography and Topography. Fort Meade is in the Atlantic Coastal Plain physiographic province, characterized by relatively flat topography that gently slopes towards the east. The lowest elevation on the installation is less than 100 feet above mean sea level (amsl) in the southwestern corner along Little Patuxent River. The highest elevation is recorded at 300 feet amsl in the northwestern corner of the installation. Minor variation in microtopography occurs throughout Fort Meade and is attributable to disturbance caused by development (USACE 2005).

Geology. The geologic history of the eastern United States is characterized by mountain-building processes and the cyclical opening and closing of a proto-Atlantic Ocean (USGS 2000). During the mountain building event called the Alleghenian Orogeny, shallow water marine sediments were uplifted, forming the Blue Ridge-South Mountain anticlinorium. During the Cenozoic Era (1.65 million years

before present to recent), the Blue Ridge-South Mountain anticlinorium began to erode, depositing Atlantic Coastal Plain sediments. Unconsolidated sand, clay, and silt compose the Atlantic Coastal Plain physiographic province. These sediments thicken towards the southeast, forming a wedge. Precambrian crystalline rocks underlie the sediments, and are exposed along the boundary between the Coastal Plain and Piedmont provinces several miles to the west of the installation. Slopes at Fort Meade are generally less than 10 percent grade (USACE 2007). Sediments underlying Fort Meade include interbedded, poorly sorted sand and gravel deposits up to 90 feet thick from the Pleistocene Epoch (100,000 to 1.65 million years before present); and 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) of the Potomac Group, which were deposited during the Cretaceous period (138 to 63 million years before present) (USACE 2004, MGS 2000). Metamorphic Precambrian bedrock underlies the Patuxent Formation at a depth of 600 feet amsl (USACE 2005). The Arundel Clay is the confining layer between the Lower Patapsco Aquifer and the Patuxent Aquifer, in the Patapsco and Patuxent Formations, respectively. This clay is composed of red, gray, and brown grains with some ironstone nodules and plant fragments. Streams and wetlands are underlain by alluvium such as interbedded sand, silt, and clay with minor gravel inclusions. See **Section 3.5** for a discussion on hydrology.

Soils. Thirty-nine distinct soil series are mapped at Fort Meade, but the primary soil series is the Evesboro complex. The Evesboro complex composes 42 percent of the installation and is a deep, well- to excessively drained sandy loam, which has only been slightly modified from the geologic parent material (U.S. Army 2007). Soils classified as Urban Land have also been mapped at Fort Meade. This classification describes soil that has been modified and disturbed by earth-moving equipment. Soil surrounding pavement and buildings is classified as Urban Land.

Urban Land, the Downer-Hammonton Urban Land Complex, Falsington sandy loam, Chillum loam, and the Evesboro and Galestown complex have been mapped at Sites 1 through 10 (NRCS 2008). About 90 percent of Sites 1 through 10 is mapped as Urban Land or the Downer-Hammonton Urban Land Complex; both have been previously disturbed. The Urban Land mapping unit has a slope of 0 to 5 percent. The Downer-Hammonton Urban Land Complex has a slope of 0 to 5 percent and is well-drained. Evesboro and Galestown complex soils are only present in approximately 10 percent of Site 10. The Evesboro and Galestown complex is mapped in the northeastern corner of Site 10. The mapping unit consists of sandy soils that are excessively drained and occur on slopes of 5 to 10 percent. Site 4 is the only site devoid of disturbed soils; the Chillum loam and Falsington sandy loam have been mapped at Site 4. The Chillum loam is well-drained and the Falsington sandy loam is poorly drained. Both the Chillum and the Falsington soils mapped on Site 4 occur on slopes of less than 6 percent.

3.5 Water Resources

3.5.1 Definition of the Resource

Groundwater. Groundwater consists of subsurface hydrologic resources. It is an essential resource that functions to recharge surface water and is used for drinking, irrigation, and industrial processes. Groundwater typically can be described in terms of depth from the surface, aquifer or well capacity, water quality, recharge rate, and surrounding geologic formations.

Hydrology, Surface Water, and Waters of the United States. Hydrology consists of the redistribution of water through the processes of evapotranspiration, surface runoff, and subsurface flow. Hydrology results primarily from temperature and total precipitation that determine evapotranspiration rates, topography that determines rate and direction of surface flow, and soil properties that determine rate of subsurface flow and recharge to the groundwater reservoir.

Surface water resources generally consist of wetlands, lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale.

Waters of the United States are defined within the Clean Water Act (CWA), as amended, and jurisdiction is addressed by the USEPA and the USACE. These agencies assert jurisdiction over (1) traditional navigable waters, (2) wetlands adjacent to navigable waters, (3) nonnavigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months), and (4) wetlands that directly abut such tributaries.

A water body can be deemed impaired if water quality analyses conclude that exceedances of water quality standards, established by the CWA, occur. The CWA requires that Maryland establish a Section 303(d) list to identify impaired waters and establish Total Maximum Daily Loads (TMDLs) for the source causing the impairment. A TMDL is the maximum amount of a substance that can be assimilated by a water body without causing impairment.

Maryland's Coastal Zone Management Program (CZMP) is in effect for Fort Meade. MDE regulates activities proposed within Maryland's Coastal Management Zone through Federal consistency requirements. For activities impacting coastal and marine resources such as wetlands, a Coastal Zone Consistency Determination is issued as part of Maryland's environmental permitting process. Tributaries running through Fort Meade eventually empty into the Chesapeake Bay and therefore are applicable for protection under CZMP.

Wetlands have been defined by agencies responsible for their management. The term "wetland" used herein, is defined using USACE conventions. The USACE has jurisdiction to protect wetlands under Section 404 of the CWA using the following definition:

... areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3[b]). Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands have three diagnostic characteristics that include: (1) over 50 percent of the dominant species present must be classified as obligate, facultative wetland, or facultative, (2) the soils must be classified as hydric, and (3) the area is either permanently or seasonally inundated, or saturated to the surface at some time during the growing season of the prevalent vegetation (USACE 1987).

EO 11990, *Protection of Wetlands*, requires that Federal agencies provide leadership and take actions to minimize or avoid the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland.

MDE is the state agency largely responsible for administering Maryland's environmental laws, regulations, and environmental permits related to wetlands, water withdrawal, discharges, storm water, and water and sewage treatment. The mission of the MDE is to protect the state's air, land, and water from pollution and to provide for the health and safety of its citizens through a cleaner environment (MDE undated).

Freshwater wetlands in Maryland are protected by the Nontidal Wetlands Protection Program, which sets a state goal of no overall net-loss of nontidal wetlands acreage and functions. Activities in nontidal wetlands require a nontidal wetland permit or a letter of exemption, unless the activity is exempt by regulation. Any activity that involves excavating, filling, changing drainage patterns, disturbing the water level or water table, or grading and removing vegetation in a nontidal wetland or within a 25-foot buffer requires a permit from the MDE's Water Management Administration (MDE undated).

Floodplains. Floodplains are areas of low-level ground present along rivers, stream channels, or coastal waters. The living and nonliving parts of natural floodplains interact with each other to create dynamic systems in which each component helps to maintain the characteristics of the environment that supports it. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, nutrient cycling, water quality maintenance, and a diversity of plants and animals. Floodplains provide a broad area to spread out and temporarily store floodwaters. This reduces flood peaks and velocities and the potential for erosion. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body (FEMA 1986).

Floodplains are subject to periodic or infrequent inundation due to rain or melting snow. Risk of flooding typically hinges on local topography, the frequency of precipitation events, and the size of the watershed above the floodplain. Flood potential is evaluated by the Federal Emergency Management Agency (FEMA), which defines the 100-year floodplain. The 100-year floodplain is the area that has a 1 percent chance of inundation by a flood event in a given year. Certain facilities inherently pose too great a risk to be in either the 100- or 500-year floodplain, such as hospitals, schools, or storage buildings for irreplaceable records. Federal, state, and local regulations often limit floodplain development to passive uses, such as recreational and preservation activities, to reduce the risks to human health and safety.

3.5.2 Existing Conditions

Groundwater. Three aquifers underlie Fort Meade. Flowing to the south-southeast these aquifers are the Upper Patapsco, Lower Patapsco, and the Patuxent. The aquifers are composed of unconsolidated silt, sand, and gravel. The Upper Patapsco Aquifer is unconfined and considered to be the water table aquifer. The confining layer between the Upper and Lower Patapsco aquifers is composed of unnamed silts and clays of the upper Chesapeake Formation (Klohe and Kay 2007). The Arundel Clay is the confining layer between the Lower Patapsco Aquifer and the Patuxent Aquifer. The Patuxent Aquifer is confined above by the Arundel Clay and below by crystalline bedrock of the Baltimore Mafic Complex. The Patuxent Aquifer is 200 to 400 feet thick and is the deepest of the three aquifers (U.S. Army 2007).

Drinking water for the installation is provided by six groundwater wells installed in the Patuxent Aquifer in the southern portion of Fort Meade. Well yield is dependent upon the thickness and permeability of sediments. Where strata are thick and permeable, well fields can produce up to a million gallons per day (mgd) of water (U.S. Army 2007). Average depth to groundwater in the six wells ranges from 80 to 120 feet below ground surface (INSCOM 2007). Fort Meade averages about 3.3 mgd withdrawn from wells.

Various VOCs, pesticides, and explosive compounds have been detected at Fort Meade in groundwater from the Upper and Lower Patapsco aquifers (U.S. Army 2007).

Hydrology, Surface Water, and Waters of the United States. Fort Meade is primarily within the Little Patuxent River Watershed of the Patuxent River Basin, which drains 65,947 acres. The northeastern portion of the installation is within the Severn Run Watershed. The Little Patuxent River originates north of MD-70 in Howard County, Maryland, flowing through the City of Columbia and crossing MD-32 where the Middle Patuxent River joins the Little Patuxent River at the Town of Savage. The Little Patuxent River flows through the southwestern corner of Fort Meade, and is 49 to 75 feet wide and 2 to

8 feet deep (U.S. Army 2007). The velocity of the Little Patuxent River slows at Fort Meade, allowing formation of riffles and pools. The Little Patuxent River flows through Fort Meade before emptying into the Chesapeake Bay.

Approximately 38,027 linear feet of perennial streams and many intermittent streams are present at Fort Meade, with the main streams flowing to the south and southwest (U.S. Army 2007, INSCOM 2007). **Figure 3.5-1** shows the water bodies that occur on Fort Meade. The three tributaries on Fort Meade to the Little Patuxent River are Midway Branch, Franklin Branch, and an unnamed branch composed of two smaller branches. Midway Branch flows to the south through the central section of Fort Meade, draining approximately 1,461 acres of the central and western portions of the installation. Franklin Branch flows intermittently to the south in the eastern portion of the installation, draining 1,176 acres of Fort Meade (U.S. Army 2007). Midway Branch and Franklin Branch converge at the southern boundary of the installation, forming Rogue Harbor Branch, which flows into Lake Allen beyond the installation boundaries. The unnamed branch is the southernmost branch of the Little Patuxent River at Fort Meade. The Chesapeake Bay, the largest estuary in the United States, lies approximately 12 miles east of the installation.

In addition, several smaller water bodies exist on the installation (see **Figure 3.5-1**). A small pond is located along the installation's eastern boundary at the end of 20th Street, and another small pond is adjacent to Range Road in the southeastern corner of Fort Meade. Kelly Pool is an 8.0-acre man-made reservoir in the southeastern portion of the installation that is also used for outdoor activities (USACE 2007). Lake Allen, in eastern Fort Meade, is a 19.7-acre man-made lake used for storm water management, flood control, and some recreation (INSCOM 2007). Numerous swales, ditches, streams, and brooks also traverse Fort Meade, and flow into Kelly Pool, Lake Allen, or the Little Patuxent River.

Figure 3.5-2 shows the surface water bodies in the vicinity of the alternative location and parking garage sites. Site 1 is adjacent to a permanently flooded storm water pond, which is near the northwestern corner of the site. An unnamed perennial stream flows along the southeastern boundary of Site 4 and the forest stand; this stream also flows past the southern boundary of Site 3 and continues on to the southwest (DOD 1995). There is a palustrine-forested wetland bordering the southeastern edge of Site 9 and the southwestern corner of Site 10. There is also a wetland along the banks of the Little Patuxent River, more than 1,500 feet to the southwest of Site 8. No surface water features are near Sites 2, 5, 7, or 8.

A formal delineation of wetlands and waters of the United States was conducted on December 2, 2008, on Site 4 and along the unnamed perennial stream between the upstream end of the permanently flooded storm water pond near the northwestern corner of Site 1 and the existing stream crossing and entrance from Canine Road to the parking lot associated with Site 3. In addition, any wetlands in proximity to the existing staging and equipment storage area adjacent to the northeastern corner of Site 4 were also delineated. All wetlands and other waters of the United States within the study area were delineated. Determination of the extent of jurisdictional wetlands and other waters of the United States in the assessment areas was based on the application of protocols and procedures established in the *USACE Wetlands Delineation Manual*, Technical Report Y-87-1 (USACE 1987).

Two wetlands or waters of the United States were identified and delineated within the assessment area. **Figure 3.5-3** shows the locations and boundaries of the delineated areas. Wetland-1 includes the permanently flooded open water storm water pond adjacent to the northeast corner of Site 4 and the unnamed perennial stream that flows to the southwest just outside of the southeastern boundary of Site 4. The storm water pond component of Wetland-1 encompasses 0.639 acres and the stream component includes 0.303 acres within the assessment area. The storm water pond is characterized by an excavated open water pond bordered by abrupt steep banks. The pond receives flows from a culvert at its

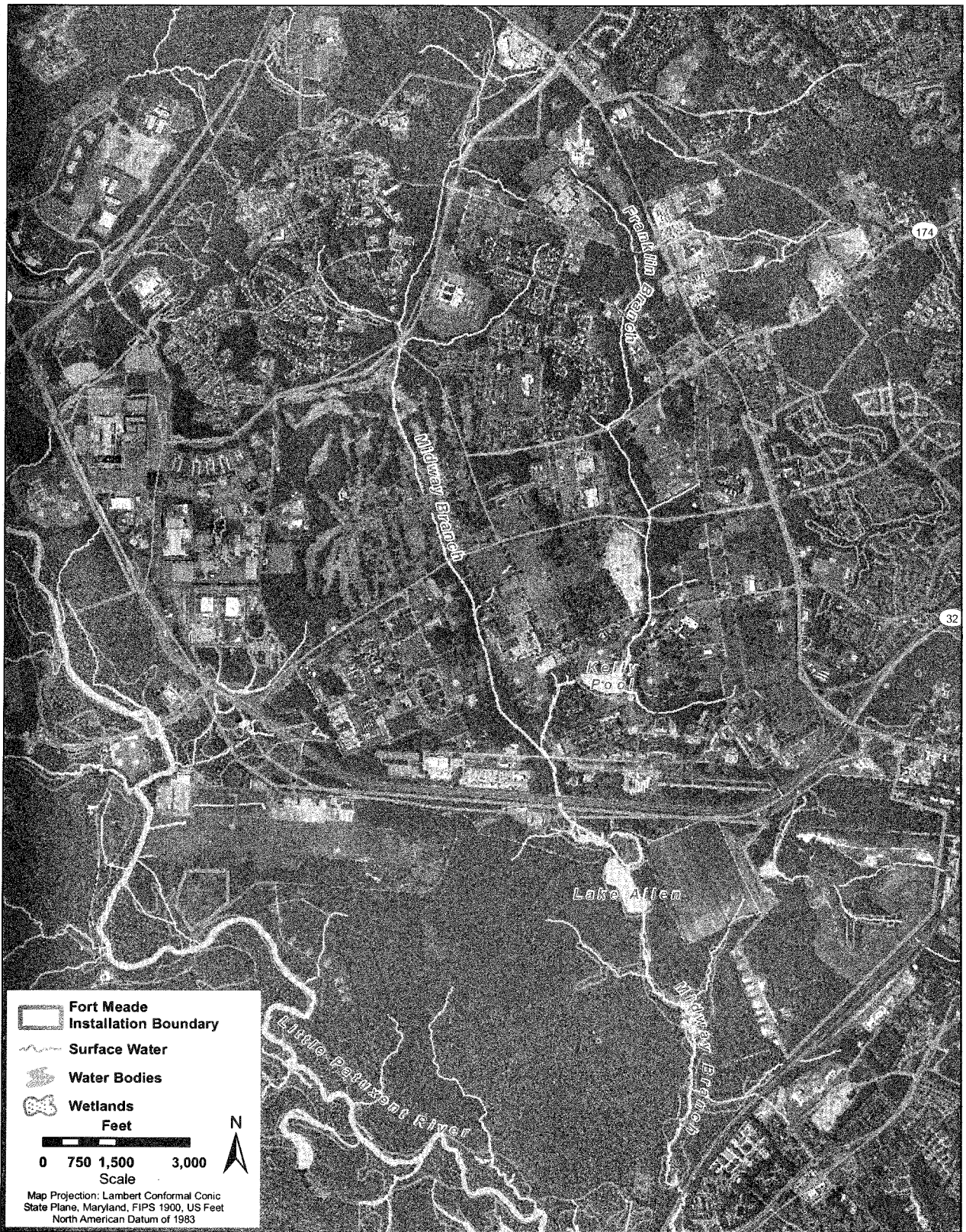
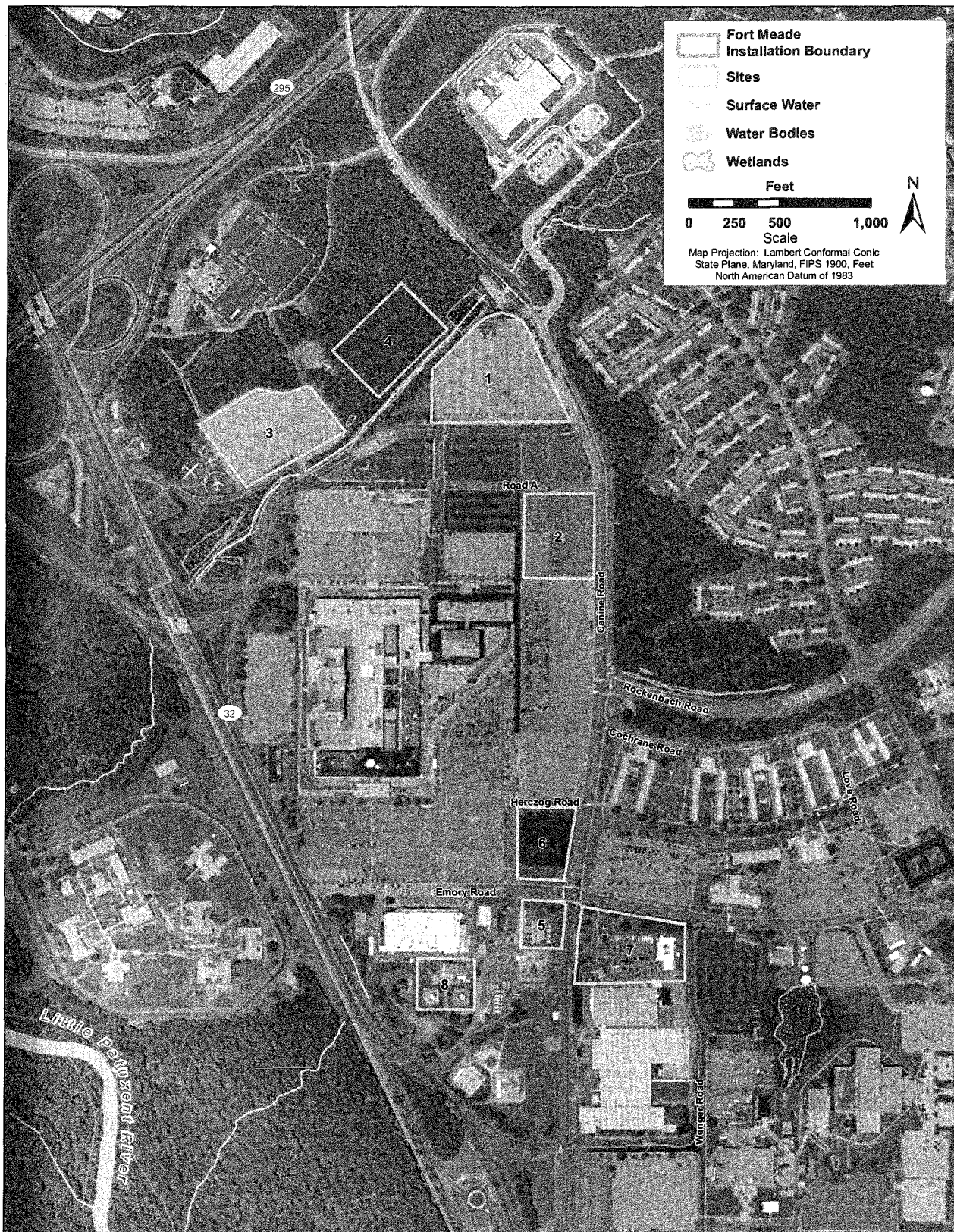
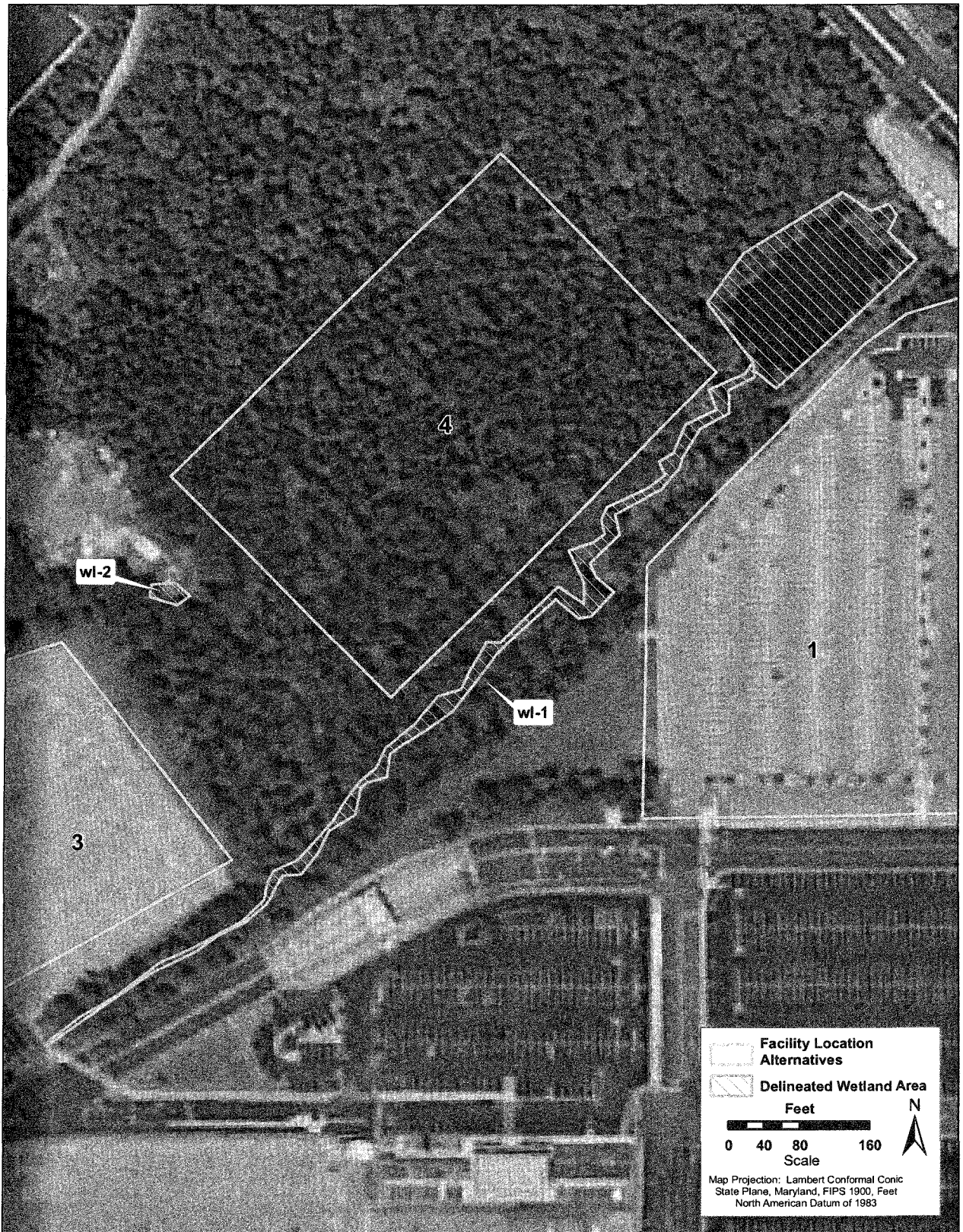


Figure 3.5-1. Surface Water Bodies and Wetlands on Fort Meade



Source of Aerial Photography: NAIP 2007; Location Alternatives: e*M Inc 2007; Water and Wetland Features: Fort Meade 2007

Figure 3.5-2. Surface Water Bodies and Wetlands in Vicinity of Facility and Parking Alternative Sites



Source of Aerial Photography: NAIP 2007; Location Alternatives: e*M Inc 2007, Wetland Boundary Areas: e*M Inc 2008.

Figure 3.5-3. Wetlands and Waters of the United States Occurring on and Adjacent to Site 4 (based on the December 2, 2008 Delineation)

northeastern end and discharges to the stream component of Wetland-1 at its southwestern corner. Minor emergent vegetation characterized primarily by soft rush (*Juncus effuses*) occurs in the northeastern end of the pond adjacent to the inlet culvert. Vegetation on the banks of the pond is characterized by sweet gum (*Liquidambar styraciflua*), black cherry (*Prunus serotina*), and river birch (*Betula nigra*).

The stream component of Wetland-1 between the storm water pond and the parking lot associated with Site 3 is characterized by steep banks and flows through minor meanders in forested habitat. Vegetation occurring on the banks of the stream in this section of Wetland-1 is characterized by sweet gum, tulip poplar (*Liriodendron tulipifera*), pin oak (*Quercus palustris*), and black cherry, with southern arrowwood (*Viburnum dentatum*), green briar (*Smilax rotundifolia*), and Japanese honeysuckle (*Lonicera japonica*) characterizing the understory. The stream adjacent to Site 3 downstream to the crossing at the entrance from Canine Road has been channelized and its banks have been armored with riprap. The channel has been straightened and is narrow with steep banks. Vegetation adjacent to the banks along this section of Wetland-1 is characterized by mowed and maintain lawn, with a few garden plots, and scattered landscape trees characterized by pin oak, river birch, and willow oak (*Quercus phellos*). The stream associated with Wetland-1 continues to flow outside of the assessment area under the entrance road to the parking lot, then to the southwest and under Route 32 before emptying into the Little Patuxent River.

Wetland-2 is a small disturbed 0.018-acre isolated emergent wetland habitat adjacent to and outside of the southwestern boundary of Site 4. The small emergent habitat is on the southeastern edge of a gravel-surfaced equipment and road supply storage area and has been impacted by past land disturbance activities. Vegetation occurring within Wetland-2 is characterized by soft rush, Frank's sedge (*Carex frankii*), false nettle (*Boehmeria cylindrica*), and mint (*Mentha* sp). The emergent wetland is bordered by forested habitat characterized by sweet gum, Virginia pine (*Pinus virginiana*), pin oak, and southern red oak (*Quercus falcata*). A Draft Wetland and Waters of the United States Delineation Report has been prepared for the area delineated on December 2, 2008, and will be submitted to the USACE Baltimore District as an application for a Jurisdictional Determination.

Fort Meade uses an Advanced Wastewater Treatment Plant that discharges waste to the Little Patuxent River under the National Pollutant Discharge Elimination System (NPDES) Permit number MD0021717, State Discharge Permit No. 97-DP-2533 (U.S. Army 2007).

Floodplains. According to the May 2, 1983, FEMA Flood Insurance Rate Map Panel No. 2400080010C for Anne Arundel County, Maryland, all of the NSA campus is classified as zone C, meaning it is located in areas of minimal flooding outside of the 100-year floodplain (FEMA 1983).

3.6 Biological Resources

3.6.1 Definition of the Resource

Biological resources include native or naturalized plants and animals and the habitats (e.g., wetlands, forests, and grasslands) in which they exist. Protected and sensitive biological resources include federally listed (endangered or threatened), proposed, and candidate species, and designated or proposed critical habitat; species of concern managed under Conservation Agreements or Management Plans; and state-listed species.

Under the Endangered Species Act (ESA) (16 U.S.C. § 1536), an "endangered species" is defined as any species in danger of extinction throughout all or a significant portion of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future. Although candidate species receive no statutory protection under the ESA, the USFWS advises government

agencies, industry, and the public that these species are at risk and might warrant protection under the ESA in the future.

MDE is the state agency largely responsible for administering Maryland's environmental laws, regulations, and environmental permits related to wetlands, water withdrawal, discharges, storm water, and water and sewage treatment. The mission of the MDE is to protect the state's air, land, and water from pollution and to provide for the health and safety of its citizens through a cleaner environment (MDE undated).

The Maryland Forest Conservation Act (Natural Resources Article Section 5-1601 through 5-1613) is in effect for Fort Meade and the NSA complex. The main purpose of the Forest Conservation Act is to minimize the loss of Maryland'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. Of primary interest are 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 (MDNR undated).

Although the Maryland Department of Natural Resources, Forest Service administers the Forest Conservation Act, it is implemented on a local level. Gaining approval of the required Forest Conservation Plan (development of more than 1 acre) can necessitate long-term protection of included priority areas or planting/replanting a sensitive area offsite. Any activity requiring an application for a subdivision, grading permit, or sediment control permit on areas that are 40,000 ft² or greater is subject to the Forest Conservation Act and requires a Forest Conservation Plan and a Forest Stand Delineation prepared by a licensed forester, licensed landscape architect, or other qualified professional (MDNR undated).

3.6.2 Existing Conditions

Vegetation. Vegetative cover types on the NSA campus include mowed lawn, primarily composed of bluegrasses (*Poa* spp.), fescues (*Festuca* spp.), and crabgrasses (*Digitaria* spp.), and isolated blocks of forest dominated by oaks (*Quercus* spp.), Virginia pine (*Pinus virginiana*), and sweetgum (*Liquidambar styraciflua*) (U.S. Army 2007).

Sites 1, 2, 3, and 9 are parking lots containing little vegetation. Vegetation occurring on these parking sites includes young landscape trees composed of red maple (*Acer rubrum*) and honey locust (*Gleditsia triacanthos*). Site 1 is adjacent to a permanently flooded storm water pond. The vegetation surrounding this pond includes sweetgum, pin oak (*Quercus palustris*), red maple, and black willow (*Salix nigra*).

Site 4 is within a Forest Conservation Area (DOD 1995). The canopy is dominated by Virginia pine trees. Other species include sweetgum, red maple, sugar maple, sassafras (*Sassafras albidum*), pin oak, American holly (*Ilex opaca*), and choke cherry (*Prunus virginiana*). The understory is not very dense and is dominated by blueberry (*Vaccinium* spp.), sweetgum, choke cherry, Japanese honeysuckle (*Lonicera japonica*), Virginia creeper (*Parthenocissus quinquefolia*), poison ivy (*Toxicodendron radicans*), and common greenbrier (*Smilax rotundifolia*). Sites 1 and 3 border this Forest Conservation Area.

Site 5 is the location of seven generator sets within an enclosed utility yard. Vegetation includes mowed maintained lawn and a few Virginia pine trees. There is a vegetation buffer containing southern red oak (*Quercus falcata*), red maple, and sweetgum bordering the north side of this site.

Site 6 contains hardwood forest dominated by willow oak (*Quercus phellos*) and southern red oak with Virginia pine occurring as a codominant. The understory coverage is sparse and characterized primarily by greenbrier with some blueberry and blackberry (*Rubus* sp.) present. Other species found on Site 6

include American beech (*Fagus grandifolia*), sweetgum, mockernut hickory (*Carya tomentosa*), loblolly pine (*Pinus taeda*), and black cherry (*Prunus serotina*) (USACE 1987).

Site 7 is the location of the former motor pool. Site 8 is the location of the existing boiler facility and is within an enclosed utility yard. Both Sites 7 and 8 contain some maintained lawn. Site 10 is a developed site with existing parking space. Vegetation on this site consists of a few young landscape trees composed of honey locust and pin oak. The remaining vegetation consists of maintained lawn.

There is a palustrine-forested wetland bordering Site 9 and Site 10. Dominant vegetation in this wetland includes red maple and sycamore (*Platanus occidentalis*). Other species found on this site consist of greenbriar, switchgrass (*Panicum virginium*), elderberry (*Sambucus nigra*), box elder (*Acer negundo*), Virginia creeper, sweet gum, English ivy (*Hedera helix*), multiflora rose (*Rosa multiflora*), and Japanese honeysuckle.

Wildlife. Wildlife species found on the campus are typical of those found in urban-suburban areas. Mammalian species found on the campus include white-tail deer (*Odocoileus virginianus*) and groundhogs (*Marmota monax*), particularly near the Little Patuxent River. Other mammals include gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), eastern chipmunk (*Tamias striatus*), field mouse and vole (*Microtus* sp.), mole (*Scalopus aquaticus*), and fox (*Vulpes vulpes*) (U.S. Army 2007).

Avian species common to the campus include species that have adapted to an urban-suburban habitat, such as American robin (*Turdus migratorius*), catbird (*Dumetella carolinensis*), mockingbird (*Mimus polyglottos*), Carolina chickadee (*Poecile carolinensis*), Carolina wren (*Thryothorus ludovicianus*), house wren (*Troglodytes aedon*), downy woodpecker (*Picoides pubescens*), common flicker (*Colaptes auratus*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), rock dove (*Columba livia*), mourning dove (*Zenaida macroura*), and song sparrow (*Melospiza melodia*) (USACE 2007).

Sites 4 and 6 would be expected to support more wildlife than the remaining sites. Deer browse indications were observed in both of these sites and in the forested wetland next to Sites 9 and 10.

Threatened and Endangered Species. Except for occasional transient individuals, no federally listed or proposed endangered or threatened species are known to occur on any of the sites. No legally state protected species are known to occur on any of the sites.

A species survey of 70-acre northwestern extension of the NSA exclusive use area and the 580-acre NSA secure area was conducted in 2002. The only species of concern noted during this survey was the state rare mud salamander (*Pseudotriton montanus*) found along the west-central boundary of the 70-acre northwestern extension (U.S. Army 2007).

As of September 2005, there have been no federally listed rare, threatened, or endangered species found on Fort Meade (U.S. Army 2007). However, Fort Meade does contain five Maryland species of concern:

- Glassy darter (*Etheostoma vitreum*) – Maryland Threatened
- Downy bushclover (*Lespedeza stuevei*) – Maryland Watchlist
- Pubescent sedge (*Carex hirtifolia*) – Maryland Watchlist
- Purple chokeberry (*Aronia prunifolia*) – Maryland Watchlist
- Roughish panicgrass (*Panicum leucothrix*) – Maryland status uncertain.

3.7 Cultural Resources

3.7.1 Definition of the Resource

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

NEPA instructs Federal agencies to assess the probable impacts of their actions on the “human environment”— defined as “the natural and physical environment and the relationship of people with that environment” (40 CFR 1508.1). Procedurally, Federal agencies conducting an analysis of impacts under NEPA must examine whether the action is likely to have physical, visual, or other impacts on the following:

- Districts, sites, buildings, structures, and objects that are included in the NRHP, or a state or local register of historic places
- A building or structure that is more than 50 years old
- A neighborhood or commercial area that might be important in the history or culture of the community
- A neighborhood, industrial, or rural area that might be eligible for the NRHP as a district
- A known or probable cemetery, through physical alteration or by altering its visual, social, or other characteristics
- A rural landscape that might have cultural or aesthetic value
- A well-established rural community or rural land use
- A place of traditional cultural value in the eyes of a Native American group or other community
- A known archaeological site, or land identified by archaeologists consulted by the General Services Administration as having high potential to contain archaeological resources
- An area identified by archaeologists or a Native American group as having high potential to contain Native American cultural items.

Similarly, under 36 CFR Part 800, the implementing regulations of the National Historic Preservation Act (NHPA) (1966, as amended in 2000), Federal agencies must take into consideration the potential effect of an undertaking on “historic properties,” which refers to cultural resources listed in, or eligible for inclusion in the NRHP. In order to be determined a “historic property,” the resource must meet one or more of the criteria established by the NPS, and outlined in 36 CFR 60.4, that make the resource eligible for inclusion in, the NRHP. Procedures for the identification, evaluation, and treatment of cultural resources are contained in a series of Federal and state laws and regulations and agency guidelines. Archaeological, architectural, and Native American resources are also protected by a variety of laws and their implementing regulations: the Archeological and Historic Preservation Act of 1974, the Archaeological Resources Protection Act of 1979, the American Indian Religious Freedom Act of 1978, and the Native American Graves Protection and Repatriation Act of 1990.

As stipulated in 36 CFR 800.8, Section 106 can be coordinated with the requirements of NEPA. Preparation of an EA or EIS can be sufficient in fulfilling the required determination of effects for Section

106 compliance. Section 106 requires Federal agencies to afford the Advisory Council on Historic Preservation (ACHP) and other interested parties a reasonable opportunity to comment.

Typically, cultural resources are subdivided into archaeological resources (prehistoric or historic sites where human activity has left physical evidence of that activity but no aboveground structures remain standing) or architectural resources (buildings or other structures or groups of structures that are of historic or aesthetic significance). Archaeological resources comprise areas where human activity has measurably altered the earth or intact deposits of physical remains are found (i.e., prehistoric or historic habitation remains). Archaeological resources can also include submerged resources, including resources that are submerged as a result of wreck or intentional submersion (e.g., shipwrecks), resources submerged as a result of reservoir construction, or resources that have become submerged through sea level rise.

Architectural resources include standing buildings, bridges, dams, and other structures of historic or aesthetic significance. Generally, architectural resources must be more than 50 years old to be considered potentially eligible for nomination to the NRHP, as stated in National Register Bulletin 15. More recent structures, such as Cold War-era resources, might warrant protection if they are associated with exceptionally significant events or persons, represent remains that are so fragile that examples of any kind are extremely rare, or have the potential to gain significance in the future, as stated in National Register Bulletin 22.

TCPs or sacred sites can include archaeological resources, structures, neighborhoods, prominent topographic features, habitats, or areas where particular plants, animals, or minerals exist that Native Americans or other cultural groups consider to be essential for the preservation of traditional cultural practices, as stated in National Register Bulletin 38.

To identify cultural resources that could be potentially affected by the Proposed Action, the area within which archaeological, architectural, and Native American resources would have the potential to be affected must be determined. As defined by 36 CFR 800.16(d) of Section 106 of the NHPA, the Area of Potential Effect (APE) represents the "...geographic area or areas within which an undertaking could cause changes in the character or use of historic properties, if any such exists." In delineating the APE, factors taken into account include the elements of the Proposed Action; the existence of buildings, vegetation, and terrain with respect to potential visual or audible impacts; and construction activities necessary for the Proposed Action. The APE for archaeological resources for the Proposed Action is the footprint of the Proposed Action development areas and any linear corridors representing construction of infrastructure, such as roads and utilities. The APE for architectural resources includes the viewshed surrounding the development areas and linear corridors. Initiation of the Section 106 process was implemented with the Maryland Historical Trust (MHT), which serves as the State Historic Preservation Office.

3.7.2 Existing Conditions

Cultural Context. Detailed cultural contexts for the vicinity of Fort Meade (inclusive of the NSA-leased parcel) were developed during preparation of the Fort Meade 1994 Cultural Resources Management Plan (CRMP), and in the 2001 and 2006 CRMP updates (McAloon et al. 1994, USACE 2006) and included prehistoric contexts, pre-military historic contexts, and military historic contexts. All contexts were defined by time period. Prehistoric contexts consist of the Paleo-Indian/Early Archaic Period (11,000–6,500 B.C.), Middle Archaic Period (6,500–3,000 B.C.), Late Archaic Period (3,000–1,000 B.C.), Early Woodland Period (1,000–500 B.C.), Middle Woodland Period (500 B.C.–A.D. 900), and Late Woodland Period (A.D. 900–1638). Pre-military contexts identified were Euro-American and Contact and Settlement Period (1570–1750), Agrarian Intensification (1720–1815), Agricultural-Industrial Transition (1815–1870), Industrial/Urban Dominance (1870–1930), and the Modern Era (1930–Present). Military

contexts were defined as World War I (1917–1918), Inter-War Period (1919–1939), World War II (1940–1945), and Post World War II Period (1946–Present).

Archaeological Resources. A site file and literature search was conducted at MHT in Crownsville, Maryland. Research included the following:

- Review of the Laurel, Maryland, 7.5-minute, U.S. Geological Survey topographic quadrangle maps on which the MHT records the locations of previous cultural resources surveys and identified cultural resources
- Review of the MHT geographic information system (GIS) for data on the NSA campus
- Review of previous cultural resources survey reports.

Review of the topographic quadrangles and the MHT GIS found no previously recorded archaeological sites within the boundaries of the NSA campus. One archaeological site (18AN914) was previously recorded to the north of the NSA campus outside of Fort Meade and 40 sites have been recorded within Fort Meade to the east of the NSA campus.

The 1994 CRMP for Fort Meade (McAloon et al. 1994) included an archaeological predictive model completed for the entire installation, inclusive of the NSA campus. The model was based on the results of a pedestrian survey, review of cartographic and archival materials, and limited field testing. Areas of previous disturbance were defined through a review of construction plans, map data, and master planning documents; the delineation of disturbance areas was then checked through pedestrian reconnaissance and vegetation studies (McAloon et al. 1994: Volume 3). In this model, the NSA campus was depicted almost entirely as previously disturbed. The exception to this was a narrow strip of land on the northwestern edge of the campus that was designated as “Disturbed High Potential” due to its location along a channelized stream. This area was not subjected to testing during the 1994 CRMP investigation; however, subsequent surveys conducted by R. Christopher Goodwin Associates, Inc., and Hunter Research, Inc., included testing of this area (Hornum et al. 1995, Hunter 1998).

The 1995 survey included four auger tests placed within two open areas along the northwestern boundary of the NSA campus. Most of this area is occupied by parking lots. Auger tests placed in the northeastern portion of the survey area encountered fill to a depth of 40 centimeters below ground surface. Tests in the northwestern portion of the survey area encountered intact soils, with profiles showing a gradual change from brown sandy loam to yellow brown loamy sand to a strong brown sandy clay loam (Hornum et al. 1995). This latter area was recommended for further testing.

In 1998, a supplementary survey of 19 parcels at Fort Meade included a follow-up investigation of the area tested in 1995 (Hunter 1998). Thirteen shovel tests were placed in a 3.3-acre area immediately adjacent to the northwestern corner of the NSA campus (Hunter 1998: Figures 3.1 and 3.5). Soils were found to be mostly fill with some shovel tests containing large quantities of gravel and cobbles. No cultural materials were recovered and no further testing was recommended.

Additional archival research was conducted for one of the sites (Site 6) to ascertain whether the location could have been associated in some way with Fort Meade’s Prisoner-of-War (POW) camp. The cartographic section of the National Archives and Records Administration (NARA), College Park, Maryland, was searched to identify any other aerial images or maps on file for Fort Meade. The NARA has 1938 and 1952 aerials and also a partial aerial survey of Anne Arundel County completed by the Soil Conservation Survey in 1943. However, the index contained insufficient information to indicate whether the 1943 survey included Fort Meade since surveys not commissioned by military entities during that time period often did not include military installations for security reasons. The inventory of maps for

Fort Meade includes a number of construction plans from the 1917 to 1921 time frame, a road network map from 1940 to 1942, and a more recent plan from 1978. The following from Record Group 389 (Records of the Provost Master General's Office), Entries 457 and 461, were reviewed at the NARA: construction records, administrative records, inspection and labor reports, detention rosters, and the Master file of POW grave locations.

The POW compound at Fort Meade was situated in the rough rectangle formed by Dutt Road and Broadfoot Road on the south, Zimborski Avenue on the west, York Avenue on the east, and Simonds Street on the north in the south-central section of the installation (south of the golf course). The POWs lived in hutments previously used to intern civilian aliens. None of the inspection reports mention burial of POWs or activities in the location currently occupied by the NSA. The POW Grave Location Master file accounts for all POWs that died while at Fort Meade and notes their locations within the Fort Meade POW cemetery. There is no evidence tying the tree-covered Site 6 location in the NSA complex to the Fort Meade POW camp.

Given the 1994 predictive model and the subsequent testing that provided negative results and identified extensive disturbance, no further archaeological investigation should be required for the NSA campus. It should be noted that the MHT does not retain official correspondence in their files for more than a decade and has disposed of any correspondence concerning the predictive model presented in the 1994 CRMP and the subsequent testing investigations.

Historic Buildings and Structures. Review of the topographic quadrangles and the MHT GIS found no previously recorded architectural resources within the boundaries of the NSA campus since no architectural surveys have been completed within the NSA campus. All architectural investigations have been completed for nearby Fort Meade, and the two eligible architectural resources, the Fort Meade Historic District and the Water Treatment Plant (Building 8868), are situated well east of the NSA campus and would not be impacted.

The nearby BW Parkway is managed by NPS from the Washington, D.C., boundary to Fort Meade. The BW Parkway was listed on the NRHP in 1990, and the nomination recognized the flanking buffer of natural forests and other scenic features such as bridges and culverts as contributing elements to the BW Parkway's historical significance. The NPS expressed an interest during the scoping period for this EIS in the effect of the undertaking on this historic property from both an environmental and cultural standpoint (Syphax 2008, see **Appendix B**).

Traditional Cultural Properties. To date, no TCPs have been identified in relation to the NSA campus. There are currently no federally recognized Native American tribes in Maryland.

3.8 Infrastructure

3.8.1 Definition of the Resource

Infrastructure consists of systems and physical structures 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 to be discussed in this section include electrical power, natural gas, liquid fuel, heating and cooling, water supply, sanitary sewer and wastewater, and solid waste management (i.e., nonhazardous waste).

Communication systems are frequently considered in an infrastructure analysis. This Proposed Action would not be expected to increase or decrease communications demands or provide upgrades to any communications systems. Therefore, communications systems were not analyzed in detail. Furthermore, this section has been prepared to protect sensitive information pertaining to infrastructure systems and only discusses those points considered directly relative to this Proposed Action.

3.8.2 Existing Conditions

Electrical Power. BGE is the primary power supplier at Fort Meade. In the event of a power outage, electrical power is supplied by onsite generators at the NSA campus. DOD currently operates a South Utility Plant, which includes a South Electrical Substation, switchgear, and emergency generators. Replacement of the South Electrical Substation was recently analyzed in a separate EA (DOD 2007). The proposed construction and operation of additional generators and the additional plant are part of the utilities upgrade that is the subject of this EIS.

Natural Gas. Natural gas is supplied by BGE to the Defense Energy Support Center, a DOD agency, which in turn provides it to Fort Meade. Natural gas is supplied via high pressure (i.e., 100 pounds per square inch gauge) mains owned by BGE. The extensive natural gas distribution system includes BGE and government-owned systems that loop the entire installation. Most buildings are within a few hundred feet of an active supply line (USACE 2007, U.S. Army 2005). The natural gas system is in the process of being privatized. Natural gas is constrained by the connected meter limitations. BGE distribution mains are strategically located throughout the installation (USACE 2007, U.S. Army 2005).

Liquid Fuel. NSA operations involving liquid fuel are limited to the use of No. 2 fuel oil for heating and diesel fuel for running emergency generators. The NSA also operates truck-mounted fuel tanks (i.e., 50 gallons each) for refueling forklifts and other mobile equipment (DOD 2004).

The currently operating boiler plant used to heat the NSA campus (Site 8) uses two 200,000-gallon No. 2 fuel oil ASTs for steam generation and a 10,000-gallon diesel day tank for an emergency diesel generator. The plant also contains a small pump station in a closed pit that houses return lines and fuel lines (DOD 2001). The two 200,000-gallon ASTs are proposed to be replaced as part of the utilities upgrade that is subject to this EIS.

Site 9 previously included vehicle fueling from underground storage tanks (USTs). The tanks were closed in 2000 under supervision from MDE who declared the site free and clear of contamination. The tanks were filled in place since they were partially located under the footers for the roof of the vehicle canopy and tank removal would have required destruction of the canopy (DOD 2007).

Heating and Cooling. The NSA campus is heated by steam from dual-fuel natural gas/fuel oil-fired boilers. The boiler plant operates continuously. There are four boilers in the central plant, though the number in operation depends on the demand and the time of year. These boilers primarily operate on natural gas but use No. 2 fuel oil for backup. Contractors service the boiler plant though employees monitor the feed and perform daily chemical analysis (DOD 2001). Replacement of these boilers is proposed as part of the utilities upgrade subject to this EIS since the plant is old and inefficient. The aging boilers are expensive and difficult to maintain as replacement parts become difficult to find.

There are some individual chillers associated with buildings on the campus, but there is no central chilled water distribution system to provide air conditioning. DOD has identified the need for a central chiller plant in the future.

Water Supply. Potable water is pumped from wells to Fort Meade's water treatment plant, which is in the southwestern quadrant of the cantonment area near the intersection of Mapes Road and Obrien Road. The water treatment plant provides potable water to the entire installation. NSA receives approximately 3.4 mgd from the Fort Meade water treatment plant (USACE 2007). The water treatment plant is a multimedia filtration plant that contains three aboveground clearwell storage tanks with a combined capacity of 2.3 million gallons and seven active water storage tanks with capacities that range from 200,000 to 600,000 gallons. The water treatment plant was constructed in 1919 and has undergone upgrades in 1942, 1956, 1968, 1984, and 1986. The design capacity is 7.2 mgd (USACE 2007). Additionally, the NSA campus has two water supply wells and is permitted to withdraw an annual average of 18,000 gallons per day (DOD 2001).

Sanitary Sewer and Wastewater. The Fort Meade wastewater treatment plant is a modified activated sludge wastewater treatment plant. The wastewater treatment plant has been operating for about 17 years and has undergone numerous upgrades since its inception. A capacity analysis conducted in 2002, indicated that the current flow to the treatment plant averages 2.2 mgd, which is approximately 50 percent of the original design capacity of 4.6 mgd. Similarly, the maximum observed flow was 4.18 mgd compared to the maximum design flow of 12.3 mgd. The 2002 wastewater capacity study recommended an effective treatment capacity rating of 2.2 mgd (USACE 2007).

The sanitary sewer collection and pumping system at Fort Meade is composed of 58 miles of piping on and around the installation, 55 miles of gravity sewers, 3 miles of force mains, and 9 pumping stations (USACE 2007).

Solid Waste. Fort Meade generates approximately 33.14 tons per day of household, commercial, and industrial waste (USACE 2007). Solid waste is ultimately transported by licensed contractor to the King George Landfill in King George, Virginia. The King George Landfill has a total capacity of 31.8 million tons. In 2000, the landfill had a remaining capacity of approximately 28 million tons. Fort Meade does not currently operate a landfill, but there is a closed landfill in the southeastern portion of the installation. Numerous other rubblefills and landfills are in the greater Baltimore area. NSA operates its own recycling program (USACE 2007). In 2007, more than 6,600 tons of material were recycled with a waste diversion rate of 69 percent.

3.9 Transportation

3.9.1 Definition of the Resource

This section describes the existing transportation systems near NSA including on- and off-NSA campus roadways and traffic, access control points, and parking conditions on the NSA campus.

3.9.2 Existing Conditions

Fort Meade, and therefore NSA, is in western Anne Arundel County, near the eastern border of Howard County and the northwestern boundary of Prince George's County.

Surrounding Road System. NSA can be directly accessed (via secured gates) from MD-32 and the BW Parkway. MD-32 borders the southern portion of the NSA campus and is classified as a freeway. Within the past 5 years, improvements to MD-32 have eliminated traffic signals and provided a roundabout with flyover ramps to access Samford Road, and a ramp and underpass to connect the BW Parkway and MD-32 to Canine Road near the NSA campus.

MD-198, which lies south and west of the NSA campus, terminates at the roundabout south of MD-32 that leads into Fort Meade at Mapes Road. MD-198 is primarily a two-lane undivided highway. The BW Parkway, to the west of Fort Meade, provides north/south access between Baltimore and Washington, D.C. No heavy trucks are permitted on the BW Parkway south of MD-175 as this section is owned and maintained by the NPS and identified as an historic resource (see discussion in **Section 3.7**). The BW Parkway is a limited-access freeway with two lanes in each direction. North of MD-175, the BW Parkway is designated as MD-295. MD-32 and MD-175 provide access to the major north/south Baltimore/Washington D.C. connectors of MD-295, U.S. 1, I-95, and U.S. 29 to the west, as well as providing for east/west travel between Odenton and Columbia in Howard County.

Access Control Points. Access to Fort Meade is obtained through 12 control points; 8 are open and staffed on a regular basis and 4 service the NSA campus (see **Table 3.9-1**). NSA is its own distinct and secure facility within Fort Meade, and access is restricted to authorized personnel from other areas within the installation itself. At each control point, security guards check identification and inspect vehicles before allowing access into the NSA campus.

Table 3.9-1. Fort Meade Access Control Points Servicing NSA

Access Control Point	Description	Comment
BW Parkway	Interchange with gate	Restricted entry (authorized personnel only)
MD-32 and Canine Road	Interchange with gate	Public access to Cryptologic Museum (visitor access to facility)
MD-32 and Samford Road	Interchange with gate	Restricted entry (authorized personnel only)
Vehicle Inspection Facility	Vehicle inspection point prior to entering campus	Restricted entry (permitted visitor access and authorized personnel only)

Source: USACE 2007

NSA Campus Roadways. Routes through Fort Meade to NSA include Mapes Road and Rockenbach Road, which extend from MD-175 to the NSA campus. Internal circulation near NSA is provided through collector roadways, such as Canine Road, Love Road, and Samford Road. Most roads consist of one lane in each direction with signals or stop signs at most intersections. The roadway network is generally able to serve the needs and mission of the NSA. Level of service (LOS) is a qualitative measure of the operating conditions of an intersection or other transportation facility. There are six LOSs (A through F); LOS A represents the best operating conditions with no congestion, and LOS F is the worst with heavy congestion. Roadways and intersections with LOSs E or F would have traffic conditions at or above capacity. Traffic patterns would be congested, unstable, and normally unacceptable to individuals attempting to access and use roadways and intersections with LOS E or F. All intersections on Fort Meade near the NSA campus operate at a LOS A during both morning and evening peak periods (USACE 2007). There are no route restrictions to any of the roadways adjacent to or providing access to the NSA campus currently issued by the Maryland Department of Transportation (MDOT 2008b).

Parking. Multiple surface parking areas exist throughout the NSA campus. Access to primary lots is provided along Rockenbach Road, Savage Road, and Samford Road. Approximately 112 acres of surface parking is available on the NSA campus. Parking spaces fall into one of four groups:

- “General” spaces available for use by NSA employees or visitors at any time on a first-come, first-served basis

- “Reserved” spaces whose use is restricted on a 24/7 basis to individual senior staff
- “Handicap” spaces whose use is restricted to NSA employees or visitors whose vehicles display a valid disabled license plate or rearview mirror hang tag
- “NSA Fleet” areas used by government or private trucks, buses, and other maintenance vehicles that are not available for use by NSA employees or visitors.

Existing parking lots, including overflow parking, are at 100 percent capacity most weekdays during normal business hours. Ample parking capacity is available during off hours, weekends, and holidays.

3.10 Hazardous Materials and Wastes

3.10.1 Definition of the Resource

Hazardous materials are defined by 49 CFR 171.8 as “hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions in 49 CFR Part 173.” Transportation of hazardous materials is regulated by the U.S. Department of Transportation regulations within Title 49 CFR.

Hazardous substances are defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) at 42 U.S.C. 9601(14), as amended by the Superfund Amendments and Reauthorization Act (SARA), and the Toxic Substances Control Act (TSCA). The definition of hazardous substance includes (1) any substance designated pursuant to 33 U.S.C. 1321 (b)(2)(A); (2) any element, compound, mixture, solution, or substance designated pursuant to 42 U.S.C. 9602; (3) any hazardous waste; (4) any toxic pollutant listed under 33 U.S.C. 1317(a); (5) any hazardous air pollutant listed under Section 112 of the CAA (42 U.S.C. 7412); and (6) any imminently hazardous chemical substance or mixture with respect to which the Administrator of USEPA has taken action pursuant to 15 U.S.C. 2606. The term hazardous substance does not include petroleum products and natural gas.

Hazardous wastes are defined by the Resource Conservation and Recovery Act (RCRA) at 42 U.S.C. 6903(5), as amended by the Hazardous and Solid Waste Amendments, as “a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.” Certain types of hazardous wastes are subject to special management provisions intended to ease the management burden and facilitate the recycling of such materials. These are called universal wastes and their associated regulatory requirements are specified in 40 CFR Part 273. Four types of waste are currently covered under the universal waste regulations: hazardous waste batteries, hazardous waste pesticides that are either recalled or collected in waste pesticide collection programs, hazardous waste thermostats, and hazardous waste lamps.

Toxic substances are regulated under TSCA (15 U.S.C. 2601 et seq.), which was enacted by Congress to give USEPA the ability to track the approximately 75,000 industrial chemicals currently produced or imported into the United States. USEPA reviews manufacturer specifications for these chemicals and can require reporting or testing of those that might pose an environmental or human-health hazard. USEPA can ban the manufacture and import of those chemicals that pose an unreasonable risk. Asbestos and polychlorinated biphenyls (PCBs) are among the chemicals regulated by TSCA.

In general, hazardous materials, hazardous substances, and hazardous wastes include elements, compounds, mixtures, solutions, and substances which, when released into the environment or otherwise improperly managed, could present substantial danger to the public health, welfare, or the environment. Evaluation of hazardous materials and wastes focuses on USTs; ASTs; and the storage, transport, handling, and use of pesticides, herbicides, fuels, solvents, oils, lubricants, asbestos-containing material (ACM), and lead-based paint (LBP). Evaluation might also extend to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of a proposed action. In addition to being a threat to humans, the improper release of hazardous materials and wastes can threaten the health and well-being of wildlife species, botanical habitats, soil systems, and water resources. In the event of release of hazardous materials or wastes, the extent of contamination varies based on the type of soil, topography, and water resources.

3.10.2 Existing Conditions

Hazardous Materials

The majority of the facilities within the NSA campus use hazardous substances or petroleum products during daily operations. Common chemicals used at NSA include various solvents (e.g., acetone, isopropyl alcohol, photo-resists), paints, stains, thinners, adhesives, resins, alcohols, acids (e.g., hydrochloric, sulfuric, hydrofluoric, nitric, acetic), hydroxides, mercury (bulbs), flammable chemicals and corrosives, lead acid batteries, antifreeze, photochemicals, refrigerant gases, and fertilizers.

The currently operating boiler plant at the NSA campus (Site 8) uses a 10,000-gallon diesel day tank and two 200,000-gallon No. 2 fuel oil ASTs. The plant also contains a small pump station in a closed pit that houses return lines and fuel lines. Materials used in daily operations include rust inhibitors (toluene and xylene), oil, grease, sodium hydroxide, corrosive liquids, sulfites, and water treatment salt crystals.

Hazardous Wastes

Several facilities at the NSA currently generate or store hazardous wastes. Nonhazardous waste oil is also generated at several facilities at the NSA campus. The NSA facility is regulated under RCRA as a Large Quantity Generator (USEPA 2008e). The State of Maryland and USEPA regulate waste-producing activities at NSA and all emissions to air, water, or soil are regulated and controlled. Air emissions and solid waste activities are regulated by RCRA permits issued by the State of Maryland. These permits require monitoring of the waste produced, and limit such wastes in a manner that is protective of the environment and public health (ATSDR 1999).

The current boiler plant at NSA (at Site 8) historically generated hazardous waste from water descaling units, which are no longer used at the facility. No evidence of a release in the building or surrounding area was observed during a 2001 Building Survey and Contamination Assessment. Hazardous wastes are not currently generated, managed, or stored in the building or on its perimeter (DOD 2001).

All hazardous wastes generated at the NSA campus are containerized and stored in NSA's less than 90-day hazardous waste storage area prior to offsite transportation (DOD 2001). This facility is approximately 0.2 miles south of Site 8, which is a parking alternative. All other alternative sites are at least 0.3 miles north or greater from this hazardous waste storage area. Hazardous wastes stored in this facility include mercury, methyl ethyl ketone, arsenic, gasoline clean-up material, all toxic ("U-listed") wastes, and some freons. Additionally, ash from the reclamation furnaces and printed circuit board debris are containerized in 55-gallon drums and stored at this facility. All structures used to store hazardous wastes are situated on bermed concrete pads and have secondary containment (DOD 2001). Seven

shallow (i.e., less than 40 feet deep) groundwater monitoring wells have been installed around the facility (i.e., Well Nos. 36, 37, 38, 39, 40, 41, and 42) (DOD 2001).

Management of Hazardous Materials, Wastes, and Petroleum Products at NSA

NSA Hazardous Waste Generators Guide. This plan applies to all generators of hazardous wastes on NSA and identifies policies, required procedures, and responsibilities for its proper management in compliance with all Federal, state, local, and NSA regulations, policies, and directives. In addition, contractors and subcontractors that generate hazardous waste while performing work on NSA will comply with all Federal, state, and local laws and regulations including all procedures outlined in this plan.

Contingency Plans. NSA has contingency plans for hazardous waste operations on its campus. Contingency plans identify available material and equipment, responsibilities, and procedures to minimize hazards to human health and the environment from fire, explosion, or any unplanned sudden or nonsudden release of hazardous waste or hazardous constituents to air, soil, or surface water. Contingency plans satisfy requirements of COMAR 26.13.05.04, *Contingency Plan and Emergency Response Procedures*, and 40 CFR Part 265.30. COMAR 26.13.05.04 applies to owners and operators of all hazardous waste facilities, except as Regulation .01 otherwise provides. The provisions of the plan are to be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents that could threaten human health or the environment. The plan describes arrangements agreed to by local police departments, fire departments, hospitals, contractors, and state and local emergency response teams to coordinate emergency services, as well as a description of all emergency equipment at the facility.

Spill Prevention, Control, and Countermeasure Plan. A Spill Prevention, Control, and Countermeasure (SPCC) Plan was prepared for the NSA for the purpose of complying with applicable state and Federal regulatory requirements and providing facility personnel with a systematic approach for oil spill prevention and response. The plan has been prepared in accordance with the regulatory requirements promulgated by the USEPA in 40 CFR Part 112, *Oil Pollution Prevention*, and the State of Maryland requirements in COMAR 26.10.01, *Oil Pollution*. The Federal regulations were promulgated by the USEPA under the authority of Section 311(j) (1) (C) of the CWA, as amended by the Oil Pollution Act of 1990 (DOD 2004).

NSA operations involving petroleum products are limited to the storage and use of No. 2 fuel oil for heating and diesel for running emergency generators. The NSA facility also operates truck-mounted fuel tanks (50 gallons each) for refueling forklifts and other mobile equipment. All ASTs are provided with adequate secondary containment (either berms or double-walled construction), which should contain any oil spilled as a result of tank ruptures or leaks. Tank loading/unloading procedures are designed to minimize the probability and impacts of spills. Aboveground bulk storage tanks, pipes, and appurtenances are subject to integrity testing following the installation date of equipment and periodically thereafter within intervals of no longer than 10 years. The outside of tanks and containers, pumps, pipes, and piping appurtenances are visually inspected daily by operating personnel for signs of deterioration, leaks, or accumulation of petroleum inside and outside diked areas. Portable oil tanks and other storage containers, such as 55-gallon drums, are located in areas to prevent spilled oils from reaching U.S. waters and should have secondary containment (DOD 2004).

All USTs comply with the 1998 UST standards, including corrosion protection and leak detection. All pipe supports are properly designed to minimize abrasion and corrosion and to allow for expansion and contraction. All aboveground pipes, valves, and appurtenances are examined daily to assess their condition. Visible oil leaks from ASTs and USTs are promptly corrected and the contaminant residue is removed within 72 hours of discovery for disposal (DOD 2004).

Previous Releases of Hazardous Materials and Petroleum Products

Fort Meade is listed on the National Priorities List (NPL) of hazardous waste sites as of July 28, 1998, primarily due to contaminated groundwater discovered under the post and in the vicinity. Soil contamination has also been documented. Wastes stored at and disposed of in the contaminated areas were generated from operations at the Fort Meade facility, including municipal and domestic wastes, pesticides, solvents, PCBs, inert material, waste petroleum, oil, and lubricant products. Hazardous substances detected in the sampled areas include VOCs, semivolatile organic compounds (SVOCs), metals, pesticides, and PCBs. There is also a concern regarding UXO in former Fort Meade artillery impact areas on the adjacent Patuxent Wildlife Research Center to the south of Fort Meade (ATSDR 1999). The Army has initiated environmental studies and remedial investigations on the installation, with additional environmental studies planned at areas of potential environmental concern. Several additional removal actions, records of decision, and remedial actions are planned within the next few years. In order to satisfy RCRA requirements, the Army has identified 150 Solid Waste Management Units and Areas of Concern (USEPA 2008f). None of these areas are within the NSA's use area or near any of the proposed sites.

One of the site alternatives for the South Generator Facility (Site 5), an enclosed utility yard with seven existing generator sets, has been previously disturbed by various activities. An electrical substation (Substation 2 and 2A) adjoins Site 5 on the west. The substation is currently maintained by an offsite contractor who removes all wastes generated during maintenance and repair. Hazardous wastes are not generated, managed, or stored in this area or on its perimeter. A Phase I Building Survey and Contamination Assessment for the NSA campus was performed in September 2001 that identified potential contamination at the South Generator Plant and substation based on the types of operations that occur there (DOD 2001). A building within Site 5 was identified for sampling because hazardous waste and waste batteries were generated at this location. Soil samples were taken to investigate any possible VOC contamination at the site. Readings from the soil cores were similar to background levels and no compounds were detected in analysis. No further action was recommended (DOD 2002).

Three shallow groundwater monitoring wells (i.e., less than 40 feet deep) have been installed and monitored annually since 2003 at the generator facility at Site 5 (Well Nos. 10, 11, and 12) (NSA 2008). Well Nos. 10 and 11 at Site 5 exceeded the MDE-specified groundwater standard of 0.047 milligrams per liter (mg/L) for Diesel Range Organics (DRO) in 2007 (MDE 2008b, NSA 2008), though there are no USEPA-established groundwater standards for petroleum hydrocarbons in USEPA Region 3. NSA will address the potential DRO contamination at this site as necessary prior to any redevelopment. The total concentration of benzene, toluene, ethylbenzene, and xylene (BTEX) VOCs found in petroleum derivatives, such as gasoline, was far below the USEPA and MDE standard of 100 micrograms per liter ($\mu\text{g/L}$) for all groundwater monitoring years (NSA 2008).

There is a classified material conversion (CMC) facility immediately east of the site alternative for the Central Boiler Plant or the South Generator Facility (Site 7). Site 7 is the location of a parking lot that was previously used as a motor pool. The CMC facility contains two reclamation furnaces that are permitted under NSA's Title V Air Permit. A 10,000-gallon No. 2 fuel oil UST is used for the furnaces and is located between this building and the parking lot in Site 7. A shallow groundwater monitoring well is in place in the motor pool parking lot to monitor this UST (Well No. 21). The CMC facility was recommended for Phase II sampling in a Phase I assessment because of possible hazardous waste releases to the environment (DOD 2001). One soil boring taken on the east side of the building contained a mercury level of 0.054 milligrams per kilograms (mg/kg), which was greater than the 2002 MDE Standard for the Protection of Groundwater (0.0056 mg/kg), but below the Anticipated Typical Concentration (0.51 mg/kg). Because the detected concentration did not exceed the Anticipated Typical

Concentration, the exceedance was deemed an elevated background concentration and not a release to the environment. No further action was recommended at this site (DOD 2002).

The building immediately south of Site 7 is currently used as an archival facility for record storage and was previously used as a photoprocessing facility that might have generated hazardous waste. A release of anhydrous ammonia from a storage shed outside of this facility (quantity unknown) was reported on November 16, 1988, to the National Response Center and MDE Air and Radiation Management Administration. Photochemical wastes and process water were routinely discharged into a floor drain that was connected to the sanitary sewer (DOD 2001). This facility was decommissioned when photographic operations moved to digital processing (DOD 2007). This building was recommended for additional sampling in a Phase I assessment (DOD 2001). Soil sampling near the old photoprocessing facility during a Contamination Assessment conducted in 2002 did not reveal any organic compounds above the detection limit or RCRA metals above the MDE Non-Residential Clean-up Standard and the Standard for the Protection of Groundwater (DOD 2002).

Three groundwater monitoring wells have been installed at Site 7 (i.e., Well Nos. 13, 14, and 15) (NSA 2008). These three shallow wells have been monitored on an annual basis since 2003. Well No. 15 exceeded the MDE-specified groundwater standard of 0.047 mg/L for DRO in 2007 (MDE 2008b, NSA 2008), though there are no USEPA-established groundwater standards for petroleum hydrocarbons in USEPA Region 3. NSA will address the potential DRO contamination at this site as necessary prior to any redevelopment. The total concentration of BTEX VOCs found in petroleum derivatives, such as gasoline, was far below the USEPA and MDE standard of 100 µg/L for all groundwater monitoring years (NSA 2008).

A building southwest of Site 9 and just south of the former photoprocessing facility discussed above was identified for sampling because various chemicals and solvents were used at this location in the past and evidence of past soil contamination was discovered. A former lab located in the building's vicinity, used for processing semi-conductors, previously stored and used solvents, VOCs, and acids. This lab was completely removed and the entire area demolished, decontaminated, and reconstructed for its current use. Soil borings did not reveal contaminants in concentrations that would pose an unacceptable risk to human health or the environment (DOD 2002).

Twelve large oil spills (involving No. 2 fuel oil, No. 6 fuel oil, and hydraulic oil) were documented between May 1983 and February 2004 at the NSA. Of those, at least seven releases were from the ASTs next to the boiler plant, a facility alternative (Site 8) for the Central Boiler Plant (DOD 2004). All spills were reported to MDE, and affected areas were cleaned and remediated as needed. Seven shallow groundwater monitoring wells (i.e., less than 40 feet deep) have been installed to monitor the ASTs at the existing boiler plant at Site 8 (i.e., Well Nos. 23, 24, 25, 26, 27, 28, and 29) (NSA 2008). These seven wells have been monitored on an annual basis since 2003. DRO and Gasoline Range Organics (GRO) were detected above the MDE-specified groundwater standard of 0.047 mg/L between 2003 and 2008 in several of these groundwater monitoring wells (MDE 2008b, NSA 2008). DRO levels were consistently above the MDE standard in the seven boiler plant wells in 2006 and 2007; however, most wells had lower or no concentrations of DRO in 2008. A total of 29 shallow groundwater monitoring wells at NSA have had at least one instance of higher DRO or GRO concentrations than the MDE groundwater standard, but only 4 wells were above the standard in 2008, all of which are in place to monitor the existing boiler plant ASTs (NSA 2008). NSA will address the potential DRO and GRO contamination at this site as necessary prior to any redevelopment. There are no USEPA-established groundwater standards for petroleum hydrocarbons in USEPA Region 3. The total concentration of BTEX VOCs found in petroleum derivatives such as gasoline, was far below the USEPA and MDE standard of 100 µg/L for all groundwater monitoring years (NSA 2008).

In addition, naphthalene, a base, neutral, acid-extractable SVOC found in petroleum derivatives, was detected at levels above the MDE-specified groundwater standard of 0.00065 mg/L in 2006 and 2007 in Well No. 23 (0.020 mg/L and 0.0185 mg/L, respectively) and Well No. 26 (0.024 mg/L and 0.0254 mg/L, respectively). These groundwater monitoring wells are located at the existing boiler plant (Site 8).

3.11 Socioeconomics and Environmental Justice

3.11.1 Definition of the Resource

Socioeconomics. Socioeconomics are defined as the basic attributes and resources associated with the human environment, particularly population and economic activity. Factors that describe the socioeconomic environment represent a composite of several interrelated and nonrelated factors. There are several factors that can be used as indicators of economic conditions for a geographic area, such as average educational attainment, personal income, employment/unemployment rates, percentage of residents living below the poverty level, employment by business sector, and cost of housing. Data on employment can identify gross numbers of employees, employment by industry or trade, and unemployment trends. Data on personal income in a region can be used to compare the “before” and “after” effects of any jobs created or lost as a result of a proposed action. Data on industrial or commercial growth or growth in other sectors provides baseline and trend line information about the economic health of a region.

The Proposed Action has the potential to affect the construction industry; therefore, this section focuses primarily on that industry. For the purposes of this analysis, state, county, and local Region of Influence (ROI) data are tabulated and used.

Environmental Justice. Title VI of the Civil Rights Act and EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* (“Environmental Justice”), direct Federal agencies to consider whether their actions would have a disproportionate share of the adverse environmental consequences resulting from industrial, municipal, and commercial operations or the execution of Federal, state, tribal, and local programs and policies. Consideration of environmental justice concerns includes race, ethnicity, and the poverty status of populations in the vicinity of where a proposed action would occur. Such information aids in evaluating whether a proposed action would render vulnerable any of the groups targeted for protection in the EO.

3.11.2 Existing Conditions

Fort Meade became a U.S. Army installation in 1917. It has expanded since then to its current size of 5,067 acres and about 1,300 buildings. Fort Meade currently employs approximately 39,000 military, civilian, and contractor personnel. Fort Meade currently has 114 tenants, representing various government and military agencies. Among these tenants are the NSA and the National Cryptologic Museum, the Defense Information School, and the USEPA Environmental Science Center (USACE 2007). Fort Meade and the NSA combined create the largest employer in the State of Maryland. Within the continental United States, Fort Meade has the fourth largest work force of all Army installations. Fort Meade currently contributes about \$4 billion to the economies of Anne Arundel County and the State of Maryland (U.S. Army 2008).

For this Proposed Action, the socioeconomic baseline is presented using three levels of comparison: the ROI, Anne Arundel County, and the State of Maryland. The ROI was defined by identifying census tracts that composed Fort Meade and areas immediately around installation property. In order to include Fort Meade and the immediate surrounding area in which economic effects from the Proposed Action would be felt, the Fort Meade census-designated place (CDP) was used as the ROI. Anne Arundel

County is where effects from the Proposed Action would also be evident and includes the population within the ROI, along with the major residential and commercial centers within the area of the Proposed Action and Fort Meade. Between 1990 and 2000, Maryland's population increased by 10.8 percent. In the same period of time, Anne Arundel County grew by 14.6 percent, and the ROI's population decreased by 15.6 percent (U.S. Census Bureau 2000).

Employment Characteristics. Table 3.11-1 shows the type of employment by industry for residents in the Fort Meade ROI, Anne Arundel County, and Maryland. A large portion of the residents in Anne Arundel County and Maryland are employed in the education, health, social services industry; the professional, scientific, management, administrative, and waste management services industry; and the retail trade industry. As would be expected, there is a larger portion of the population in the ROI employed in the Armed Forces (50 percent), compared to Anne Arundel County (3 percent) and the State of Maryland (0.8 percent). The ROI also has a higher percent in the educational, health, and social services industry (25.8 percent), compared to Anne Arundel County and the State of Maryland at 17.1 percent and 20.6 percent, respectively (U.S. Census Bureau 2000).

Table 3.11-1. Overview of Employment by Industry

Employment by Industry	ROI	Anne Arundel County, Maryland	State of Maryland
Percent of Employed Persons in Armed Forces	50.0%	3.0%	0.8%
Industry of Civilian Labor Force			
Agriculture, forestry, fishing and hunting, and mining	0.0%	0.2%	0.6%
Construction	1.5%	8.1%	6.9%
Manufacturing	2.5%	7.3%	7.3%
Wholesale trade	3.2%	3.8%	2.8%
Retail trade	14.3%	11.7%	10.5%
Transportation and warehousing, and utilities	1.2%	5.7%	4.9%
Information	1.9%	3.6%	4.0%
Finance, insurance, real estate, and rental and leasing	6.0%	6.4%	7.1%
Professional, scientific, management, administrative, and waste management services	10.0%	12.1%	12.4%
Educational, health, and social services	25.8%	17.1%	20.6%
Arts, entertainment, recreation, accommodation, and food services	9.9%	6.6%	6.8%
Other services (except public administration)	1.6%	5.6%	5.6%
Public administration	22.1%	11.9%	10.5%

Source: U.S. Census Bureau 2000

Environmental Justice. Minority and low-income populations were characterized within the Fort Meade ROI, Anne Arundel County, and Maryland to establish a baseline for environmental justice analysis. The area identified as the Fort Meade ROI (i.e., the Fort Meade CDP) was evaluated for disproportionately low-income or minority populations compared to Anne Arundel County and the State of Maryland. As shown in **Table 3.11-2**, the Fort Meade ROI has a slightly lower percentage of African Americans (12.3 percent) when compared to Anne Arundel County (13.6 percent), but a significantly lower percentage than the State of Maryland (27.9 percent). The Fort Meade ROI has a lower median household income (\$40,661) than both Anne Arundel County (\$61,768) and the State of Maryland (\$61,876) (U.S. Census Bureau 2000).

In 2000, the unemployment rate in the Fort Meade ROI (2.5 percent) was slightly higher than Anne Arundel County (2.1 percent), but lower than the State of Maryland (3.2 percent). As shown in **Table 3.11-2**, residents within the Fort Meade ROI have a lower median household income compared to Anne Arundel County and the State of Maryland. However, a smaller percentage of individuals in the Fort Meade ROI are below the poverty line (4.7 percent) than the State of Maryland (6.1 percent) but higher than Anne Arundel County (5.3 percent) (U.S. Census Bureau 2000). Therefore, the ROI does not have a disproportionate number of minority or low-income populations, so no environmental justice issues would be expected.

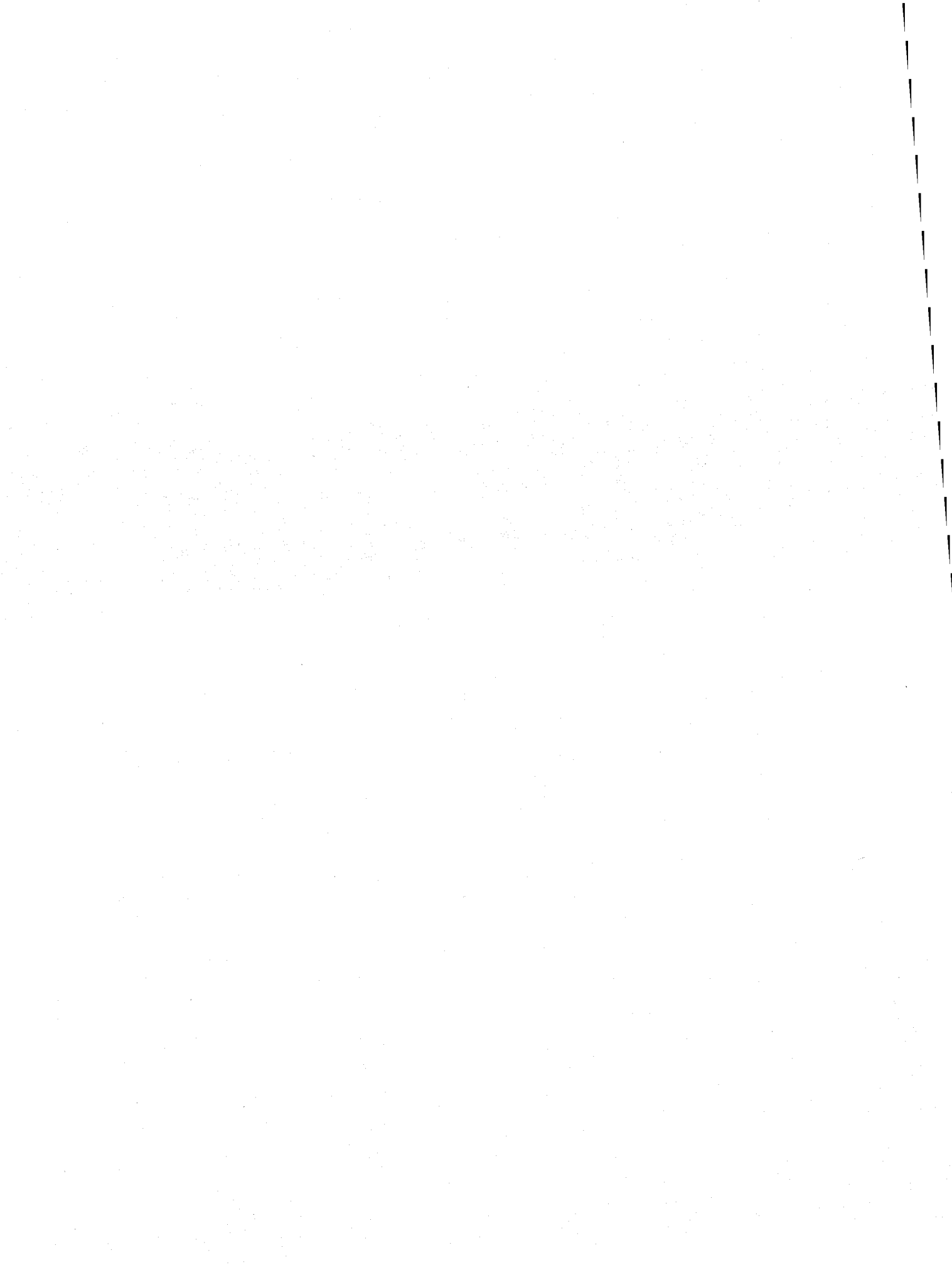
Table 3.11-2. Race and Poverty Characteristics

	ROI	Anne Arundel County, Maryland	State of Maryland
Total Population	9,882	489,656	5,296,486
Percent White	75.1%	81.2%	64.0 %
Percent Black or African American	12.3%	13.6%	27.9%
Percent American Indian, Eskimo, or Aleut	0.9%	0.3%	0.3%
Percent Asian	3.6%	2.3%	4.0%
Percent Native Hawaiian and Other Pacific Islander	0.1%	0.1%	0.0%
Percent reporting some other race	5.5%	0.9%	1.8%
Percent reporting 2 or more races	2.4%	1.7%	2.0%
Percent Unemployment	2.5%	2.1%	3.2%
Percent Families below Poverty	4.7%	3.6%	6.1%
Median Household Income	\$40,661	\$61,768	\$61,876

Source: U.S. Census Bureau 2000

SECTION 4

ENVIRONMENTAL CONSEQUENCES



4. Environmental Consequences

This section presents an analysis of the potential direct and indirect impacts each alternative would have on the affected environment, as characterized in **Section 3**. Each alternative was evaluated for its potential to affect physical, biological, and socioeconomic resources in accordance with 40 CFR 1502.16.

The following discussion elaborates on the nature of the characteristics that might relate to various impacts:

- **Short-term or long-term.** These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term impacts are those that would occur only with respect to a particular activity or for a finite period or only during the time required for construction or installation activities. Long-term impacts are those that are more likely to be persistent and chronic.
- **Direct or indirect.** A direct impact is caused by and occurs contemporaneously at or near the location of the action. An indirect impact is caused by a proposed action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action. For example, a direct impact of erosion on a stream might include sediment-laden waters in the vicinity of the action, whereas an indirect impact of the same erosion might lead to lack of spawning and result in lowered reproduction rates of indigenous fish downstream.
- **Negligible, minor, moderate, or major.** These relative terms are used to characterize the magnitude or intensity of an impact. Negligible impacts are generally those that might be perceptible but are at the lower level of detection. A minor effect is slight, but detectable. A moderate impact is readily apparent. A major impact is one that is severely adverse or exceptionally beneficial.
- **Adverse or beneficial.** An adverse impact is one having unfavorable or undesirable outcomes on the man-made or natural environment. A beneficial impact is one having positive outcomes on the man-made or natural environment. A single act might result in adverse impacts on one environmental resource and beneficial impacts on another resource.
- **Context.** The context of an impact can be localized or more widespread (e.g., regional).
- **Intensity.** The intensity of an impact is determined through consideration of several factors, including whether an alternative might have an adverse impact on the unique characteristics of an area (e.g., historical resources, ecologically critical areas), public health or safety, or endangered or threatened species or designated critical habitat. Impacts are also considered in terms of their potential for violation of Federal, state, or local environmental law; their controversial nature; the degree of uncertainty or unknown effects, or unique or unknown risks; if there are precedent-setting impacts; and their cumulative impacts (see **Section 4**).

The impact analyses consider all alternatives discussed in **Section 2** that have been identified as reasonable for meeting the purpose of and need for action. These alternatives include the following:

- The No Action Alternative (described in **Section 2.2.1**).
- The Proposed Action, which includes the construction of the North Utility Plant (**Section 2.1.1**), the South Generator Facility (**Section 2.1.2**), the Central Boiler Plant (**Section 2.1.3**), and installation of associated utility lines (**Section 2.2.5**). As discussed in **Sections 2.2.2** and **2.2.3**, the Proposed Action includes construction of two generator facilities that would use diesel-fueled

generator sets with SCR emissions-control technology, and four natural gas boiler units that would use low NO_x and FGR burners and optional SCR.

- Facility Alternatives (Section 2.2.4).
- Parking Alternatives (Section 2.2.6).

Sections 4.1 through 4.11 discuss potential environmental and socioeconomic impacts on the affected environment, as described in Section 3. Section 4.12 presents unavoidable adverse impacts associated with implementing the Proposed Action and alternatives. Section 4.13 describes the relationship between the short-term uses of man's environment and the maintenance and enhancement of long-term productivity. Section 4.14 discusses any irreversible or irretrievable commitments of resources that would be involved in the Proposed Action or alternatives. Finally, Section 4.15 discusses potential cumulative impacts of implementing the Proposed Action and alternatives in conjunction with other projects that have been identified in Section 2.4 at NSA, Fort Meade, and surrounding Fort Meade.

4.1 Land Use

Land use impacts are based on the level of land use sensitivity in areas affected by a proposed action and compatibility of proposed actions with existing conditions. In general, a land use impact would be adverse if it were to be inconsistent or in noncompliance with existing land use plans or policies, preclude the viability of existing land use, or be incompatible with present or future planned uses. Potential impacts on land use should also consider the indirect impacts from a proposed action, such as how other resource areas could affect land use. For example, changes in the noise or visual environment could result in an adverse impact on land use.

4.1.1 No Action Alternative

Under the No Action Alternative, DOD would not construct a North Utility Plant, South Generator Facility, or Central Boiler Plant. Conditions would remain as described in Section 3.1. No impacts on land use would be expected.

4.1.2 Proposed Action

The environmental consequences of the Proposed Action on land use are dependent upon the proposed site locations, discussed in the following paragraphs. None of the emissions control alternatives would be expected to impact land use.

4.1.2.1 North Utility Plant

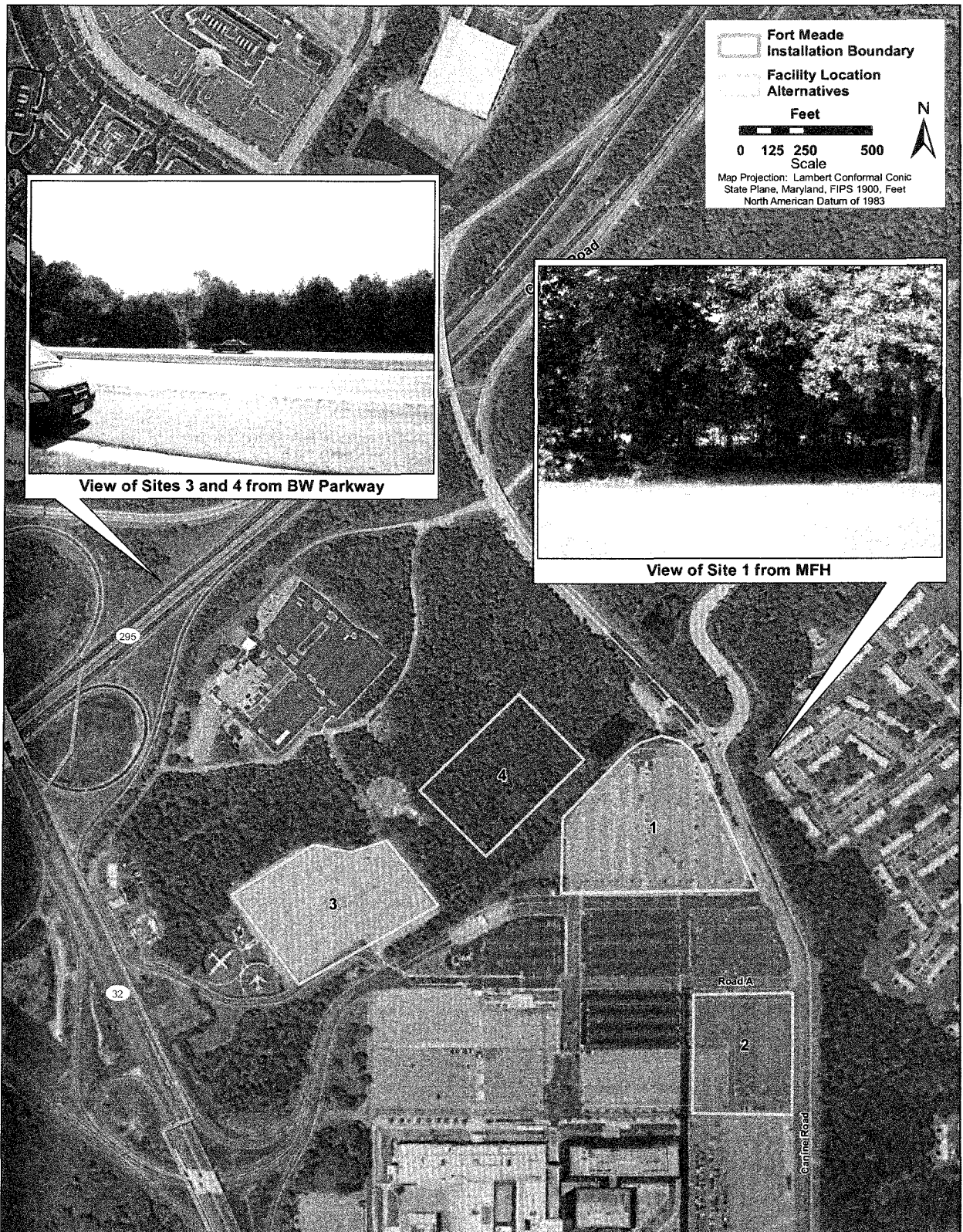
Construction of the North Utility Plant would result in short-term minor adverse impacts due to an increased presence of construction vehicles and disturbances related to construction activities. These activities are not expected to preclude adjacent land use activities. All of the site alternatives are located on DOD property. Operation of the North Utility Plant would result in long-term negligible to moderate impacts on land use, depending on site location (see environmental consequences of alternative site locations in Section 4.1.5). Construction of the North Utility Plant at Sites 1, 2, and 3 would have minor impacts on land use as a result of visual impacts and the potential impacts of replacing the parking lots at a new location. Construction of the North Utility Plant at Site 4 would have minor to moderate adverse impacts on land use as a result of visual impacts and the development of land in a Forest Conservation Area.

Because Sites 1 and 2 are adjacent, and Sites 3 and 4 are adjacent, Sites 1 and 4 were selected to study potential visual impacts on land use in more detail. **Figure 4.1-1** shows photographs from the BW Parkway looking towards Site 4 (and in the general direction of Site 3) and from Midway Commons MFH looking towards Site 1 (and in the general direction of Site 2). As shown in these photographs, there is substantial tree and shrubbery cover that blocks the views of adjacent land uses on the NSA campus. To show what the proposed North Generator Facility would look like at Sites 1 and 4, a visual model of the NSA campus was constructed with the proposed building shown at both sites. **Figure 4.1-2** shows an aerial snapshot of this model.

Figure 4.1-3 shows the simulated view from the BW Parkway looking towards Site 4. As shown in the model, the proposed North Generator Facility and associated 35-foot exhaust stacks are not visible from this angle on the BW Parkway (the building shown in **Figure 4.1-3** is the National Cryptologic Museum). Though not captured in the simulated view in **Figure 4.1-3**, the photograph in **Figure 4.1-1** shows that heavy undergrowth and shrubbery further reduces visibility from the BW Parkway onto the NSA campus. The trees and undergrowth, aided by changes in topography, provide adequate visual screening of the North Utility Plant from the BW Parkway. During winter months deciduous trees will lose their leaves, creating some spots that are sparser. From a land use perspective, there would be no visual impacts on the BW Parkway from the construction of the North Utility Plant at Site 4. See **Section 4.7** for a discussion of cultural impacts associated with the BW Parkway.

Figure 4.1-4 shows the simulated view from the Midway Commons MFH neighborhood looking towards Site 1. As shown in the simulated view, tree cover would almost entirely block the view of the proposed North Generator Facility. Though not captured in the simulated view in **Figure 4.1-4**, the photograph in **Figure 4.1-1** shows that heavy undergrowth and shrubbery would almost entirely block the view of the North Generator Facility under the trees. However, there might be some areas along the tree buffer that are thinner, where trees are not as tall, or where undergrowth is not as thick. During winter months deciduous trees will lose their leaves, creating some spots that are sparser. Therefore, it is possible that the exhaust stacks or the structure could be seen from some angles during winter months. From a land use perspective, visual impacts on MFH would be considered a minor adverse impact.

In comments on the Draft EIS dated November 21, 2008, the NPS requested an additional assessment to ensure that the Proposed Action would not impact the BW Parkway viewshed. Specifically, NPS requested that balloons be raised from the locations proposed for the electric generator exhaust stacks and that visual observations be made and documented to determine the extent to which the balloons would be visible from the BW Parkway. On December 2, 2008, a balloon test to supplement and verify the visual impact assessment was conducted at the proposed locations of the North and South Generator Facilities (Sites 4 and 5). Four 6-foot-diameter balloons were raised to a height of 35 feet, the proposed maximum stack height. One balloon was positioned at the corners of Sites 4 and 5. Photographs were taken from the BW Parkway at the same position used in the computer simulation that was presented in the Draft EIS. At no point were the balloons at either Sites 4 or 5 visible from the BW Parkway. This assessment concluded that the Proposed Action would not impact the viewshed from the BW Parkway, and therefore no effect on the NRHP-listed BW Parkway is expected (see **Section 4.1.2.1**). The Visual Impact Assessment Report is included in **Appendix C**, pages C-21 through C-29.



Source of Aerial Photography: NAIP 2007; Location Alternatives: e*M Inc 2007.

Figure 4.1-1. Photographic Views of Facility Alternatives for North Utility Plant from Sensitive Land Uses



Figure 4.1-2. Simulated Views of Facility Alternatives for North Utility Plant from Sensitive Land Uses



Figure 4.1-3. Simulated View in the Direction of the Proposed North Generator Facility at Site 4 from the BW Parkway (View 1)

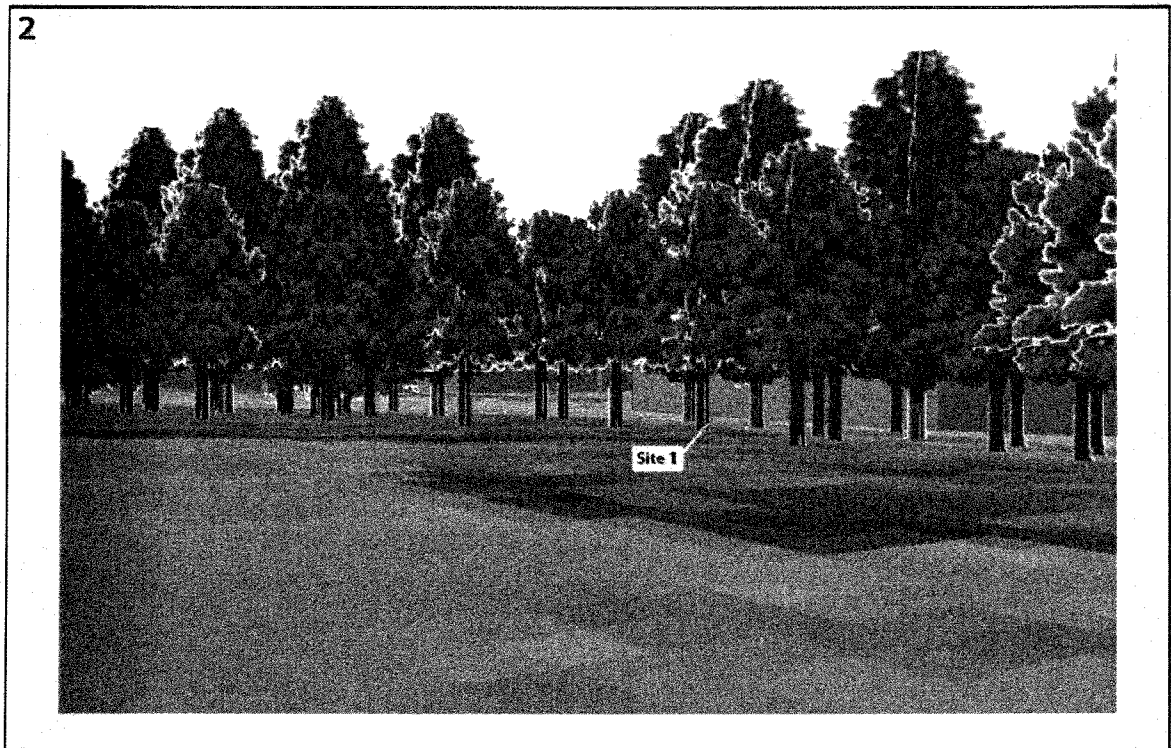


Figure 4.1-4. Simulated View in the Direction of the Proposed North Generator Facility at Site 1 from Midway Commons MFH (View 2)

4.1.2.2 South Generator Facility

Construction of the South Generator Facility would result in short-term minor adverse impacts due to an increased presence of construction vehicles and disturbances related to construction activities. These activities are not expected to preclude adjacent land use activities. The South Generator Facility is proposed to be constructed at Site 5, which is currently a utility yard, or Sites 6 or 7. There would be no long-term impacts on land use from the operation of the South Generator Facility at Site 5 and minor adverse impacts expected at Sites 6 and 7.

4.1.2.3 Central Boiler Plant

Construction of the Central Boiler Plant would result in short-term minor adverse impacts due to increased presence of construction vehicles and disturbances related to construction activities. These activities are not expected to preclude adjacent land use activities and would occur on property owned by Fort Meade. There would be no long-term impacts on land use from the operation of the Central Boiler Plant at Site 8 and minor adverse impacts expected at Site 7.

The stack height of the proposed Central Boiler Plant would be approximately 100 feet tall, which is 40 feet taller than the existing stack. To explore the potential for visual impacts on land use, the Central Boiler Plant was modeled at Site 8 with a 100-foot stack to determine whether the stack could be seen from the BW Parkway or MFH housing (see overview in **Figure 4.1-2**). As shown in **Figure 4.1-5**, which is a view from the BW Parkway, and **Figure 4.1-6**, which is a view from MFH, negligible visual impacts would be expected. If glimpses of the proposed stacks are seen, visual impacts would not be expected because there are taller structures that are more visible. The view of the stacks would not be considered out of character with the rest of the NSA campus.

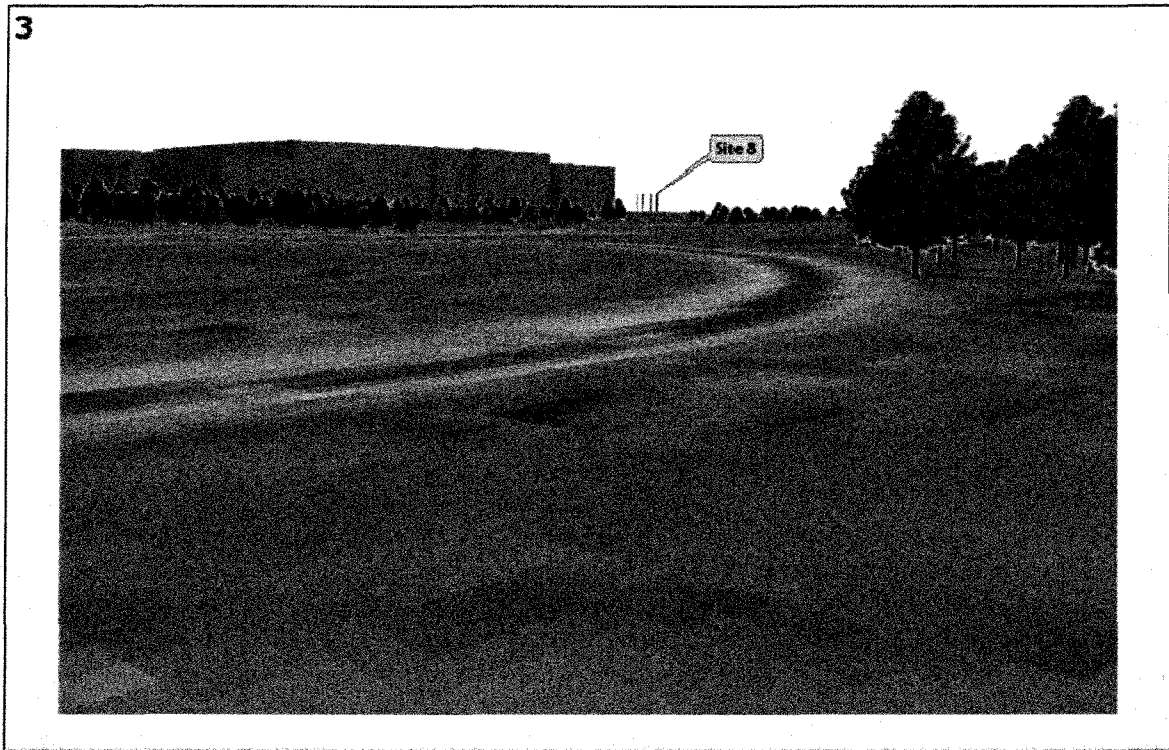


Figure 4.1-5. Simulated View in the Direction of the Proposed Central Boiler Plant at Site 8 from the BW Parkway (View 3)

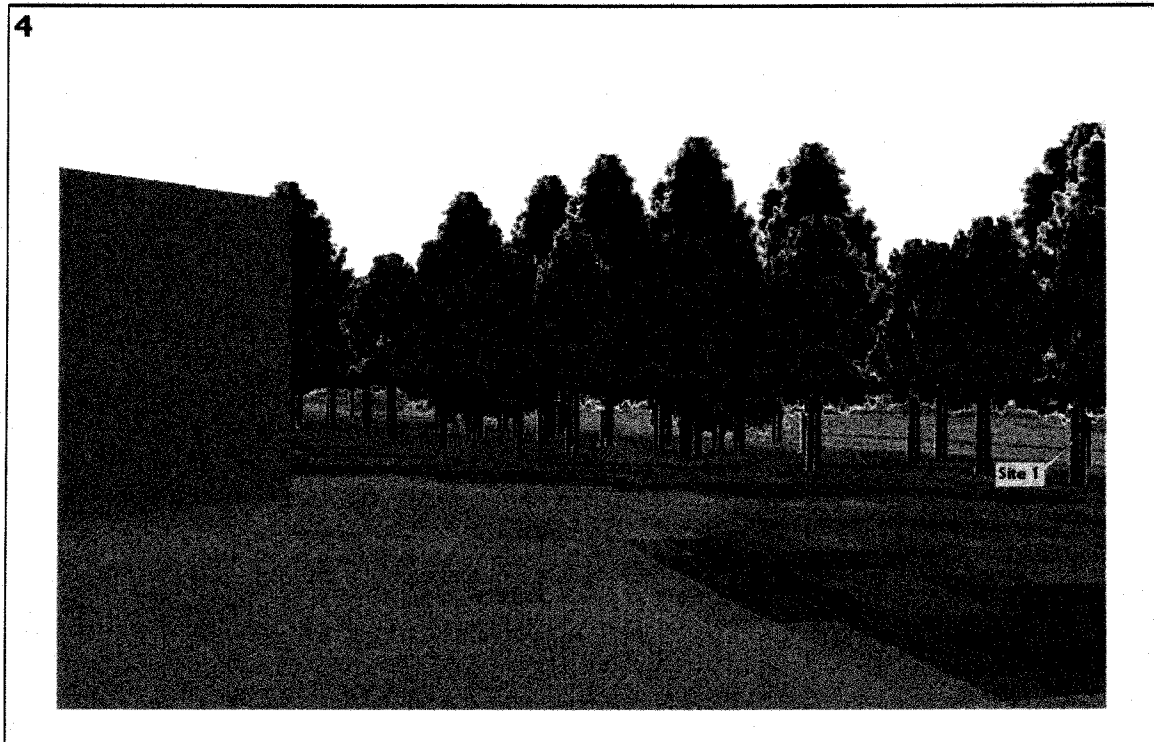


Figure 4.1-6. Simulated View in the Direction of the Proposed Central Boiler Plant at Site 8 from Midway Commons MFH (View 4)

4.1.2.4 Utility Corridors

Utility corridors, including both the power distribution lines and the high-voltage power transmission lines, would be installed in disturbed areas along existing utility corridors or roadways on the NSA campus. If the utility lines (particularly the transmission lines) were to be overhead, then the lines could introduce a new visual element. However, it is not anticipated that overhead lines would be out of character with or change existing or reasonably foreseeable land uses on the NSA campus. Therefore, no long-term adverse impacts on land use would be expected. Potential cumulative impacts on land use resulting from transmission lines leaving the planned BGE substation to the NSA campus are addressed in Section 4.15.1.

4.1.3 Facility Alternatives

4.1.3.1 Site 1

Site 1 is an alternative location for the North Utility Plant and is currently a parking lot. It is anticipated that construction and operation of the North Utility Plant at this location would have minor adverse impacts on land use. This facility alternative would result in the removal of 7.3 acres of parking surfaces. This could result in indirect minor impacts on land use depending on where the replacement parking lot would be constructed. Depending on the parking alternative chosen, personnel could have to park farther away from their destination or the additional parking lot could be constructed on an undeveloped site, which would change the existing land use and possibly affect the surrounding land uses. In addition, Site 1 is approximately 500 feet from the Midway Common MFH area. Consequently if this alternative were chosen, the proposed North Utility Plant would be adjacent to existing military residences. A tree buffer, which would remain between the MFH and the proposed plant, would aid in separating the industrial and

residential land uses (see **Figure 4.1-1**). The trees are estimated at 30 to 40 feet tall, so the proposed exhaust stacks and their emissions might be seen by residences at the MFH buildings closest to Site 1 in some places, which would be an impact on their visual environment. In addition, during construction, the Midway Common MFH would experience substantial levels from construction noise, as described in **Section 4.2.3**. The closest off-installation land is classified as transportation and utility and would be compatible with the land use of the proposed North Utility Plant. Given the distance from Site 1 to the installation boundary, it is not anticipated that off-installation populations would experience adverse impacts on land use from the construction or operation of the North Utility Plant at Site 1.

4.1.3.2 Site 2

Site 2 is an alternative location for the North Utility Plant and is currently a parking lot. Construction and operation of the North Utility Plant at this location would be expected to have no adverse impacts on land use. Site 2 is surrounded by roadways, parking, and the Midway Common MFH neighborhood, similar to Site 1. This facility alternative would result in the removal of 4 acres of parking surfaces. Similar to the parking alternatives discussed at Site 1, this could result in indirect minor impacts on land use depending on where the replacement parking lot would be constructed. In addition, the MFH is approximately 610 feet northeast of Site 2. A tree buffer that would be denser than the tree buffer between Site 1 and the proposed plant would separate Site 2 and the MFH (see **Figure 4.1-1**). The trees are estimated at 30 to 40 feet tall, so the proposed exhaust stacks and their emissions might be seen by residences at the MFH buildings northeast of Site 2, although to a lesser degree than if the North Utility Plant were constructed at Site 1. Effects on the Midway Common MFH due to increased noise during construction would be similar to those described for Site 1. Given the distance from Site 2 to the installation boundary, it is not anticipated that off-installation populations would experience adverse impacts on land use from the construction or operation of the North Utility Plant at Site 2.

4.1.3.3 Site 3

Site 3 is an overflow parking lot and is an alternative location for the North Utility Plant. Construction and operation of the North Utility Plant at this location would be expected to have moderate adverse impacts on land use. Site 3 is surrounded by roadways, forest, and the National Vigilance Park and is close to the National Cryptologic Museum. This facility alternative would result in the removal of 5.5 acres of parking surfaces. Similar to the parking alternatives discussed at Site 1, this could result in indirect minor impacts on land use, with respect to parking, depending on where the replacement parking lot would be constructed. The proposed industrial facility and the exhaust stacks, which would be about 35 feet tall, would be adjacent to the static aircraft display at the National Vigilance Park and approximately 890 feet south of the National Cryptologic Museum and would therefore impact the visual environment at the National Vigilance Park. Visual impacts on populations visiting the National Cryptologic Museum resulting from the view of the exhaust stacks and their emissions would be negligible. Effects of the construction and operation of the North Utility Plant could be minimized if the tree buffer was retained between the proposed plant and the museum and construction occurred on the far northeastern end of the site to provide distance between the proposed plant and the park. Site 3 is approximately 1,200 feet southeast of the BW Parkway. A tree buffer, which would remain between the proposed plant and the BW Parkway, would aid in separating the industrial and transportation land uses (see **Figure 4.1-1**). The Midway Common MFH is the closest residential facility and would not be expected to experience a substantial increase in noise levels during construction or operational activities.

4.1.3.4 Site 4 (Preferred Alternative)

Site 4 is in a Forest Conservation Area under the Maryland Forest Conservation Act and is 1,220 feet from the BW Parkway (USACE 2007). Construction and operation of the North Utility Plant at this

location would be expected to have minor to moderate adverse impacts on land use. Under the Proposed Action, several acres of trees would be removed and land use would be altered from forested to industrial. If Site 4 is chosen for development, then a minimum of 20 percent of the forested area should be preserved as Forest Conservation Mitigation Areas to mitigate impacts of any construction projects in accordance with Fort Meade's tree management policy to comply with the Maryland Forest Conservation Act (USACE 2007). Final project design review would limit impacts on forested areas and visual resources. Some reforestation would occur to improve the adjacent pine scrub forest; however the extent of the forest restoration is not known at this time. The National Vigilance Park and National Cryptologic Museum are approximately 1,160 feet and 980 feet, respectively, from Site 4. The proposed exhaust stacks and their emissions could impact the view seen by patrons at these publicly accessible facilities. The presence of a tree buffer between Site 4 and these facilities would minimize the adverse impacts of the change in the visual environment as well the adverse impacts of construction and operation of the North Utility Plant. A tree buffer would remain between the proposed plant and the BW Parkway, which would aid in separating the industrial and transportation land uses (see **Figure 4.1-1**). As concluded from the December 2, 2008, visual impact assessment, the Proposed Action would not impact the viewshed from the BW Parkway, and, therefore, no effect on the NRHP-listed BW Parkway is expected (see **Section 4.1.2.1**). The closest residential facility to Site 4 would be the Midway Common MFH, and impacts on the noise environment from construction would be similar to those of Site 3. Operational activities of the North Utility Plant are anticipated to be similar to those described for Site 1. In addition, the park and museum near Site 4 would experience an increase in noise, particularly during construction activities.

4.1.3.5 Site 5 (Preferred Alternative)

Site 5 is the preferred location for the South Generator Facility. No adverse impacts on land use would be expected due to implementation of the Proposed Action. This site is currently within a utility yard and, therefore, continued use of this site for electrical power generation would be consistent with the present and foreseeable land uses. As concluded from the December 2, 2008, visual impact assessment, the Proposed Action would not impact the viewshed from the BW Parkway, and therefore no effect on the NRHP-listed BW Parkway is expected. Increases in noise at the barracks would be expected during construction. See **Section 4.2.3.5** for a discussion on noise for Site 5. No land use incompatibilities would be expected on surrounding communities.

4.1.3.6 Site 6

Land at Site 6 is currently undeveloped, and development of this site would result in a loss of 2.6 acres of forest. If the South Generator Facility were constructed at Site 6, the land use would change from forested to industrial. Construction of the Proposed Action is expected to have long-term moderate adverse impacts on land use. The land use immediately surrounding Site 6 consists primarily of parking lots and would be consistent with present and foreseeable land uses. Land use adjacent to Site 6 (within 500 feet) consists of military barracks and administrative facilities. The construction of the South Generator Facility at Site 6 would change the visual environment for some of the residents (those living on the west end) at the barracks. In addition, the nearest sensitive noise receptor to Site 6 would be the barracks. Impacts on noise for the barracks would be similar to those described for Site 5. Given the distance from Site 6 to the installation boundary, it is not anticipated that off-installation populations would experience adverse impacts on land use from the construction or operation of the South Generator Facility at Site 6.

4.1.3.7 Site 7

Site 7 is a location alternative for the South Generator Facility or the Central Boiler Plant, although only one facility would be constructed at this site. Minor adverse impacts on land use would be expected. This site is currently surrounded by parking and administrative land uses; there are barracks approximately 860 feet north that are separated from Site 7 by other structures. The barracks are the nearest sensitive noise receptor and are expected to experience increases in noise during construction of the South Generator Facility or the Central Boiler Plant (see **Section 4.2.3.7.**) If the Central Boiler Plant were constructed at Site 7, approximately 1.3 acres of parking would be lost. Similar to the parking alternatives discussed at Site 1, this could result in minor impacts on land use depending on where the replacement parking lot would be constructed. Given the distance from Site 7 to the installation boundary, it is not anticipated that off-installation populations would experience adverse impacts on land use from the construction or operation of the South Generator Facility at Site 7.

4.1.3.8 Site 8 (Preferred Alternative)

Site 8 is the preferred location of the proposed Central Boiler Plant. No adverse impacts on land use would be expected. This site is currently within a utility yard; therefore, continued use of this site as a boiler plant would be consistent with the present and foreseeable land uses. Adverse impacts on the noise environment would not be expected since there are no sensitive noise receptors nearby. No land use incompatibilities would be expected on the surrounding communities.

4.1.4 Parking Alternatives

4.1.4.1 Surface Parking Lot on Sites 4 and 6

Construction of surface parking lots at Site 4 and Site 6 would have moderate adverse impacts on land use. Under this parking alternative, 8.7 acres of land would change from forest to parking uses. All of this land is within installation boundaries. The number of acres that would be disturbed at Sites 4 and 6 would be a maximum of 8.7 acres and could be less, but the exact space requirements would not be known until the detailed design process begins. Impacts on forested areas and visual resources will be minimized to the maximum extent practical. At the time of publication of the Final EIS, only high-level engineering design has occurred and a conservative evaluation of impacts has been made. No land use incompatibilities would be expected on the surrounding communities.

4.1.4.2 Parking Garage on Site 3

Construction of a parking garage on Site 3 would have minor adverse impacts on land use. Since this site is currently used as overflow parking, construction of a parking garage would not change the functional land use of the site; however, changes in visual appearance and changes in local traffic flow to the site could have minor indirect adverse impacts on the National Vigilance Park and the National Cryptologic Museum. It is not anticipated that construction of a three-story parking garage would result in incompatible surrounding uses.

4.1.4.3 Parking Garage on Site 9

Construction of a parking garage on Site 9 would have negligible impacts on land use. Site 9 is a parking garage alternative site and is currently surrounded by parking lots, administrative buildings, and a forested wetland to the east. Because this site is currently used as a parking area, no functional change in land use would occur if this site were used for a parking garage. Although barracks are north of Site 9, buildings separate these areas from the site. Therefore, impacts on the visual environment are not anticipated. It is not anticipated that construction of a three-story parking garage would result in incompatible surrounding uses.

4.1.4.4 Parking Garage on Site 10

Construction of a parking garage on Site 10 would have negligible impacts on land use. Site 10 is also a parking garage alternative site and consists of a parking area and several structures. The land surrounding this site includes parking lots, administrative buildings, and some forested areas. The existing structures on this site would be demolished if the parking garage was constructed. Since a large portion of this site is currently used as parking area, there would not be a functional change in land use if this site were used for a parking garage. There are barracks north of Site 10; however, buildings separate these areas from the site. Therefore, impacts on the visual environment are not anticipated. It is not anticipated that construction of a three-story parking garage would result in incompatible surrounding uses.

4.2 Noise

This noise analysis considers potential impacts on nearby noise-sensitive receptors including residents, schools, churches, and hospitals. All significant sources of noise, their contribution to the overall noise environment, and maximum sound level were estimated for comparison to local noise control standards. The analysis considers construction and operation of the proposed facilities.

4.2.1 No Action Alternative

Implementing the No Action Alternative would result in no impact on the ambient noise environment. No construction would take place and no additional generators would be located at NSA. Ambient noise conditions would remain as described in Section 3.2.2. No impacts on the noise environment would be expected.

4.2.2 Proposed Action

4.2.2.1 North Utility Plant

The primary source of noise at the North Utility Plant would be construction noise and the operation of emergency power generators. Impacts due to noise would vary with location and the nearest noise-sensitive receptor. An overview of construction and operational noise for the Proposed Action is presented below. An evaluation of the impacts of construction and operational noise for the different facility locations is presented in Section 4.2.3.

Construction Noise. Each of the proposed sites for the North Utility Plant, if selected, would have some form of heavy construction. Sources of construction noise would be the operation of heavy equipment, and pile-driving activities. The level of impact on a noise-sensitive receptor would vary depending on the type, number, and loudness of equipment in use at any given time. Individual pieces of heavy construction equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 feet. With multiple items of equipment operating concurrently, noise levels would be relatively high during daytime periods at locations within several hundred feet of active construction sites. Pile driving for the storage tank foundations would generate the most intense noise associated with construction of the proposed facilities. Noise associated with pile-driving activities is an impact-type noise. Impact-type noises are those of high intensity and a very short duration, and can be particularly intrusive. Table 4.2-1 outlines the level of short-term impact due to construction noise at each site, if selected, and restrictions as outlined in the Maryland noise regulation that would likely apply. Short-term minor to moderate adverse impacts would be expected depending on the site location. Figure 4.2-1 presents maximum noise levels versus distance for heavy construction and pile-driving activities.

Table 4.2-1. Estimated Level of Short-term Impact Due to Construction Noise

Site	Closest Noise-Sensitive Receptor ^a	Restricted Daytime Construction ^b	Restricted Nighttime Construction ^c	Clearly Audible Construction Noise ^d	Level of Short-term Impact
1	500 feet (152 meters)	No	Yes	Yes	Minor
2	609 feet (187 meters)	No	Yes	Yes	Minor
3	1,805 feet (550 meters)	No	Yes	No	Negligible
4	1,024 feet (312 meters)	No	Yes	No	Negligible
5	705 feet (215 meters)	No	Yes	Yes	Minor
6	371 feet (113 meters)	No	Yes	Yes	Minor
7	920 feet (280 meters)	No	Yes	Yes	Minor
8	1,375 feet (419 meters)	No	Yes	No	Negligible

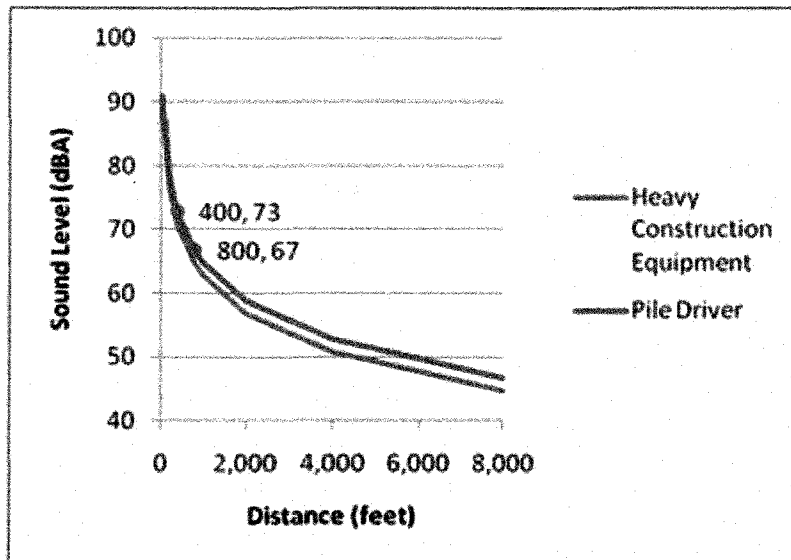
Notes:

^a The closest Noise-Sensitive Receptor is military family housing for Sites 1, 2, 3, and 4, and barracks for Sites 5, 6, 7, and 8.

^b Noise-Sensitive Receptor Closer than 200 feet (61 meters).

^c Noise-Sensitive Receptor Closer than 5,000 feet (1,525 meters).

^d Noise-Sensitive Receptor Closer than 1,000 feet (305 meters).



Source: USDOT 2006b

Figure 4.2-1. Maximum Noise Levels vs. Distance for Construction-Related Activities

The zone of relatively high construction noise levels typically extends to distances of 400 to 800 feet from the site of major equipment operations. Locations more than 1,000 feet from construction sites seldom experience substantial levels (greater than 62 dBA) of construction noise. For noise-sensitive receptors closer than 200 feet (61 meters) to the site, construction noise would be louder than the maximum allowed in the State of Maryland noise regulation for daytime activities (90 dBA). For noise-sensitive receptors closer than 5,000 feet (1,525 meters) (approximately 1 mile) to the site, construction noise would be louder than the maximum allowed in the State of Maryland noise regulation for nighttime activities (55 dBA). Military family housing would be the primary noise-sensitive receptor. The level of short-term noise impact would be negligible to minor depending on the facility alternatives. See **Section 4.2.3** for construction noise analysis by site.

Operational Noise. The emergency generators would dominate the noise-producing equipment associated with the North Utility Plant. This facility is in the preliminary design stage. Therefore, a complete equipment list and associated manufacturers specifications are not finalized. Much of the noise-producing equipment would be contained inside the facility superstructure, which would be fabricated with noise-reducing material. Generator exhausts would be open to the exterior of the buildings and would be equipped with industrial silencers.

Noise levels generated by operation of the proposed generators at the North Utility Plant were estimated for 50 percent capacity and 100 percent capacity. Sound level data for the proposed generators were obtained from vendors, and noise levels were calculated using empirical formulas based on process and mechanical equipment data. It was assumed that at 50 percent operating conditions, 100 percent of the emergency generators would be operating at 50 percent load; and that at 100 percent capacity, 100 percent of the emergency generators would be operating at full load. **Table 4.2-2** outlines noise levels that would be generated by operation of the proposed generators at the North Generator Facility for the period of time emergency power is required. Detailed operating noise calculations are summarized by site in **Section 4.2.3** and outlined in **Appendix E**. Any emergency operations are exempt from the State of Maryland's noise regulation. However, the levels outlined in the regulation were carried forward to gauge the level of impacts under NEPA. Operating noise levels would exceed state noise limits for the period of time that an emergency electrical power supply is needed. The level of long-term noise impact would be negligible to minor depending on the facility alternative and the percent capacity at which the North Generator Facility would be operating.

Table 4.2-2. Estimated Long-term Noise Levels Due to Generator Operations

Site Number	Proposed Facility	Distance to Noise Sensitive Receptor (feet)	Sound Level (dBA)		Exceeds State Noise Limits for Nighttime (> 55 dBA)
			100% Capacity	50% Capacity	
1	North Utility Plant	500	71	65	Yes
2		609	69	63	Yes
3		1,805	57	51	Yes
4		1,024	64	58	Yes
5	South Generator Facility	705	67	61	Yes
6		371	73	67	Yes
7		920	64	58	Yes

Note: The analysis assumes casing and intake noise are completely controlled by the building superstructure. Industrial silencers are based on those common to the selected generator set. Overall, noise could vary somewhat based on the final design parameters.

4.2.2.2 South Generator Facility

The primary sources of noise at the South Generator Facility would be construction noise and the operation of emergency power generators. In general, noise sources and levels from the construction and operation of the South Generator Facility would be the same as that outlined under the North Utility Plant in **Section 4.2.2.1**. As with the North Utility Plant, impacts due to noise would vary with location and the nearest noise-sensitive receptor. **Table 4.2-1** outlines the level of short-term impact due to construction noise at each site, if selected, and restrictions as outlined in the Maryland noise regulation that would likely apply. Short-term minor to moderate adverse impacts would be expected depending on the site location. **Table 4.2-2** outlines noise levels that would be generated by operation of the proposed generators at the South Generator Facility for the period of time emergency power is required. Any emergency operations are exempt from the State of Maryland's noise regulation. However, the levels outlined in the regulation were carried forward to gauge the level of impacts under NEPA. Long-term negligible to minor adverse impacts would be expected depending on the site location. An evaluation of the impacts of construction and operational noise for the different facility locations are presented in **Section 4.2.3**.

4.2.2.3 Central Boiler Plant

The primary source of noise at the Central Boiler Plant would be construction noise. In general, noise from the construction of the Central Boiler Plant would be the same as that outlined under the North Utility Plant in **Section 4.2.2.1**. **Table 4.2-1** outlines the level of short-term impacts due to construction noise at each site, if selected, and restrictions as outlined in the Maryland noise regulation that would likely apply. Short-term negligible to minor adverse impacts would be expected depending on the site location.

No appreciable sources of noise would be expected with the operation of the proposed Central Boiler Plant. Noise-generating equipment would be predominately enclosed by the buildings superstructure. Some venting or blowdown of gasses could be present. However, noise from these sources would be negligible. As with the North Utility Plant, impacts due to noise would vary with location and the nearest noise-sensitive receptor. An evaluation of the impacts of construction and operational noise for the different facility locations is presented in **Section 4.2.3**.

4.2.2.4 Utility Corridors

In general, noise from the installation of the utility lines would be similar to construction noise outlined under the North Utility Plant in **Section 4.2.2.1**. However, there would be no pile-driving activities associated with the utility line installation. Construction activities would cause temporary increases in ambient noise levels near the utility corridors. The majority of these activities would be conducted during daytime hours. At certain locations where traffic or road-use restrictions would affect the construction schedule, construction could proceed during evening hours. Equipment would not be fixed in one location for long durations but would progress along the utility corridor. Noise would be temporary, and would subside at any particular location as construction progresses to subsequent segments of the right-of-way. Short-term negligible adverse impacts would be expected depending on the site location.

4.2.3 Facility Alternatives

For the North Utility Plant, South Generator Facility, and Central Boiler Plant, impacts due to noise would vary depending on the site ultimately selected, and the nearest noise-sensitive receptor. An evaluation of the impacts of construction and operational noise for the different sites is presented below.

Any emergency operations are exempt from the State of Maryland's noise regulation. However, the levels outlined in the regulation were carried forward to gauge the level of impacts under NEPA.

Table 4.2-1 outlines restrictions from the Maryland noise regulation that would likely apply, and the level of short-term impact due to construction noise at each site, if selected. **Table 4.2-2** summarizes the estimated operating noise levels if generators were operating at 50 percent load and 100 percent load.

4.2.3.1 Site 1

Construction of the North Utility Plant at Site 1 would have short-term and long-term minor adverse impacts on the noise environment. Short-term impacts would be due to noise from heavy construction equipment and pile-driving activities. Long-term impacts would be due to generator operations at the North Utility Plant.

The nearest noise-sensitive receptor (i.e., Midway Common MFH) is 500 feet away and would experience substantial levels (greater than 62 dBA) of construction noise (see **Table 4.2-1**). Construction noise would not exceed the maximum allowed in the State of Maryland noise regulation for daytime activities (90 dBA). However, construction noise would be louder than the maximum allowed for nighttime activities (55 dBA). Restrictions on construction would likely be necessary between the hours of 10:00 p.m. and 7:00 a.m.

For Site 1, noise levels would exceed the levels outlined in the regulation for short durations during the testing of the equipment and for periods when emergency power was required (see **Table 4.2-2**). The noise would be intermittent, limited in duration, and have little impact on areas outside the NSA campus.

4.2.3.2 Site 2

Construction of the North Utility Plant at Site 2 would have short-term and long-term minor adverse impacts on the noise environment. The nearest noise-sensitive receptor (i.e., Midway Common MFH) is 609 feet away. These impacts would be similar to those outlined for Site 1. Short-term impacts would be due to noise from heavy construction equipment and pile-driving activities. Long-term impacts would be due to generator operations at the North Utility Plant. Long-term noise levels and impacts would be similar to, although somewhat less than, those outlined for Site 1 (see **Table 4.2-2**).

4.2.3.3 Site 3

Construction of the North Utility Plant at Site 3 would have short-term negligible and long-term minor adverse impacts on the noise environment. The nearest noise-sensitive receptor (i.e., Midway Common MFH) is 1,805 feet away. Short-term impacts would be due to noise from heavy construction equipment and pile-driving activities. The nearest noise-sensitive receptor (i.e., Midway Common MFH) would not experience substantial levels (greater than 62 dBA) of construction noise (see **Table 4.2-1**). Construction noise would not exceed the maximum allowed in the State of Maryland noise regulation for daytime activities (90 dBA). However, construction noise would be louder than the maximum allowed for nighttime activities (55 dBA). Restrictions on construction would likely be necessary between the hours of 10:00 p.m. and 7:00 a.m.

Long-term impacts would be due to intermittent generator operations at the North Utility Plant. Long-term noise levels and impacts would be similar to, although somewhat less than those outlined for Site 1 (see **Table 4.2-2**).

4.2.3.4 Site 4 (Preferred Alternative)

Construction of the North Utility Plant at Site 4 would have short-term negligible and long-term minor adverse impacts on the noise environment. The nearest noise-sensitive receptor (i.e., Midway Common MFH) is 1,024 feet away. These impacts would be similar to those outlined for Site 3. Short-term impacts would be due to noise from heavy construction equipment and pile-driving activities. Long-term impacts would be due to intermittent generator operations at the North Utility Plant. Long-term noise levels and impacts would be similar to, although somewhat less than those outlined for Site 1 (see **Table 4.2-2**).

4.2.3.5 Site 5 (Preferred Alternative)

Site 5 is the location of the existing generator facility. Construction of the proposed South Generator Facility at Site 5 would have short-term negligible and long-term minor adverse impacts on the noise environment. Short-term impacts would be due to noise from heavy construction equipment and pile-driving activities. Long-term impacts would be due to intermittent generator operations at the South Generator Facility.

The nearest noise-sensitive receptor, the barracks, is 705 feet away and would experience substantial levels (greater than 62 dBA) of construction noise (see **Table 4.2-1**). Construction noise would not exceed the maximum allowed in the State of Maryland noise regulation for daytime activities (90 dBA). However, construction noise would be louder than the maximum allowed for nighttime activities (55 dBA). Restrictions on construction would likely be necessary between the hours of 10:00 p.m. and 7:00 a.m.

For Site 5, noise levels due to operation of the South Generator facility would exceed the levels outlined in the regulation (see **Table 4.2-2**). These levels would be expected for short durations during the testing of the equipment and during periods when emergency power was required. The noise would be intermittent, limited in duration, and have little impact on areas outside the NSA campus.

4.2.3.6 Site 6

Construction of the South Generator Facility at Site 6 would have short-term and long-term minor adverse impacts on the noise environment. Short-term impacts would be due to noise from heavy construction equipment and pile-driving activities. Long-term impacts would be due to intermittent generator operations at the South Generator Facility.

The nearest noise-sensitive receptor, the barracks, is 371 feet away and is expected to experience substantial levels (greater than 62 dBA) of construction noise (see **Table 4.2-1**). Construction noise is not expected to exceed the maximum allowed in the State of Maryland noise regulation for daytime activities (90 dBA). However, construction noise is expected to be louder than the maximum allowed for nighttime activities (55 dBA). Restrictions on construction would likely be necessary between the hours of 10:00 p.m. and 7:00 a.m.

For Site 6, noise levels are expected to exceed the levels outlined in the State of Maryland's noise regulation (see **Table 4.2-2**). Noise levels would exceed the levels outlined in the regulation for short durations during the testing of the equipment and for periods where emergency power was required (see **Table 4.2-2**). The noise would be intermittent, limited in duration, and have little impact on areas outside the NSA campus.

4.2.3.7 Site 7

Construction of the South Generator Facility or Central Boiler Plant at Site 7 would have short-term minor adverse impacts on the noise environment. Short-term impacts would be due to noise from heavy construction equipment and pile-driving activities. The nearest noise-sensitive receptor, the barracks, is 864 feet away and would experience substantial levels (greater than 62 dBA) of construction noise. Construction noise would not exceed the maximum allowed in the State of Maryland noise regulation for daytime activities (90 dBA). However, construction noise would be louder than the maximum allowed for nighttime activities (55 dBA). Restrictions on construction would likely be necessary between the hours of 10:00 p.m. and 7:00 a.m.

No appreciable sources of noise would be expected with the operation of the proposed Central Boiler Plant. Implementing the Site 7 Alternative would not result in any long-term changes to the ambient noise environment. Overall noise conditions after completion of construction would return to that described in **Section 3.2.2**.

However, if the South Generator Facility were constructed at Site 7, noise levels would be expected to exceed the levels outlined in the State of Maryland's noise regulation (see **Table 4.2-2**). Noise levels would exceed the levels outlined in the regulation for short durations during the testing of the equipment and for periods where emergency power was required (see **Table 4.2-2**). The noise would be intermittent, limited in duration, and have little impact on areas outside the NSA campus.

4.2.3.8 Site 8 (Preferred Alternative)

Implementation of the Proposed Action at Site 8 would have short-term negligible adverse impacts on the noise environment. The nearest noise-sensitive receptor, the barracks, is 900 feet away. These impacts, both type and level, would be similar to those outlined for Site 5 (see **Table 4.2-1**). Short-term impacts would be due to noise from heavy construction equipment and pile-driving activities.

No appreciable sources of noise would be expected with the operation of the proposed Central Boiler Plant. Implementing the Proposed Action at Site 8 would not result in any long-term changes to the ambient noise environment. Overall noise conditions after completion of construction would return to that described in **Section 3.2.2**.

4.2.4 Parking Alternatives

Table 4.2-3 outlines restrictions from the state of Maryland noise regulation that would likely apply, and the level of short-term impact due to construction noise at Sites 3, 4, 6, 9, and 10.

4.2.4.1 Surface Parking Lot on Sites 4 and 6

Implementation of this alternative would have short-term minor adverse impacts on the noise environment. Short-term impacts associated with construction activities would be similar to those described for Site 4 and Site 6 in **Sections 4.2.4.4** and **4.2.4.6**. Heavy equipment would be used for clearing, earth moving, and construction of surface lots at both locations. The impacts at Site 6 would be somewhat greater than at Site 4 due to its closer proximity to the nearby MFH. No appreciable sources of noise would be expected with the operation of the proposed surface lots. Implementing this alternative would not result in any long-term changes to the ambient noise environment. Overall noise conditions after completion of construction would return to that described in **Section 3.2.2**.

Table 4.2-3. Estimated Level of Short-term Impact Due to Construction Noise

Site	Closest Noise-Sensitive Receptor ^a	Restricted Daytime Construction ^b	Restricted Nighttime Construction ^c	Clearly Audible Construction Noise ^d	Level of Short-term Impact
3	1,805 feet (550 meters)	No	Yes	No	Negligible
4	1,024 feet (312 meters)	No	Yes	No	Negligible
6	371 feet (113 meters)	No	Yes	Yes	Minor
9	864 feet (263 meters)	No	Yes	Yes	Minor
10	900 feet (274 meters)	No	Yes	Yes	Minor

Notes:

^a The closest Noise-Sensitive Receptor is military family housing for Sites 3 and 4, and barracks for Sites 6, 9, and 10.

^b Noise-Sensitive Receptor Closer than 200 feet (61 meters).

^c Noise-Sensitive Receptor Closer than 5,000 feet (1,525 meters).

^d Noise-Sensitive Receptor Closer than 1,000 feet (305 meters).

4.2.4.2 Parking Garage on Site 3

Implementation of this alternative would have short-term minor adverse impacts on the noise environment due to noise from heavy equipment and construction activities. Short-term impacts would be similar to those outlined for Site 3 in Section 4.2.4.3. Heavy equipment would be used for the construction of the parking garage. No appreciable sources of noise would be expected with the operation of the proposed parking garage. Implementing this alternative would not result in any long-term changes to the ambient noise environment. Overall noise conditions after completion of construction would return to that described in Section 3.2.2.

4.2.4.3 Parking Garage on Site 9

Implementation of this alternative would have short-term minor adverse impacts on the noise environment. Short-term impacts would be due to noise from heavy construction equipment. The nearest noise-sensitive receptor, the barracks, would experience substantial levels (greater than 62 dBA) of construction noise (see Table 4.2-3). Construction noise would not exceed the maximum allowed in the State of Maryland noise regulation for daytime activities (90 dBA). However, construction noise would be louder than the maximum allowed for nighttime activities (55 dBA). Restrictions on construction would likely be necessary between the hours of 10:00 p.m. and 7:00 a.m. No appreciable sources of noise would be expected with the operation of the proposed parking garage. Implementing this alternative would not result in any long-term changes to the ambient noise environment. Overall noise conditions after completion of construction would return to that described in Section 3.2.2.

4.2.4.4 Parking Garage on Site 10

Implementation of this alternative would have short-term minor and long-term negligible adverse impacts on the noise environment. Impacts would be similar to those outlined for the construction of a three-story parking garage at Site 9 in **Section 4.2.4.3** (see **Table 4.2-3**). No appreciable sources of noise would be expected with the operation of the proposed parking garage. Implementing this alternative would not result in any long-term changes to the ambient noise environment. Overall noise conditions after completion of construction would return to those described in **Section 3.2.2**.

4.3 Air Quality

The environmental impacts on local and regional air quality conditions near a proposed action are determined based on increases in regulated pollutant emissions compared to existing conditions and ambient air quality. With respect to the General Conformity Rule, impacts on air quality would be considered significant if a proposed action would result in an increase of a nonattainment or maintenance area's emissions inventory by 10 percent or more for one or more nonattainment pollutants, or if such emissions exceed *de minimis* threshold levels established in 40 CFR 93.153(b) for individual nonattainment pollutants.

4.3.1 No Action Alternative

The No Action Alternative would not result in changes in ambient air quality conditions if the utilities upgrade projects at NSA were not implemented. No construction activities would be undertaken, and no changes in operations would take place. A general conformity analysis and the permitting of stationary sources would not be required. No impacts on air quality would be expected.

4.3.2 Proposed Action

Implementing the Proposed Action would have both short-term minor adverse and long-term minor beneficial impacts on air quality. Short-term impacts would be due to air emissions generated during the construction of the proposed facilities. However, increases in emissions would be below the General Conformity Rule applicability thresholds and would not contribute to a violation of any Federal, state, or local air regulations. Long-term beneficial impacts would be due to introducing heating boilers and standby generators at the North Utility Plant, South Generator Facility, and Central Boiler Plant with overall NO_x and VOC emissions less than those of equipment being removed.

General Conformity. For the purpose of determining if the General Conformity Rule applies, all the projects were combined in a single analysis. All direct and indirect sources of air emissions were estimated and combined for all the utilities upgrades projects. Direct emissions are emissions that would be caused or initiated by a Federal action and occur at the same time and place as the action. Indirect emissions are defined as reasonably foreseeable emissions that would be caused by the action, but could occur later in time or be farther removed in distance from the action itself, and that the Federal agency can practicably control. Because all the projects and all the potential sites are within the same AQCR, the emissions have been combined throughout this discussion. More specifically, project-related direct and indirect emissions would result from the following:

- *Demolition and construction activities*—use of construction equipment, worker vehicles (e.g., bulldozers, backhoes), and VOC paints; and from gasses and fugitive particles emitted during paving and surface disturbances.

- *Operational activities*—use of emergency generators and boilers. Notably, operational emissions include decreases in emissions due to the removal of the existing emergency generators and boilers.

Regardless of the site ultimately chosen, estimated actual construction emissions would be similar. When compared to other alternatives, the Parking Alternatives would include demolition of existing structures, additional excavation, and the fabrication of a structured parking garage. Only slight variation in the overall emissions would be expected with the different alternatives. The inclusion of the parking garage is considered “worst case” and represents the upper boundary of actual emissions associated with any of the alternatives within this EIS. All direct and indirect emissions associated with the Parking Alternatives were estimated. The construction emissions were generated by estimating equipment use for utilities, site preparation, and construction for the proposed facilities and storage tanks, including the following:

- Multideck Parking Garage (2010)
- South Generator Facility (2010)
- North Utility Plant – Utility Lines (2011)
- North Utility Plant – Substation (2011)
- North Utility Plant – Facility (2011)
- Central Boiler Plant – Paving (2013)
- Central Boiler Plant – Facility (2013)
- Central Boiler Plant – Demolition of existing structure (2013).

Operational emissions include increases due to new boilers and emergency generators with controls, as well as decreases due to the removal of the existing boilers and emergency generators. Detailed methodologies for estimating air emissions are provided in **Appendix F**.

Applicability. To determine the applicability of the General Conformity Rule, air emissions from proposed construction activities and stationary and mobile sources were estimated (see **Table 4.3-1**). The total direct and indirect emissions of NO_x, VOCs, PM_{2.5}, and SO₂ in any given year, as well as for all years combined (2010–2013), are less than the applicability thresholds and less than 10 percent of the emissions in the region (see **Tables 4.3-2** and **4.3-3**). Therefore, regardless of the implementation schedule ultimately selected, the general conformity requirements do not apply, and no formal conformity determination is required. Notably, an ongoing net decrease in NO_x and VOC emissions is expected after the construction phase of the Proposed Action. Detailed methodologies for estimating air emissions and a draft Record of Nonapplicability to the General Conformity Rule are provided in **Appendix F**.

Table 4.3-1. Total Annual Emissions (Estimated) Subject to the General Conformity Rule

Year	Annual emissions (tpy)			
	NO _x	VOC	PM _{2.5}	SO ₂
2010	14.3	1.7	1.2	2.2
2011	6.7	0.8	0.8	1.1
2013	1.5	0.2	0.2	0.3
Operational Emissions*	(15.5)	(4.2)	1.3	1.5

Sources: SCAQMD 1993, USEPA 2003, USEPA 2005, USEPA 1995a

Note: * Signifies an ongoing net decrease in NO_x and VOC emissions.

Table 4.3-2. Actual Emissions (Estimated) Compared to Applicability Thresholds

Criteria pollutants	Greatest annual project-related emissions (tpy)	Applicability threshold (tpy)	Exceeds applicability threshold? (yes/no)
<i>O₃ (NO_x or VOCs): Marginal and moderate Nonattainment Areas inside an OTR</i>			
VOC	1.7	50	No
NO _x	14.3	100	No
<i>PM_{2.5} (PM_{2.5}, NO_x, SO₂)</i>			
PM _{2.5}	1.3	100	No
NO _x	14.3	100	No
SO ₂	2.2	100	No

Sources: 40 CFR 93.153; 71 FR 40420

Table 4.3-3. Actual Emissions (Estimated) Compared to Regional Emissions

Criteria pollutants	Greatest annual project-related emissions (tpy)	Regional emissions (tpy)	Percent regional emissions (%)	Regionally significant (> 10%)?
NO _x	14.3	83,742	< 0.001%	No
VOC	1.7	101,496	< 0.001%	No
PM _{2.5}	1.3	14,987	< 0.001%	No
SO ₂	2.2	122,261	< 0.001%	No

Sources: 40 CFR 93.153; MDE 2007 and MDE 2008a

4.3.2.1 North Utility Plant

Actual Emissions. The North Utility Plant would be equipped with an array of emergency generators with a total power output of 60 to 65 MW. For purposes of analysis, it was conservatively assumed that the facility would have a total power output of 65 MW and contain 26 2.5-MW Tier 2 generators. Furthermore, it was assumed that MDE would require a 100-hour federally enforceable limitation on the new generators. No other stationary sources of air emissions would be established at the facility. The estimated actual emissions associated with the North Utility Plant are presented in **Table 4.3-4**, and were included in the total operational emissions in the general conformity analysis. The total direct and indirect emissions from the entire project including those from the North Utility Plant would be less than the applicability thresholds, and would not be regionally significant (see **Tables 4.3-2** and **4.3-3**). These impacts would be considered minor. Detailed methodologies for estimating air emissions are provided in **Appendix F**.

The overall long-term emissions of both NO_x and VOCs would decrease with the implementation of the Proposed Action (see **Table 4.3-1**). These decreases would be due to replacing some emergency generators at the South Generator Facility, and introducing heating boilers at the Central Boiler Plant with overall emissions less than that equipment being removed. However, the estimated actual emissions from just the North Utility Plant are outlined in **Table 4.3-4** for comparative purposes.

Table 4.3-4. Actual Emissions (Estimated) – North Generator Facility

NO _x (tpy)	CO (tpy)	VOC (tpy)	PM* (tpy)	SO _x (tpy)
5.8	3.2	0.8	0.3	5.8

Note: * Conservatively assumed PM_{2.5} = PM₁₀ = PM

Regulatory Review. Permitting scenarios can vary based on the generators, timing of the projects, and the types of controls ultimately selected. These can differ in specific features from the ones described in this EIS. However, during the final design stage and the permitting process either (1) the actual equipment, controls, or operating limitations would be selected to reduce the PTE below the major source threshold; or (2) the NNSR permitting process would require emissions offsets be obtained at a 1 to 1.3 ratio from other previously decommissioned sources within the region. This cap-and-trade-type system is inherent to Federal and state air regulations, and leads to a forced reduction in regional emissions. Therefore, regardless of the ultimate permitting scenario, these impacts would be considered minor under NEPA.

Permitting requirements for proposed stationary sources are based on their overall PTE criteria pollutants. The estimated PTE for the proposed North Utility Plant is outlined in **Tables 4.3-5** and **4.3-6**. Total uncontrolled PTE of the regulated nonattainment pollutants VOCs, SO_x, and PM_{2.5} would not exceed the NNSR threshold (see **Table 4.3-5**). However, total uncontrolled emissions of NO_x would exceed the NNSR threshold of 25 tpy. Both SCR and the MDE-mandated federally enforceable limitation on the hours of operation of the generators would be required to reduce potential NO_x emissions below the NNSR threshold (see **Table 4.3-6**). Under this scenario, a Minor NSR construction permit would be required.

Table 4.3-5. Uncontrolled Potential to Emit – North Utility Plant

Criteria Pollutant	NO _x	CO	VOC	PM*	SO _x
PTE (tpy)	48.5	3.9	1.0	0.3	1.9
PSD Threshold (tpy)	-	250	-	250	-
NNSR Threshold (tpy)	25	-	25	100	100
Exceeds Threshold (Yes/No)	Yes	No	No	No	No

Note: * Conservatively assumed PM_{2.5} = PM₁₀ = PM

Table 4.3-6. Controlled Potential to Emit NO_x – North Utility Plant

Emissions Control	PTE NO _x (tpy)	NNSR threshold (tpy)	Exceeds threshold? (Yes/No)
SCR and Limited Hours of Operation (100 hours)	7.3	25	No

With the controls outlined herein, the overall potential to emit for NSA would likely decrease. If the final permitting scenario became such that NSA's contemporaneous emissions were the determining factor for NNSR, a thorough evaluation of them would be necessary. However, additional controls or changes in scheduling to meet the "netting" requirements under NNSR would not change the applicability determination under the General Conformity Rule and would only reduce further these already limited emissions and their impacts.

Emergency generators are not included in the 26 listed source categories subject to PSD review. Therefore, the applicable PSD threshold for the North Utility Plant is 250 tpy of any regulated attainment pollutant. Total uncontrolled emissions of the regulated attainment pollutants (i.e., CO, PM_{2.5}, and PM₁₀) would not exceed the PSD threshold, and therefore would not trigger PSD review (see **Table 4.3-5**). Additional controls would only further reduce these already limited emissions, and PSD permitting would still not be required.

Because the North Utility Plant is rated at less than 70 MW and no electricity would be exported off to the electric system, the CPCN requirements do not apply. NSA would be required to obtain a waiver from the Maryland Public Service Commission. This process would take approximately 2 months.

Title V Significant Permit Modifications would be required to establish federally enforceable limitations to reduce potential emissions below the thresholds. Submission of an application for these permit modifications would be required within 1 year of the first operation of the proposed generators.

NSPS limitations on emissions come into effect using a tiered approach over time; Tier 1 being the least restrictive and Tier 4 being the most. All generators would meet the NSPS requirements. The Tier 2 generators are the most suitable off-the-shelf generators at this time. Although not required for emergency applications, it is possible that Tier 4 generators could be available for nonemergency applications in the next few years. The generators ultimately selected would have emissions profiles consistent with or lower than the Tier 2 engines described herein. All stationary sources at NSA combined currently emit 0.67 tpy of HAPs. With the additional proposed stationary sources, the total HAP emissions would not change appreciably. All proposed stationary sources would meet NESHAP requirements.

Best Management Practices. BMPs would be required and implemented for both construction emissions and stationary point source emissions associated with the North Utility Plant. The construction would be accomplished in full compliance with current and pending Maryland regulatory requirements through the use of compliant practices or products. Irrespective of whether stationary sources are above or below the major source threshold, one or more air pollution control permits would be required for the facility. BMPs associated with the new permitted stationary sources of emissions would include the following:

- BACT review for each criteria pollutant
- MACT review for regulated HAPs and designated categories
- Air quality analysis (predictive air dispersion modeling), upon MDE's request
- Establishing procedures for measuring and recording emissions or process rates
- Meeting the NSPS and NESHAP requirements.

4.3.2.2 South Generator Facility

Actual Emissions. The South Generator Facility would be equipped with an array of emergency generators with a total power output of 47 to 52 MW. For purposes of analysis, it was conservatively assumed that the facility would have a total power output of 52.5 MW, and contain 21 2.5-MW Tier 2 generators. No other stationary sources of air emissions would be established at the facility. Furthermore, it was assumed that MDE would require a 100-hour federally enforceable limitation on the new generators. The estimated actual emissions associated with the South Generator Facility are presented in **Table 4.3-7**, and were included in the total operational emissions in the general conformity analysis. The total direct and indirect emissions from the entire project including those from the South Generator Facility would be less than the applicability thresholds, and would not be regionally significant (see **Tables 4.3-2** and **4.3-3**). These impacts would be considered minor. Detailed methodologies for estimating air emissions are provided in **Appendix F**.

Table 4.3-7. Actual Emissions (Estimated) – South Generator Facility

NO _x (tpy)	CO (tpy)	VOC (tpy)	PM* (tpy)	SO _x (tpy)
4.7	2.5	0.6	0.2	1.2

Note: * Conservatively assumed PM_{2.5} = PM₁₀ = PM

The overall long-term emissions of both NO_x and VOC would decrease with the implementation of the Proposed Action (see Table 4.3-1). These decreases would be due to replacing some emergency generators at the South Generator Facility, and introducing heating boilers at the Central Boiler Plant with overall emissions less than that equipment being removed. However, the estimated actual emissions from just the South Generator Facility are outlined in Table 4.3-7 for comparative purposes.

Regulatory Review. Permitting scenarios can vary based on the generators, timing of the projects, and the types of controls ultimately selected. However, similar to the North Utility Plant, regardless of the ultimate permitting scenario, these impacts would be considered minor under NEPA.

The estimated PTEs from the proposed South Generator Facility are outlined in Tables 4.3-5 and 4.3-6. Total uncontrolled PTE of VOCs, SO_x, and PM_{2.5} would not exceed NNSR thresholds (see Table 4.3-8). However, total uncontrolled emissions of NO_x would exceed the NNSR threshold of 25 tpy. Both SCR and the MDE-mandated federally enforceable limitation on the hours of operation of the generators would be required to reduce potential NO_x emissions below the NNSR threshold (see Table 4.3-9). Under this scenario, a Minor NSR construction permit would be required.

Table 4.3-8. Uncontrolled Potential to Emit – South Generator Facility

Criteria Pollutant	NO _x	CO	VOC	PM*	SO _x
PTE (tpy)	39.2	3.2	0.8	0.3	1.6
PSD Threshold (tpy)	-	250	-	250	-
NNSR Threshold (tpy)	25	-	25	100	100
Exceeds Threshold (Yes/No)	Yes	No	No	No	No

Note: * Conservatively assumed PM_{2.5} = PM₁₀ = PM

Table 4.3-9. Controlled Potential to Emit NO_x – South Generator Facility

Emissions Control	PTE NO _x (tpy)	NNSR threshold (tpy)	Exceeds threshold? (Yes/No)
SCR and Limited Hours of Operation (100 hours)	5.9	25	No

With the use of SCR, the South Generator Facility would not exceed the major source thresholds, and establishing federally enforceable limitations would not be necessary. Therefore, only a minor Title V permit modification would be required for the project.

Similar to the North Generator Facility, and for the same reasons, a CPCN and PSD review would not be required, and all proposed stationary sources would meet NSPS and NESHAP requirements. In addition, BMPs would be similar to those outlined for the North Generator Facility.

4.3.2.3 Central Boiler Plant

Actual Emissions. The Central Boiler Plant would be equipped with four 98 MMBtu/hr dual-fuel boilers, with a total heat capacity of 392 MMBtu/hr. No other stationary sources of air emissions would be established at the facility. The estimated actual emissions associated with the Central Boiler Plant are presented in **Table 4.3-10**, and were included in the total operational emissions in the general conformity analysis. The total direct and indirect emissions from the entire project including those from the Central Boiler Plant would be less than the applicability thresholds and would not be regionally significant (see **Tables 4.3-2** and **4.3-3**). These impacts would be considered minor. Detailed methodologies for estimating air emissions are provided in **Appendix F**.

Table 4.3-10. Actual Emissions (Estimated) – Central Boiler Plant

NO _x (tpy)	CO (tpy)	VOC (tpy)	PM* (tpy)	SO _x (tpy)
9.9	17.2	1.2	1.6	1.1

Note: * Conservatively assumed PM_{2.5} = PM₁₀ = PM

The overall long-term emissions of both NO_x and VOCs would decrease with the implementation of the Proposed Action (see **Table 4.3-1**). These decreases would be due to replacing some emergency generators at the South Generator Facility, and introducing heating boilers at the Central Boiler Plant with overall emissions less than that equipment being removed. However, the estimated actual emissions from just the Central Boiler Plant are outlined in **Table 4.3-10** for comparative purposes.

Regulatory Review. Permitting scenarios can vary based on the boilers, timing of the projects, and the types of controls ultimately selected. However, similar to the North Utility Plant, regardless of the ultimate permitting scenario these impacts would be considered minor under NEPA.

PSD review and permitting is required for sources emitting 100 tpy of any regulated pollutant for fossil fuel boilers (or combination of them) totaling more than 250 MMBtu/hr heat input (COMAR 26.11.01.01B (37)). Therefore, the applicable PSD threshold for the Central Boiler Plant is 100 tpy of any regulated attainment pollutant. The estimated PTE of the proposed Central Boiler Plant is outlined in **Tables 4.3-11** and **4.3-12**. Total uncontrolled emissions of the regulated attainment pollutants, PM and PM₁₀, would not exceed the PSD threshold. However, total uncontrolled emissions of CO would exceed the PSD threshold of 100 tpy. Limiting the total fuel throughput of natural gas and fuel oil would be one way to reduce the Central Boiler Plant PTE below the PSD threshold (see **Table 4.3-12**). This example demonstrates that limiting natural gas consumption to 2.25 billion cubic feet per year (approximately 8 months of constant use), and fuel oil to 30 days per year can reduce the CO PTE below the PSD threshold. Notably, the PTE would be for all four boilers running simultaneously; and since two are for redundancy purposes, this would be an unusual operating scenario. These fuel throughput limits would be enough to run two boilers year round on natural gas and 60 days on fuel oil. This is just one of many permitting scenarios. Other methods such as limiting the hours of operation or installing oxidation catalyst units could ultimately be incorporated into the design and permit process instead of, or in addition to, fuel limitations to meet permitting requirements.

Table 4.3-11. Uncontrolled Potential to Emit – Central Boiler Plant

Criteria Pollutant	NO _x	CO	VOC	PM*	SO _x
PTE (tpy)	313.7	134.8	9.1	12.7	12.0
PSD Threshold (tpy)	-	100	-	100	-
NNSR Threshold (tpy)	25	-	25	100	100
Exceeds Threshold (Yes/No)	Yes	Yes	No	No	No

Note: * Conservatively assumed PM_{2.5} = PM₁₀ = PM

Table 4.3-12. Controlled Potential to Emit – Central Boiler Plant

Emissions Control	PTE CO (tpy)	PSD threshold (tpy)	Exceeds threshold? (Yes/No)
Limited Fuel Throughput (Natural Gas 2.25 billion cubic feet per year)	99.5	100	No
Emissions Control	PTE NO _x (tpy)	NNSR threshold (tpy)	Exceeds threshold? (Yes/No)
Limited Fuel Throughput and FGR / Low NO _x Burners (30 ppm)	60.7	25	Yes
Limited Fuel Throughput and FGR / Low NO _x Burners (20 ppm)	47.2	25	Yes
FGR / Low NO _x Burners (30 ppm), and SCR	9.1	25	No

Total uncontrolled PTE of the regulated nonattainment pollutants VOC, SO_x, and PM_{2.5} would not exceed the NNSR threshold (see Table 4.3-11). However, total uncontrolled emissions of NO_x would exceed the NNSR threshold of 25 tpy. The use of FGR, low NO_x burners, and SCR would be required to reduce the Central Boiler Plant PTE NO_x below the NNSR threshold (see Table 4.3-12). These controls would be required with or without the limitations in fuel throughput. A Minor NSR construction permit would be required.

A Title V Significant Permit Modification would be required to establish federally enforceable limitations to reduce the PTE below the thresholds. Submission of an application for these permit modifications would be required within 1 year of the first operation of the proposed boiler plant. All boilers would meet NSPS and NESHAP requirements. In addition, BMPs would be similar to those outlined for the North Generator Facility.

4.3.2.4 Utility Corridors

Installation of power distribution lines and transmission lines would disturb up to 90,000 ft² and 53,000 ft² of the NSA campus, respectively. Air emissions associating with utility trenching and installation would primarily consist of fugitive dust from ground-disturbing activities. No stationary sources of air emissions, other than those described in Sections 4.3.2.1, 4.3.2.2, and 4.3.2.3, would be

established as a result of utility line installation. Impacts on air quality would be considered short-term and minor. Detailed methodologies for estimating air emissions are provided in **Appendix F**.

4.3.3 Facility Alternatives

Impacts on air quality are outlined under the Proposed Action and would not vary with the Facility Alternatives. Air pollutants of concern, air inventories, and the air quality analysis within this EIS have a regional scope. All sites outlined in the Facility Alternatives are within the same AQCR and are relatively close together. Selection of different facility locations would have no bearing on the air quality analysis in this EIS.

4.3.4 Parking Alternatives

Impacts on air quality are outlined under the Proposed Action and would not vary appreciably with the Parking Alternatives. When compared to other alternatives, the Parking Alternatives would include demolition, additional excavation, and the fabrication of a structured parking garage. Only slight variations in the overall emissions would be expected with the different alternatives. This analysis considered the upper boundary of actual emissions associated with any of the parking alternatives within this EIS.

All direct and indirect emissions associated with the parking alternatives were estimated and were included in the total construction emissions in the general conformity analysis. The total direct and indirect emissions from the entire project including those from all the parking alternatives would be less than the applicability thresholds, and would not be regionally significant (see **Tables 4.3-2 and 4.3-3**). These impacts would be considered minor. Detailed methodologies for estimating air emissions are provided in **Appendix F**. Notably, there are no additional stationary sources of air emissions associated with any of the parking alternatives. Therefore, neither construction nor operating air permits would be required.

4.4 Geological Resources

Protection of unique geological features (e.g., prime farmland and other unique soils), minimization of soil erosion, minimization of disturbing previously undisturbed areas, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential impacts of a proposed action on geological resources. Generally, adverse impacts can be avoided or minimized if proper construction techniques, erosion-control measures, and structural engineering design are incorporated into project development.

4.4.1 No Action Alternative

Under the No Action Alternative, DOD would not construct a North Utility Plant, South Generator Facility, or Central Boiler Plant. Conditions would remain as described in **Section 3.4**. No impacts on geological resources would be expected.

4.4.2 Proposed Action

In general, the Proposed Action would not be expected to impact topography or geology. Soils would be disturbed by construction activities. Vegetation would also be removed at Sites 4 and 6, which could contribute to soil instability and erosion and sedimentation. Soils previously disturbed or modified would not be expected to be adversely affected. Maryland storm water management guidelines require that a

storm water management plan be prepared for construction projects that would result in more than 5,000 ft² of land disturbance. The storm water management plan should include supporting computations, drawings, and sufficient information describing the manner, location, and type of measures in which storm water runoff would be managed over the entire project. The storm water management measures must be designed consistent with the 2000 Maryland Stormwater Design Manual Volumes I and II (MDE 2000). The 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control (MDE 1994) and the Erosion and Sediment Control Regulations (COMAR 26.17.01) establish requirements and provide guidelines for submittal of erosion- and sediment-control plans to MDE's Water Management Administration for approval. The erosion- and sediment-control regulations require the preparation, approval, and implementation of an erosion- and sediment-control plan for all land-disturbing activities that disturb greater than or equal to 5,000 ft² of area, or involve grading activities that result in greater than or equal to 100 cubic yards of earth movement. The purpose of the erosion- and sediment-control plan should provide sufficient information, drawings, computations, and notes to describe how potential soil erosion and off-site sedimentation associated with a land-disturbing activity would be minimized. Implementation of erosion-, sediment-, and storm water management plans consistent with MDE requirements would minimize potential for impacts on soils both on and off the project site. See **Section 4.5** for a discussion on the environmental consequences of the Proposed Action on hydrology. BMPs could include actions such as revegetation of a site after clearing and grading, and storm water controls to allow flow to infiltrate to groundwater as opposed to runoff to surface waters. Minor adverse impacts due to potential increased sheet flow as a result of increased impervious surfaces, grading, contouring, and trenching would be expected to be temporary and mitigated by the implementation of the BMPs developed during preparation of the storm water management and erosion- and sediment-control plans.

Increased soil erosion as a result of the construction activities would be minimized with the implementation of BMPs established during the development of the storm water management and erosion- and sediment-control plans. Implementing these BMPs would minimize adverse impacts associated with sediments that could potentially be transported from construction sites. Construction activities expected to directly impact the existing soils would result from grading, excavating, placement of fill, compaction, and mixing or augmentation necessary to prepare the sites for development of the Proposed Action.

No impacts on prime farmland would occur as a result of project implementation because there are no prime farmland soils mapped within the facility location and parking alternative sites.

4.4.2.1 North Utility Plant

No impacts on geology would be expected as a result of construction or operation of the North Utility Plant. Minor adverse impacts on soil due to erosion would be expected. If the North Utility Plant would be constructed at Site 4, moderate adverse impacts on natural soil structure and soil organisms would be expected. Soil erosion and sediment controls would minimize impacts on soils.

4.4.2.2 South Generator Facility

No impacts on geology would be expected as a result of construction or operation of the South Generator Facility. Minor adverse impacts on soil due to erosion would be expected. If the South Generator Facility would be constructed at Site 6, minor adverse impacts on natural soil structure and soil organisms would be expected. Soil erosion and sediment controls would minimize impacts on soils.

4.4.2.3 Central Boiler Plant

Construction and operation of the Central Boiler Plant is not anticipated to result in impacts on geology. Minor adverse impacts on soil would be expected due to soil erosion. Soil erosion and sediment controls would minimize impacts on soils.

4.4.2.4 Utility Corridors

Utility lines would be installed in disturbed areas along existing utility corridors or roadways. Trenching for distribution lines would be expected to disturb as much as 90,000 ft², and trenching for transmission lines could disturb as much as 53,000 ft². The actual area disturbed would depend on whether overhead or underground lines are installed. Underground lines would have a greater potential to disturb soil and impact geological resources. Utility line installation would occur over time and in different areas of the NSA campus as various utility segments are completed. Additionally, ground disturbance would occur in areas of the campus that have been previously disturbed (e.g., along existing utility corridors and roadways), or in areas that are being developed as a part of this Proposed Action (i.e., Sites 4 or 6). Minor adverse impacts on soil would be expected due to soil erosion. Soil erosion and sediment controls would minimize impacts on soils.

4.4.3 Facility Alternatives

4.4.3.1 Sites 1, 2, 3, 5 (Preferred Alternative), 7, and 8 (Preferred Alternative)

Site locations with soils mapped as Urban Land or Downer-Hammonton Urban Land Complex have been previously disturbed and site-specific surveys would be conducted at each site to determine if engineering limitations exist. These sites are Sites 1, 2, 3, 5, 7, and 8. BMPs developed consistent with the storm water management and erosion- and sediment-control plans would be implemented to mitigate any unavoidable impacts. Please see **Section 4.4.2** for a discussion on BMPs and storm water management and erosion- and sediment-control plans that would be developed as part of site development. Short-term negligible adverse impacts would be expected.

4.4.3.2 Site 4 (Preferred Alternative)

Minor to moderate impacts on geology and soils would be expected at Site 4. Minor to moderate adverse impacts on natural soil structure and soil organisms would be expected. Impacts on soils, including sedimentation and erosion, would be reduced to negligible by implementing BMPs. Examples of erosion and sediment controls and BMPs could include temporary sediment basins, sediment fencing, or revegetation for ground stabilization. Because the site is within a wooded area, the soils might be more susceptible to permeation by spills of petroleum products or hazardous liquids than those in Sites 1, 2, and 3, which are currently located under existing parking lots and are therefore much more compacted and impermeable. Alteration of Site 4 would disturb soils mapped as Chillum loam, with 2 to 5 percent slopes, and Falsington sandy loam, with slopes ranging from 0 to 2 percent. The Chillum loam has no engineering limitations. The Falsington sandy loam is primarily found in the southeastern corner of Site 4, composing approximately 10 percent of the site. As this soil unit could pose construction issues due to depth of saturation and ponding, BMPs would be implemented as determined necessary in the design and construction processes for mitigation purposes.

4.4.3.3 Site 6

No impacts on geology would be expected at Site 6. Minor adverse impacts on natural soil structure and soil organisms would be expected where soils have not been previously disturbed. Erosion and sediment

controls and storm water BMPs prescribed in the storm water management and erosion- and sediment-control plans would be implemented to minimize unavoidable impacts on soil. Although Site 6 is forested, it is mapped as being underlain by Urban Land and the Downer-Hammonton Urban Land Complex. Because the site is within a wooded area, the soils might be more susceptible to permeation by spills of petroleum products or hazardous liquids than those in Sites 5 and 7, which are currently covered by existing parking lots and are therefore much more compacted and impermeable

4.4.4 Parking Alternatives

4.4.4.1 Surface Parking Lot on Sites 4 and 6

Construction of a surface parking structure at Sites 4 or 6 would have similar impacts as those described in Sections 4.4.3.1 and 4.4.3.2. Soil erosion and sediment controls and storm water BMPs prescribed in the storm water management and erosion- and sediment-control plans would be implemented to minimize unavoidable impacts on soils. Sites 4 and 6 are both undeveloped forested areas with soils of an assumed higher permeability than those underneath existing parking lots. This could result in a slightly higher risk of soil permeation and susceptibility to groundwater contamination should a spill occur onsite.

4.4.4.2 Parking Garage on Site 3

Development of a three-story parking garage on an existing parking lot would not entail any changes to geology or soils. Any disturbance of soils would occur on previously disturbed soils. Therefore no impact on previously undisturbed geology or soils would be expected under this alternative. Soil erosion and sediment controls and storm water BMPs prescribed in the storm water management and erosion- and sediment-control plans would be implemented to minimize impacts associated with erosion and sedimentation or storm water runoff during and following site development.

4.4.4.3 Parking Garage on Site 9

Site 9 is currently a parking lot, and is underlain by Urban Land and the Downer-Hammonton Urban Land Complex. No impacts on previously undisturbed geology or soils would be expected at Site 9. Soil erosion and sediment controls and storm water BMPs prescribed in the storm water management and erosion- and sediment-control plans would be implemented to minimize impacts associated with erosion and sedimentation or storm water runoff during and following site development.

4.4.4.4 Parking Garage on Site 10

Site 10 is currently a parking lot, and is primarily underlain by Urban Land and the Downer-Hammonton Urban Land Complex. However, the northeastern corner (approximately 10 percent of the site) is mapped as the Evesboro and Galestown soil series, with 5 to 10 percent slopes. Effects on soils, including sedimentation and erosion, would be reduced to negligible by implementing the BMPs. These soils have very minor engineering limitations due to slope. Construction BMPs would be implemented to mitigate for any slope-related engineering limitations. Soil erosion and sediment controls and storm water BMPs prescribed in the storm water management and erosion- and sediment-control plans would be implemented to minimize unavoidable impacts associated with erosion and sedimentation or storm water runoff during and following site development. Examples of erosion and sediment controls and BMPs could include temporary sediment basins, sediment fencing, or revegetation for ground stabilization.

4.5 Water Resources

Evaluation of impacts on water resources is based on water availability, quality, and use; existence of floodplains; and associated regulations. A proposed action would be adverse if it were to substantially affect water quality, substantially reduce water availability or supply to existing users, or threaten or damage unique hydrologic characteristics. The potential impact of flood hazards on a proposed action is important if such an action occurs in an area with a high probability of flooding.

4.5.1 No Action Alternative

Under the No Action Alternative, DOD would not construct a North Utility Plant, South Generator Facility, or Central Boiler Plant. Conditions would remain as described in **Section 3.5**. No impacts on water resources would be expected.

4.5.2 Proposed Action

Implementation of the Proposed Action has the potential to result in short-term and long-term minor adverse impacts on water resources.

Short-Term Effects. Construction activities, such as grading, excavating, and recontouring of the soil, would result in soil disturbance. During storm events, overland storm flow picks up and carries contaminants (e.g., soil or leaked motor oil) directly into receiving surface water bodies or possibly into the surficial Upper Patapsco Aquifer. The construction contractor would obtain all necessary construction permits and comply with the requirements and guidelines set forth in those permits to minimize potential for adverse impacts. The Proposed Action would require storm water management plans and soil erosion and sedimentation controls. All construction BMPs would follow the guidelines provided in Fort Meade's Integrated Natural Resources Management Plan, Federal and state permitting processes, and MDE's Stormwater Design Manual.

Assuming proper use of BMPs to contain construction impacts on the active construction site, minor adverse impacts on water resources could occur. In the event of a spill or leak of fuel or other construction-related products, there could be adverse impacts on the surficial Upper Patapsco Aquifer. All construction equipment would be maintained according to the manufacturer's specifications to ensure it is in proper working order. All fuels and other potentially hazardous materials would be contained and stored appropriately. In the event of a spill, procedures identified in the NSA's SPCC Plan would be followed to quickly contain and clean up a spill. See **Section 4.10** for a discussion on hazardous materials and wastes. There remains the possibility that a spill or leak could occur, but implementation of the BMPs identified in a site-specific Storm Water Pollution Prevention Plan (SWPPP) would minimize the potential for and extent of associated contamination.

Long-Term Effects. The Proposed Action would result in negligible increases in the use of potable water use as a result of some additional contract personnel maintaining the proposed facilities. The North Utility Plant, South Generator Facility, or Central Boiler Plant would not be expected to use water in excess of what is currently being used (see **Section 4.8**). The Patuxent Aquifer supplies water for Fort Meade. The long-term use of the Patuxent Aquifer as a result of implementing the Proposed Action would be a negligible increase in the overall use of the aquifer.

The Proposed Action could result in small increases in impervious surface. Many of the sites under consideration for the facilities are already impervious parking lots. It is anticipated that the overall building footprint would be 183,000 ft² (4.2 acres), which would include the North Utility Plant, the South Generator Facility, and the Central Boiler Plant and associated ASTs. However, the increase in

impervious surfaces would depend on the facility alternative as well as the parking alternative ultimately selected (see Sections 4.5.3 and 4.5.4). The creation of impervious surfaces has the potential to decrease storm water quality and increase storm water quantity and flow velocity, particularly during large rain events. Overland storm flows pick up contaminants and can carry them directly into receiving water bodies. Large areas of impervious pavement that once were pervious soils increase the speed at which storm water enters channels; if a stream channel cannot accommodate the increased volume of storm water, areas downstream can flood. In addition, the channel morphology of the receiving streams could adjust to accommodate increased flows often resulting in streambank erosion and associated impacts on downstream water quality and habitat. An increase in impervious areas can also reduce the land that is available for groundwater recharge.

Long-term operational activities associated with the Proposed Action have the potential to moderately adversely affect surface water and groundwater quality as a result of nonpoint source pollution. During rain events, storm water picks up pollutants and could discharge them to the Little Patuxent River or its tributaries, or contaminated runoff could infiltrate into groundwater resulting in long-term moderate adverse impacts on water quality. However, these impacts would be mitigated through planned implementation of the various applicable Federal and state storm water permitting requirements so that no water quality violations would be expected; water quality would be maintained by using BMPs and storm water management as described in the following text.

Under the Proposed Action, a storm water management system would be designed to contain and treat storm water so that potential flooding and contamination are minimized. In addition to the site-specific SWPPP developed by the construction contractors, the Code of Maryland Regulations (COMAR 26.17.01 and 26.17.02) requires that a storm water management plan be implemented to control the water quantity and quality of storm water runoff resulting from site development. The MDE has regulations requiring that the release rate generated from the developed site post-construction should not exceed the rate generated when undeveloped (USACE 2007). A storm water management plan is required by MDE for all new development and for development disturbing more than 5,000 ft² of land. Adherence to MDE requirements would limit permitted storm water runoff to predevelopment levels.

Storm water BMPs under the MDE storm water program would ultimately attenuate the potential long-term adverse impacts the Proposed Action could have on water quality and quantity.

Post-construction runoff control is accomplished using a variety of structural and nonstructural BMPs. Specific BMPs would be developed during the final design stage of construction and included in the appropriate permits. Structural BMPs could include combinations of the following:

- Construction of ponds (e.g., dry extended detention ponds, wet ponds)
- Infiltration practices (e.g., infiltration basin, infiltration trench, porous pavements)
- Filtration practices (e.g., bioretention, sand and organic filters)
- Vegetative practices (e.g., storm water wetland, grassed swales, grassed filter strip)
- Runoff pretreatment practices (e.g., catch basin, in-line storage, manufactured products for storm water inlets).

The NSA campus is not in the 100-year floodplain, and construction of the Proposed Action at the various sites would not be expected to stimulate development within the floodplain.

4.5.2.1 North Utility Plant

Short-term minor adverse impacts on water resources could occur during construction activities, and long-term minor adverse impacts on water resources could occur as a result of power plant operations. General short-term and long-term adverse impacts are discussed in **Section 4.5.2**. Use of BMPs and storm water management would minimize the potential for adverse impacts on water quantity and quality. Site-specific analyses for alternative sites for the North Utility Plant (Sites 1, 2, 3, and 4) are in **Section 4.5.3**.

The approximate building footprint of the proposed North Electrical Substation would be 45,000 ft², and the approximate footprint of the proposed North Generator Facility would be approximately 60,000 ft². Storm water management plans and soil erosion and sedimentation controls would be required by MDE. A stream crossing for site access and transmissions lines would likely be required to access the North Utility Plant at Site 4. A formal delineation of wetlands and waters of the United States was conducted on December 2, 2008, on Site 4 and along the unnamed perennial stream between the upstream end of the permanently flooded storm water pond near the northeastern corner of Site 1 and the existing stream crossing and entrance from Canine Road to the parking lot associated with Site 3. In addition, any wetlands in proximity to the existing staging and equipment storage area adjacent to the northeastern corner of Site 4 were also delineated. All wetlands and other waters of the United States within the assessment area were delineated (see **Figure 3.5-3**). A jurisdictional determination of wetlands and waters of the United States was requested from the USACE Baltimore District and would be obtained prior to implementing any actions that could impact the delineated areas. Any additional required site-specific review and study would be accomplished in accordance with CWA Section 401 and 404 and MDE Wetlands and Waterways Division permitting requirements. The Section 404 and MDE Wetlands and Waterways Division permitting process would identify whether additional mitigation measures are required. It is anticipated that facilities could be located to avoid impacts on wetlands and waters of the United States in proximity to the project area with the exception of a possible stream crossing necessary for access to the site.

The proposed North Generator Facility would require storage of diesel fuel, urea, waste oil, and other materials. All materials would be handled and stored in accordance with existing regulations and management plans, minimizing the potential for leaks and spills. The proposed generators would use closed systems for cooling water, so minimal water use and wastewater discharge would be required.

4.5.2.2 South Generator Facility

Short-term minor adverse impacts on water resources could occur during construction activities, and long-term minor adverse impacts on water resources could occur as a result of power plant operations. General short-term and long-term adverse impacts are discussed in **Section 4.8.2**. Use of BMPs and storm water management would minimize the potential for adverse impacts on water quantity and quality. Site-specific analyses for alternative sites for the South Generator Facility (Sites 5, 6, and 7) are in **Section 4.5.3**.

The approximate building footprint of the proposed South Generator Facility would be 60,000 ft² (1.4 acres). In accordance with Maryland regulations, erosion and sediment controls would be implemented for any earth disturbance greater than 5,000 ft².

The proposed South Generator Facility would require storage of diesel fuel, urea, waste oil, and other materials. All materials would be handled and stored in accordance with existing regulations and management plans, minimizing the potential for leaks and spills. The proposed generators would use closed systems for cooling water, so minimal water use and wastewater discharge would be required.

4.5.2.3 Central Boiler Plant

Short-term minor adverse impacts on water resources would be expected during construction activities, and long-term minor adverse impacts on water resources could occur as a result of boiler operations. General short-term and long-term adverse impacts are discussed in **Section 4.5.2**. Use of BMPs and storm water management would minimize the potential for adverse impacts on water quantity and quality. Site-specific analyses for alternative sites for the Central Boiler Plant (Sites 7 and 8) are in **Section 4.5.3**.

The approximate building footprint of the proposed Central Boiler Plant and ASTs would be approximately 18,000 ft² (0.5 acres). In accordance with Maryland regulations, erosion and sediment controls would be implemented for any earth disturbance greater than 5,000 ft².

The proposed Central Boiler Plant would require storage of No. 2 fuel oil as well as caustic materials. All materials would be handled and stored in accordance with existing regulations and management plans, minimizing the potential for leaks and spills. The proposed Central Boiler Plant would replace an existing boiler plant, so negligible changes in water use and wastewater discharge would occur since the current boiler is already using and discharging wastewater. It is anticipated that wastewater discharge for the proposed Central Boiler Plant would be similar to the existing boiler plant, which discharges wastewater through an oil/water separator in an adjacent building.

4.5.2.4 Utility Corridors

Short-term minor adverse impacts on water resources would be expected during utility trenching activities. No long-term adverse impacts on water resources would be expected.

Utility lines would be installed in disturbed areas along existing utility corridors or roadways to the greatest extent possible. It is anticipated that installation of electrical distribution lines would disturb as much as 90,000 ft² and transmission lines could disturb as much as 53,000 ft² for a total maximum utility disturbance area of 143,000 ft² (3.3 acres). As described under **Section 4.5.2**, sediment- and erosion-control measures would be used to contain storm water and soil to the active construction site. Since utility work would occur in stages as work is accomplished along a utility corridor, overall adverse impacts would be expected to be minor.

There is the potential that utility trenching could occur near the tributary that flows just south of Sites 3 and 4 and north of Canine Road. A formal delineation of wetlands and waters of the United States was conducted on December 2, 2008, on Site 4 and along the unnamed perennial stream between the upstream end of the permanently flooded storm water pond near the northeastern corner of Site 1 and the existing stream crossing and entrance from Canine Road to the parking lot associated with Site 3. In addition, any wetlands in proximity to the existing staging and equipment storage area adjacent to the northeastern corner of Site 4 were also delineated. All wetlands and other waters of the United States within the assessment area were delineated (refer to **Figure 4.5-3**). A jurisdictional determination of wetlands and waters of the United States was requested from the USACE Baltimore District and would be obtained prior to implementing any actions that could impact the unnamed perennial stream. Direct impacts on the stream would be avoided or minimized to the maximum extent possible and any unavoidable impacts would be mitigated. Any additional required site-specific review and study would be accomplished in accordance with CWA Sections 401 and 404 and MDE Wetlands and Waterways Division permitting requirements.

4.5.3 Facility Alternatives

4.5.3.1 Site 1

Short-term minor adverse impacts on water resources similar to those discussed in **Section 4.5.2** could occur as a result of transport of sediments and other pollutants in runoff into the adjacent stream. Site 1 is located near a perennial stream and a permanently flooded storm water pond. There is a potential for erosion and associated sedimentation into the stream during construction. In the event that this tributary would be impacted by construction, additional site-specific review and study would be needed to ensure that all Sections 401 and 404 permitting requirements are met. Erosion and sediment controls and storm water management practices implemented consistent with NSA's SWPPP and MDE's Stormwater Design Manual would minimize potential for adverse impacts associated with erosion and sedimentation. Implementation of BMPs and adherence to storm water management plans and soil erosion and sedimentation controls would mitigate potential adverse impacts.

Long-term impacts on water resources would be negligible. Site 1 is currently a parking lot, so no increase in impervious surfaces would be expected. All fuels and other potentially hazardous materials stored onsite during operations would be contained and stored appropriately. In the event of a spill, procedures identified in the NSA's SPCC Plan would be followed to quickly contain and clean up a spill.

4.5.3.2 Site 2

Short-term minor adverse impacts on water resources similar to those discussed in **Section 4.5.2** would be expected as a result of constructing the North Utility Plant at Site 2. Implementation of BMPs and adherence to storm water management plans and soil erosion and sedimentation controls would mitigate any potential adverse impacts. There are no surface waters or wetlands in proximity to Site 2, so no impacts on wetlands would be expected as a result of constructing the North Utility Plant.

Long-term impacts on water resources would be negligible. Site 2 is currently developed, so no increase in impervious surfaces would be expected. All fuels and other potentially hazardous materials stored onsite during operations would be contained and stored appropriately. In the event of a spill, procedures identified in the NSA's SPCC Plan would be followed to quickly contain and clean up a spill.

4.5.3.3 Site 3

Short-term minor adverse impacts on water resources similar to those discussed in **Section 4.5.2** would be expected as a result of constructing the North Utility Plant at Site 3. Site 3 is bordered to the north and east by forested land. Storm water runoff from Site 3 would travel towards a nearby perennial stream on the southeastern border of the site. There is a potential for erosion and associated sedimentation into the stream during construction. In the event that this tributary would be impacted by construction, additional site-specific review and study would be needed to ensure that all Sections 401 and 404 and MDE Wetlands and Waterways Division buffer and permitting requirements are met. Erosion and sediment controls and storm water management practices implemented consistent with NSA's SWPPP and MDE's Stormwater Design Manual would minimize potential for adverse impacts associated with erosion and sedimentation. Implementation of BMPs and adherence to storm water management plans and soil erosion and sedimentation controls would mitigate any potential adverse impacts.

Long-term impacts on water resources would be negligible. Site 3 is currently developed, so no increase in impervious surfaces would be expected. All fuels and other potentially hazardous materials stored onsite during operations would be contained and stored appropriately. In the event of a spill, procedures identified in the NSA's SPCC Plan would be followed to quickly contain and clean up a spill.

4.5.3.4 Site 4 (Preferred Alternative)

Short-term and long-term minor adverse impacts on water resources could result from implementation of the Proposed Action at Site 4 because Site 4 is undeveloped. An unnamed perennial stream flows along the southeastern boundary just outside of Site 4 (see **Figure 4.5-3**). Storm water runoff from Site 4 could potentially flow across Site 3 or other roads or parking areas picking up pollutants, and potentially impacting water quality if the runoff reaches surface or groundwater resources. MDE requires that storm water management plans and soil erosion and sedimentation controls be approved prior to any new development of land. BMPs would be implemented to mitigate any potential impacts.

A formal delineation of wetlands and waters of the United States was conducted on December 2, 2008, on Site 4 and along the unnamed perennial stream between the upstream end of the permanently flooded storm water pond near the northeastern corner of Site 1 and the existing stream crossing and entrance from Canine Road to the parking lot associated with Site 3. In addition, any wetlands in proximity to the existing staging and equipment storage area adjacent to the northeastern corner of Site 4 were also delineated. All wetlands and other waters of the United States within the assessment area were delineated (see **Figure 4.5-3**). A jurisdictional determination of wetlands and waters of the United States was requested from the USACE Baltimore District and would be obtained prior to implementing any actions that could impact the delineated areas. Direct impacts on the stream would be avoided or minimized to the maximum extent possible and any unavoidable impacts would be mitigated. Any additional required site-specific review and study would be accomplished in accordance with CWA Sections 401 and 404 and MDE Wetlands and Waterways Division permitting requirements. The Section 404 and MDE Wetlands and Waterways Division permitting process would identify whether additional mitigation measures are required.

At the time of publication of the Final EIS, only high-level engineering design has occurred. Therefore a conservative evaluation of impacts to the wetland has been made. If Site 4 was selected, it was conservatively assumed that the proposed access road would be constructed in a corridor that is 100 ft (30.5 meters) wide and the road would cross at the widest part of the stream. At its widest part, the stream is 71 ft (21.6 meters) wide. Therefore, the maximum number of acres of wetlands that would be disturbed is assumed to be 7,100 ft² (660 square meters) or 0.163 acres (this does not include the 25-foot buffer [approximately 5,000 ft²] as required by the MDE's Water Management Administration under the Maryland Nontidal Wetlands Protection Act). After construction, most of the construction corridor wetland would be restored. Final project design and implementation of BMPs and mitigation measures would limit impacts on wetland areas to the maximum extent practical.

Construction activities for the North Utility Plant could result in a potential increase in surface water runoff due to sheet flow as a result of an increase in impervious surfaces. There is a potential for erosion and associated sedimentation into streams during construction. Erosion and sediment controls and storm water management practices implemented consistent with NSA's SWPPP and MDE's Stormwater Design Manual would minimize potential for adverse impacts associated with the increase in impervious surfaces and erosion and sedimentation. Post-construction runoff control is accomplished using a variety of structural and nonstructural BMPs. Specific BMPs would be developed during the final design stage of construction and included in the appropriate permits.

Long-term minor adverse impacts would be expected from increases in impervious surfaces. The approximate building footprint of the proposed North Electrical Substation would be 45,000 ft² and the approximate footprint of the proposed North Generator Facility would be approximately 60,000 ft². In accordance with Maryland regulations, erosion and sediment controls would be implemented for any earth disturbance greater than 5,000 ft². Storm water management plans and soil erosion and sedimentation controls would be required by MDE. All fuels and other potentially hazardous materials

stored onsite during operations would be contained and stored appropriately. In the event of a spill, procedures identified in the NSA's SPCC Plan would be followed to quickly contain and clean up a spill.

4.5.3.5 Site 5 (Preferred Alternative)

Short-term minor adverse impacts on water resources similar to those discussed in **Section 4.5.2** would be expected as a result of constructing the South Generator Facility at Site 5. Site 5 is developed land, and no streams or other water bodies are in proximity to the site. Storm water management plans and soil erosion and sedimentation controls would be adhered to in order to effectively minimize potentially adverse impacts on water resources. Construction and operational BMPs would be implemented to reduce potential impacts on water resources. There are no wetlands in proximity to Site 5, so no impacts on wetlands would be expected as a result of constructing the South Generator Facility.

Long-term impacts would be negligible. Site 5 is currently developed, so negligible increases in impervious surfaces would be expected. All fuels and other potentially hazardous materials stored onsite during operations would be contained and stored appropriately. These materials are already stored at Site 5 for the existing generator facility. In the event of a spill, procedures identified in the NSA's SPCC Plan would be followed to quickly contain and clean up a spill.

4.5.3.6 Site 6

Short-term and long-term minor adverse impacts on water resources similar to those discussed in **Section 4.5.2** would be expected as a result of constructing the South Generator Facility at Site 6. Site 6 is currently a forested site surrounded by development. As such, increased impervious surfaces could impact storm water velocity as well as water quality and groundwater recharge. MDE requires that storm water management plans and soil erosion and sedimentation controls be approved prior to any new development of land. Soil erosion and sediment controls and storm water BMPs prescribed in the storm water management and erosion- and sediment-control plans would be implemented to minimize unavoidable impacts associated with erosion and sedimentation or storm water runoff during and following site development. Implementation of soil erosion and sediment controls and storm water BMPs prescribed in the storm water management and erosion- and sediment-control plans would minimize impacts associated with storm water runoff during and following site development. There are no wetlands in proximity to Site 6, so no impacts on wetlands would be expected as a result of constructing the South Generator Facility.

Long-term minor adverse impacts would be expected from increases in impervious surfaces. The approximate building footprint of the proposed South Generator Facility would be approximately 60,000 ft² (1.4 acres). In accordance with Maryland regulations, erosion and sediment controls would be implemented for any earth disturbance greater than 5,000 ft². Long-term impacts on water resources from operations would be negligible. All fuels and other potentially hazardous materials stored onsite during operations would be contained and stored appropriately. In the event of a spill, procedures identified in the NSA's SPCC Plan would be followed to quickly contain and clean up a spill.

4.5.3.7 Site 7

Short-term minor adverse impacts similar to those discussed in **Section 4.5.2** would be expected on water resources should the proposed South Generator Facility or Central Boiler Plant be constructed at Site 7. Site 7 is developed land, and no streams or other water bodies are proximal to the site. Storm water management plans and soil erosion and sedimentation controls would be adhered to in order to effectively minimize potentially adverse impacts on water resources. Construction and operational BMPs would be implemented to reduce potential impacts on water resources. There are no wetlands in proximity to Site

7, so no impacts on wetlands would be expected as a result of constructing either the South Generator Facility or the Central Boiler Plant.

Long-term impacts would be negligible. Site 7 is currently developed and surrounded by developed land, so negligible increases in impervious surfaces would be expected. All fuels and other potentially hazardous materials stored onsite during operations would be contained and stored appropriately. In the event of a spill, procedures identified in the NSA's SPCC Plan would be followed to quickly contain and clean up a spill.

4.5.3.8 Site 8 (Preferred Alternative)

Minor adverse impacts similar to those discussed in **Section 4.5.2** on water resources would be expected at Site 8. Site 8 is developed land, and no streams or other water bodies are in proximity to the site. Storm water management plans and soil erosion and sedimentation controls would be adhered to in order to effectively minimize potentially adverse impacts on water resources. Construction and operational BMPs would be implemented to reduce potential impacts on water resources. There are no wetlands in proximity to Site 7, so no impacts on wetlands would be expected as a result of constructing the Central Boiler Plant.

Long-term impacts would be negligible. Site 8 is currently developed and surrounded by developed land, so negligible increases in impervious surfaces would be expected. All fuels and other potentially hazardous materials stored onsite during operations would be contained and stored appropriately. These materials are already stored at Site 8 for the existing boiler plant. In the event of a spill, procedures identified in the NSA's SPCC Plan would be followed to quickly contain and clean up a spill.

4.5.4 Parking Alternatives

4.5.4.1 Surface Parking Lot on Sites 4 and 6

Construction of a surface parking lot at Sites 4 or 6 would have similar impacts of those described in **Sections 4.5.3.4** and **4.5.3.6**. BMPs and storm water management plans and soil erosion and sediment controls would mitigate impacts on water resources.

An unnamed perennial stream flows along the southeastern boundary just outside of Site 4. A formal delineation of wetlands and waters of the United States was conducted on December 2, 2008, on Site 4 and along the unnamed perennial stream between the upstream end of the permanently flooded storm water pond near the northeastern corner of Site 1 and the existing stream crossing and entrance from Canine Road to the parking lot associated with Site 3. In addition, any wetlands in proximity to the existing staging and equipment storage area adjacent to the northeastern corner of Site 4 were also delineated. All wetlands and other waters of the United States within the assessment area were delineated (refer to **Figure 4.5-3**). A jurisdictional determination of wetlands and waters of the United States was requested from the USACE Baltimore District and would be obtained prior to implementing any actions that could impact the delineated areas. Direct impacts on the stream would be avoided or minimized to the maximum extent possible and any unavoidable impacts would be mitigated. Any additional required site-specific review and study would be accomplished in accordance with CWA Sections 401 and 404 and MDE Wetlands and Waterways Division permitting requirements. The Section 404 and MDE Wetlands and Waterways Division permitting process would identify whether additional mitigation measures are required. Construction activities from the parking lot or structure could result in a potential increase in surface runoff due to sheet flow as a result of an increase in impervious surfaces. There is a potential for erosion and associated sedimentation into the stream during construction. Erosion and sediment controls and storm water management practices implemented consistent with NSA's SWPPP and MDE's

Stormwater Design Manual would minimize the potential for adverse impacts associated with the increase in impervious surfaces and erosion and sedimentation. In addition to the SWPPP, Fort Meade's recently adopted Green Building Manual establishes guidelines to be applied during new construction and operation. These guidelines include measures for parking areas to include landscaped parking lot islands to provide shade, reduce heat island effect, and manage storm water (e.g., bioretention ponds, tree plantings). No impacts on wetlands or other waters of the United States would be expected as a result of constructing a surface parking lot at Site 6.

4.5.4.2 Parking Garage on Site 3

There are no wetlands in proximity to Site 3. Development of a three-story parking garage on Site 3, which is an existing parking lot, would not be expected to have adverse impacts on water resources. Therefore, no impact on water resources would be expected under this alternative.

4.5.4.3 Parking Garage on Site 9

Site 9 is a parking lot adjacent to a forested wetland to the east. Construction of a three-story parking garage would be expected to have minor adverse impacts on water resources. See **Section 4.5.2** for a discussion on the impacts on water resources during development.

There is a palustrine-forested wetland adjacent to the southeastern portion of Site 9 and near the southwestern corner of Site 10. Construction activities from the proposed parking areas could result in a potential increase in surface runoff due to sheet flow as a result of a slight increase in impervious surfaces. There is a potential for erosion and associated sedimentation into the wetland during construction. Erosion and sediment controls and storm water management practices implemented consistent with NSA's SWPPP and MDE's Stormwater Design Manual would minimize potential for adverse impacts associated with the slight increase in impervious surfaces and erosion and sedimentation. In addition to the SWPPP, Fort Meade's recently adopted Green Building Manual establishes guidelines to be applied during new construction and operation. These guidelines include measures for parking areas to include landscaped parking lot islands to provide shade, reduce heat island effect, and manage storm water (e.g., bioretention ponds and tree plantings).

4.5.4.4 Parking Garage on Site 10

Site 10 is a parking lot adjacent to a forested wetland to the west. Construction of a three-story parking garage would be expected to have minor adverse impacts on water resources. See **Section 4.5.2** for a discussion on the impacts on water resources during development.

There is a palustrine-forested wetland adjacent to the southeastern portion of Site 9 and near the southwestern corner of Site 10. Construction activities at Site 10 would be expected to have a greater impact on water resources than Site 9 as storm water runoff flows to the east, towards the forested wetland. Construction activities from the proposed parking areas could result in a potential increase in surface runoff due to sheet flow as a result of a slight increase in impervious surfaces. There is a potential for erosion and associated sedimentation into the wetland during construction. Erosion and sediment controls and storm water management practices implemented consistent with NSA's SWPPP and MDE's Stormwater Design Manual would minimize the potential for adverse impacts associated with the slight increase in impervious surfaces and erosion and sedimentation. In addition to the SWPPP, Fort Meade's recently adopted Green Building Manual establishes guidelines to be applied during new construction and operation. These guidelines include measures for a parking area to include landscaped parking lot islands to provide shade, reduce heat island effect, and manage storm water (e.g., bioretention ponds and tree plantings).

4.6 Biological Resources

Potential impacts on biological resources are evaluated based on the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, the proportion of the resource that would be affected relative to its occurrence in the region, the sensitivity of the resource to proposed activities, and the duration of ecological impacts. A habitat perspective is used to provide a framework for analysis of general classes of impacts (e.g., removal of critical habitat, noise, human disturbance).

Under the ESA, Federal agencies are required to provide documentation that ensures that agency actions will not adversely affect the existence of any federally threatened or endangered species. The ESA requires that all Federal agencies avoid "taking" threatened or endangered species (which includes jeopardizing threatened or endangered species habitat). Section 7 of the ESA establishes a consultation process with USFWS (and National Marine Fisheries Service) that ends with concurrence on a determination of the risk of jeopardy from a Federal agency project.

4.6.1 No Action Alternative

Under the No Action Alternative, DOD would not construct a North Utility Plant, upgrade the South Generator Facility, or replace the aging components of the Central Boiler Plant. No impacts on biological resources would be expected.

4.6.2 Proposed Action

Short-term and long-term, direct and indirect, adverse impacts on biological resources would be expected if undeveloped forested sites (i.e., Sites 4 and 6) were selected for the North Utility Plant, which includes the electrical distribution lines or the South Generator Facility.

It is anticipated that short-term negligible impacts on biological resources would be expected if sites were selected that are currently developed (i.e., Sites 1, 2, 3, 5, 7, and 8) except as discussed in the following text. Therefore, negligible impacts on biological resources would be expected as a result of replacing the Central Boiler Plant because there are no sensitive biological resources at Sites 7 and 8. Negligible impacts on biological resources would be expected as a result of constructing the North Utility Plant on Sites 1, 2, and 3, and the South Generator Facility on Sites 5 and 7. No impacts are expected to occur on threatened and endangered species on any of the potential sites since there are no threatened or endangered species occurring on any of the sites.

Vegetation. Development from the Proposed Action occurring in the forested sites (Sites 4 and 6) would be expected to be permanent and have long-term direct adverse impacts on the pine and deciduous hardwood forest that would occur in association with construction of the proposed North Utility Plant (105,000 ft²) and the South Generator Facility (60,000 ft²). Permanent loss of and long-term direct adverse impacts on vegetation would occur in association with the electrical distribution lines from the North Utility Plant, which total 90,000 ft² of disturbance, and transmission lines, which total 53,000 ft² of disturbance. Additional indirect adverse impacts on adjacent vegetation could result from collision with construction equipment and root damage. Forest Conservation Act requirements and BMPs such as installing temporary fences around trees would be implemented during construction activities. Under the Forest Conservation Act, a minimum of 20 percent of the forest should be preserved as a Forest Conservation Mitigation Area to mitigate project impacts. A Forest Conservation Plan would be developed and implemented if currently forested sites were developed under the Proposed Action. The additional areas disturbed as a result of the Proposed Action would be replanted with native vegetation or approved grass mixtures following construction activities.

Effects on vegetation from the Proposed Action in the remaining sites would be expected to be short-term and negligible. Negligible to minor impacts on adjacent landscape vegetation are possible during construction. BMPs would be implemented during construction to minimize impacts on landscape vegetation. Additional areas disturbed as a result of project development would be replanted with native vegetation or approved grass mixtures following construction activities.

Wildlife. In the undeveloped sites (Sites 4 and 6), short-term negligible impacts would occur on wildlife as a result of temporary noise disturbances associated with construction activities. Some wildlife species occurring in the vicinity of the proposed project area would be expected to have adapted to the variety of noise levels associated with the campus and might move back into the area following site development. Some species would be unable to return as a result of fencing surrounding the facilities.

Direct adverse impacts could occur from the mortality of small less-mobile species as a result of collision with construction equipment. BMPs would be implemented during construction to allow less-mobile species to avoid impacts from construction equipment. BMPs would also be implemented to avoid impacts on wildlife occurring in the vicinity of construction activities. Adverse impacts would occur as a loss of 105,000 ft² (North Utility Plant) and 60,000 ft² (South Generator Facility) of habitat. There is potential for additional loss of habitat from the placement of transmission lines associated with the North Utility Plant. Most wildlife occurring in and in the vicinity of Sites 4 and 6 would be expected to move to nearby habitats during site development.

On sites that are currently developed, short-term negligible impacts would occur on wildlife as a result of temporary noise disturbances associated with construction activities. BMPs such as allowing wildlife to move out of the path of construction equipment would be implemented during the construction to minimize impacts on wildlife.

Threatened and Endangered Species. No impacts on threatened and endangered species would be expected as a result of implementing the Proposed Action. There are no Federal- or state-listed threatened or endangered species documented or known to occur on or adjacent to any of the potential development sites.

4.6.3 Facility Alternatives

4.6.3.1 Site 1

Vegetation. Negligible impacts on vegetation would be expected as a result of development on Site 1. Effects on vegetation are expected to be similar to the impacts on vegetation on previously developed sites described in Section 4.6.2.

Wildlife. Negligible impacts on wildlife would be expected as a result of development on Site 1. Effects on wildlife are expected to be similar to the impacts on wildlife on previously developed sites described in Section 4.6.2.

Threatened and Endangered Species. No impacts on threatened and endangered species would be expected as a result of constructing the proposed North Utility Plant at Site 1.

4.6.3.2 Site 2

Vegetation. Negligible impacts on vegetation would be expected as a result of development on Site 2. Effects on vegetation are expected to be similar to the impacts on vegetation on previously developed sites described in Section 4.6.2.

Wildlife. Negligible impacts on wildlife would be expected as a result of development on Site 2. Effects on wildlife are expected to be similar to the impacts on wildlife on previously developed sites described in Section 4.6.2.

Threatened and Endangered Species. No impacts on threatened and endangered species would be expected as a result of constructing the proposed North Utility Plant at Site 2.

4.6.3.3 Site 3

Vegetation. Negligible impacts on vegetation would be expected as a result of development on Site 3. Effects on vegetation are expected to be similar to the impacts on vegetation on previously developed sites described in Section 4.6.2.

Wildlife. Negligible impacts on wildlife would be expected as a result of development on Site 3. Effects on wildlife are expected to be similar to the impacts on wildlife on previously developed sites described in Section 4.6.2.

Threatened and Endangered Species. No impacts on threatened and endangered species would be expected as a result of constructing the North Utility Plant at Site 3.

4.6.3.4 Site 4 (Preferred Alternative)

Vegetation. Long-term minor adverse impacts on vegetation would be expected as a result of development on Site 4. Effects on vegetation are expected to be similar to the impacts on vegetation on previously undeveloped sites described in Section 4.6.2. If chosen for development, this site would pose the greatest impact on vegetation as compared to the other site alternatives.

Wildlife. Short-term negligible adverse impacts on wildlife would be expected as a result of development on Site 4. Effects on wildlife are expected to be similar to the impacts on wildlife described for previously undeveloped sites described in Section 4.6.2.

Threatened and Endangered Species. No impacts on threatened and endangered species would be expected as a result of constructing the North Utility Plant at Site 4.

4.6.3.5 Site 5 (Preferred Alternative)

Vegetation. Negligible impacts on vegetation would be expected as a result of development on Site 5. Effects on vegetation are expected to be similar to the impacts on vegetation on previously developed sites described in Section 4.6.2.

Wildlife. Negligible impacts on wildlife would be expected as a result of development on Site 5. Effects on wildlife are expected to be similar to the impacts on wildlife on previously developed sites described in Section 4.6.2.

Threatened and Endangered Species. No impacts on threatened and endangered species would be expected as a result of constructing the South Generator Facility at Site 5.

4.6.3.6 Site 6

Vegetation. Long-term minor adverse impacts on vegetation would be expected as a result of development on Site 6. Effects on vegetation are expected to be similar to the impacts on vegetation on previously undeveloped sites described in **Section 4.6.2.**

Wildlife. Short-term negligible adverse impacts on wildlife would be expected as a result of development on Site 6. Effects on wildlife are expected to be similar to the impacts on wildlife on previously undeveloped sites described in **Section 4.6.2.**

Threatened and Endangered Species. No impacts on threatened and endangered species would be expected as a result of implementing the Proposed Action at Site 6.

4.6.3.7 Site 7

Vegetation. Negligible impacts on vegetation would be expected as a result of development on Site 7. Effects on vegetation are expected to be similar to the impacts on vegetation on previously developed sites described in **Section 4.6.2.**

Wildlife. Negligible impacts on wildlife would be expected as a result of development on Site 7. Effects on wildlife are expected to be similar to the impacts on wildlife on previously developed sites described in **Section 4.6.2.**

Threatened and Endangered Species. No impacts on threatened and endangered species would be expected as a result of constructing either the South Generator Facility or the Central Boiler Plant at Site 7.

4.6.3.8 Site 8 (Preferred Alternative)

Vegetation. Negligible impacts on vegetation would be expected as a result of development on Site 8. Effects on vegetation are expected to be similar to the impacts on vegetation on previously developed sites described in **Section 4.6.2.**

Wildlife. Negligible impacts on wildlife would be expected as a result of development on Site 8. Effects on wildlife are expected to be similar to the impacts on wildlife on previously developed sites described in **Section 4.6.2.**

Threatened and Endangered Species. No impacts on threatened and endangered species would be expected as a result of implementing the Proposed Action.

4.6.4 Parking Alternatives

4.6.4.1 Surface Parking Lot on Sites 4 and 6

Vegetation. Long-term minor adverse impacts on vegetation would be expected as a result of development on Sites 4 and 6. Effects on vegetation are expected to be similar to the impacts on vegetation on previously undeveloped sites described in **Section 4.6.2.** Development of Site 4 would pose the greatest impact on vegetation as compared to the other site alternatives.

Wildlife. Short-term negligible adverse impacts on wildlife would be expected as a result of development on Sites 4 and 6. Effects on wildlife are expected to be similar to the impacts on wildlife on previously undeveloped sites described in **Section 4.6.2.**

Threatened and Endangered Species. No impacts on threatened and endangered species would be expected as a result of implementing the Proposed Action at Sites 4 and 6.

4.6.4.2 Parking Garage on Site 3

Vegetation. Negligible impacts on vegetation would be expected as a result of development on Site 3. Effects on vegetation are expected to be similar to the impacts on vegetation on previously developed sites described in **Section 4.6.2.**

Wildlife. Negligible impacts on wildlife would be expected as a result of development on Site 3. Effects on wildlife are expected to be similar to the impacts on wildlife on previously developed sites described in **Section 4.6.2.**

Threatened and Endangered Species. No impacts on threatened and endangered species would be expected as a result of constructing a parking garage at Site 3.

4.6.4.3 Parking Garage on Site 9

Vegetation. Negligible impacts on vegetation would be expected as a result of construction of a parking garage on Site 9. Effects on vegetation are expected to be similar to the impacts on vegetation on previously developed sites described in **Section 4.6.2.**

Wildlife. Negligible impacts on wildlife would be expected as a result of development on Site 9. Effects on wildlife are expected to be similar to the impacts on wildlife on previously developed sites described in **Section 4.6.2.**

Threatened and Endangered Species. No impacts on threatened and endangered species would be expected as a result of constructing a parking garage at Site 9.

4.6.4.4 Parking Garage on Site 10

Vegetation. Negligible impacts on vegetation would be expected as a result of development on Site 10. Effects on vegetation are expected to be similar to the impacts on vegetation on previously developed sites described in **Section 4.6.2.**

Wildlife. Negligible impacts on wildlife would be expected as a result of development on Site 10. Effects on wildlife are expected to be similar to the impacts on wildlife on previously developed sites described in **Section 4.6.2.**

Threatened and Endangered Species. No impacts on threatened and endangered species would be expected as a result of constructing a parking garage at Site 10.

4.7 Cultural Resources

Potential impacts are assessed by (1) identifying the nature and potential importance of cultural resources in potentially affected areas, and (2) identifying activities that could directly or indirectly affect cultural

resources classified as historic properties. Cultural resources not yet evaluated are afforded the same regulatory consideration as resources that have been determined eligible or nominated to the NRHP.

Direct Impacts. Direct impacts on archaeological sites include physical disturbance through surface grading, building excavation and construction, road construction, utility line trenching, use of staging areas for heavy equipment and supplies, and vandalism of archaeological materials from temporary or permanent increased access to sites. Any ground-disturbing action in the area of an NRHP-eligible or potentially eligible archaeological site, or modification to such a site, can affect the physical integrity of that cultural resource. The alteration or destruction of those characteristics or qualities which make a resource potentially eligible for inclusion in the NRHP would be an adverse effect under Section 106 of the NHPA.

Direct impacts on architectural resources include demolition, alteration of architectural traits, structural instability through vibration, short-term audio intrusions during construction, and visual intrusions to historic settings and cultural landscapes. Any visual or audio intrusions to the setting or demolition or alteration of architectural traits can affect the physical integrity of an NRHP-eligible or potentially eligible architectural resource. Alteration or destruction of those characteristics or qualities that make a resource potentially eligible for inclusion in the NRHP would be an adverse effect under Section 106 of the NHPA.

Direct impacts on Native American resources include destruction of traditional resources, burials, and sacred sites, and plant or animal habitat through ground-disturbing activities and construction of buildings and roads. Audio and visual intrusion can adversely affect the visual and audio landscape or the viewshed of these resources. These types of physical disturbance could disturb or destroy unidentified Native American resources and, thus, would be an adverse effect under Section 106 of the NHPA.

Indirect Impacts. Indirect impacts on archaeological sites could include vandalism of archaeological materials from temporary or permanent increased access to sites adjacent to the APE.

Indirect impacts on architectural resources could include structural instability through construction, vibration of buildings adjacent to the APE, short-term audio intrusions during construction to buildings adjacent to the APE, and visual intrusions to additional historic settings and cultural landscapes adjacent to the APE.

Indirect impacts on Native American resources could include noise and visual intrusions to resources adjacent to the APE.

4.7.1 No Action Alternative

Under the No Action Alternative, there would be no new construction and no change in baseline conditions. There would be no direct or indirect adverse impacts on archaeological resources, historic buildings or structures, or traditional cultural properties. No mitigation is warranted.

4.7.2 Proposed Action

4.7.2.1 North Utility Plant

Site 4, the preferred location, is a Forest Conservation Area located approximately 1,220 feet of the BW Parkway. Historic aerial images and maps show extensive soil disturbance in the past at this location, indicating little likelihood of intact archaeological deposits remaining at this location. There are thick stands of 40- to 60-foot mixed deciduous and Virginia pine trees between Site 4 and the BW Parkway.

The National Cryptologic Museum is also located between Site 4 and a portion of the BW Parkway. A detailed simulation and analysis of potential visual impacts from the BW Parkway is in **Section 4.1.2**. In addition to the visual simulation, a visual impact assessment was conducted on December 2, 2008. This assessment concluded that the Proposed Action would not impact the viewshed from the BW Parkway, and therefore no effect on the NRHP-listed BW Parkway is expected (see **Section 4.1.2.1**). NSA consulted with the NPS under NHPA Section 106 on potential impacts to the BW Parkway (see **Appendix C**, pages C-21 through C-29). Since no effect is expected on the BW Parkway, no mitigation measures would be necessary.

Site 4, the preferred location, is a Forest Conservation Area located within 1,220 feet of the BW Parkway. Historic aerial images and maps show extensive soil disturbance in the past at this location, indicating little likelihood of intact archaeological deposits remaining at this location. There are thick stands of 40- to 60-foot mixed deciduous and Virginia pine trees between Site 4 and the BW Parkway. A detailed simulation and analysis of potential visual impacts from the BW Parkway is in **Section 4.1.2**. In addition to the visual simulation, a visual impact assessment was conducted on December 2, 2008. This assessment concluded that the Proposed Action would not impact the viewshed from the BW Parkway, and therefore no effect on the NRHP-listed BW Parkway is expected (see **Section 4.1.2.1**).

No adverse impacts on TCPs are expected.

4.7.2.2 South Generator Facility

Site 5 is the preferred location for the construction of the South Generator Facility. If this site were selected, the Proposed Action would result in the replacement of the existing generators with the new facility. There are no historic properties either within the APE or within proximity of the APE. No adverse impacts on historic properties would be expected. No mitigation is warranted. No adverse impacts on TCPs are expected.

4.7.2.3 Central Boiler Plant

Site 8 is the preferred location for the construction of the Central Boiler Plant. If this site is selected, the Proposed Action would result in the replacement of the existing boiler facility with a new facility within the same footprint. There are no historic properties either within the APE or within proximity of the APE. No adverse impacts on historic properties would be expected. No mitigation is warranted. No adverse impacts on TCPs are expected.

4.7.2.4 Utility Corridors

If the approximately 90,000 ft² of trenching for electrical distribution lines would occur in previously disturbed soils, no adverse impacts on historic properties would be expected and no mitigation is warranted. Should any portion of the trenching extend into undisturbed soils, further consultation with MHT should occur to discuss possible mitigation measures in undisturbed soils. No adverse impacts on TCPs are expected as a result of trenching for the electrical distribution lines.

Transmission lines would extend from west of MD-32 eastward inside the NSA campus, but it has not yet been determined where the lines would ingress onto the NSA campus, or whether the lines would be aboveground or buried. Until such determinations are made, the ultimate impact on the only significant resource, the BW Parkway, cannot yet be determined. Consultation with MHT should occur to discuss possible viewshed mitigation if the lines are aboveground. No adverse impacts on TCPs are expected as a result of installing the proposed transmission lines.

4.7.3 Facility Alternatives

4.7.3.1 Site 1

Site 1 is currently a parking lot and construction would occur within the existing facility footprint. Historic aerial images and maps show extensive soil disturbance in the past, indicating little likelihood of intact archaeological deposits remaining within both locations. There are no historic properties either within the APE or within proximity of the APE. No adverse impacts on historic properties would be expected. No mitigation is warranted.

4.7.3.2 Site 2

Site 2 is currently a parking lot and construction would occur within the existing facility footprint. Historic aerial images and maps show extensive soil disturbance in the past, indicating little likelihood of intact archaeological deposits remaining within both locations. There are no historic properties either within the APE or within proximity of the APE. No adverse impacts on historic properties would be expected. No mitigation is warranted.

4.7.3.3 Site 3

Site 3 is currently a parking lot located within 1,200 feet of the BW Parkway. Historic aerial images and maps show extensive soil disturbance in the past at this location, indicating little likelihood of intact archaeological deposits remaining. This location was visited to determine any potential visual impact on the BW Parkway from the new construction. There are thick stands of 40- to 60-foot mixed deciduous and Virginia pine trees between the BW Parkway. Should leaf loss on the deciduous trees cause more sparse screening in the winter, suggested mitigation might include painting the building to blend with the terrain, or planting additional native evergreen species of trees to fill any gaps. Consultation with the NPS is recommended to discuss acceptable mitigation measures. See **Section 4.1.2** for a detailed visual analysis.

4.7.3.4 Site 4 (Preferred Alternative)

Site 4 is within 1,220 feet of the NRHP-listed BW Parkway. As concluded from the December 2, 2008, visual impact assessment, the Proposed Action would not impact the viewshed from the BW Parkway, and therefore no effect on the NRHP-listed BW Parkway is expected (see **Section 4.1.2.1**). See analysis for Site 4 in **Section 4.7.2.1**.

4.7.3.5 Site 5 (Preferred Alternative)

No impacts would be expected. See analysis for Site 5 in **Section 4.7.2.2**.

4.7.3.6 Site 6

Site 6 is forested and undeveloped. No significant buildings or structures historically were located or currently reside on or in proximity to this parcel, thus no adverse impact on significant architectural resources is expected and no mitigation is warranted. Historic aerial images and maps show extensive soil disturbance in the past, indicating little likelihood of intact archaeological deposits remaining within the site. NSA has initiated coordination under NHPA Section 106 (see **Appendix C**, pages C-21 through C-29).

4.7.3.7 Site 7

Site 7 is the location of the former motorpool. Historic aerial images and maps show extensive soil disturbance in the past, indicating little likelihood of intact archaeological deposits remaining within the site. Therefore, no adverse impact on significant archaeological resources is expected, and no mitigation is warranted. No significant buildings or structures historically were located or currently reside within this parcel. Therefore, no adverse impact on significant architectural resources is expected and no mitigation is warranted. Fort Meade has completed all required cultural resources investigations, and the only eligible architectural resources are not located within view of Site 7. No adverse impact on historic properties is expected, and no mitigation measures are warranted.

4.7.3.8 Site 8 (Preferred Alternative)

No impacts would be expected. See analysis for Site 9 in **Section 4.7.2.3**.

4.7.4 Parking Alternatives

4.7.4.1 Surface Parking Lot on Sites 4 and 6

Site 4 is a Forest Conservation Area within 1,220 feet of the NRHP-listed BW Parkway. Historic aerial images and maps show extensive soil disturbance in the past, indicating little likelihood of intact archaeological deposits remaining. As concluded from the December 2, 2008, visual impact assessment (see **Appendix C**, pages C-21 through C-29), the Proposed Action would not impact the viewshed from the BW Parkway, and therefore no effect on the NRHP-listed BW Parkway is expected (see **Section 4.1.2.1**). See analysis for Site 4 in **Section 4.7.2.1**.

Site 6 is a forested area. Historic aerial images and maps show extensive soil disturbance in the past, indicating little likelihood of intact archaeological deposits remaining. NSA has initiated coordination under NHPA Section 106 (see **Appendix G**). No adverse impacts on significant architectural resources are expected, and no mitigation is warranted.

4.7.4.2 Parking Garage on Site 3

Site 3 contains little likelihood of intact archaeological deposits remaining due to extensive soil disturbance in the past, thus no adverse impact on significant archaeological resources is expected. However, Site 3 is within 1,220 feet of the BW Parkway. There are thick stands of 40- to 60-foot mixed deciduous and Virginia pine trees between Site 3 and the BW Parkway. If the trees are left intact and the building does not rise above the tree height, there would be no viewshed issues for at least most of the year. Should leaf loss on the deciduous trees cause more sparse screening in the winter, suggested mitigation might include painting the building to blend with the terrain, or planting additional native evergreen species of trees to fill any gaps.

4.7.4.3 Parking Garage on Site 9

Site 9 is currently a parking lot with little likelihood of intact archaeological deposits remaining due to extensive soil disturbance in the past, thus no adverse impact on significant archaeological resources is expected. Fort Meade has completed all required cultural resources investigations, and the only eligible architectural resources are not within view of either location. No adverse impact on historic properties is expected and no mitigation measures are warranted.

4.7.4.4 Parking Garage on Site 10

Site 10 is currently a parking lot with little likelihood of intact archaeological deposits remaining due to extensive soil disturbance in the past, thus no adverse impact on significant archaeological resources is expected. Fort Meade has completed all required cultural resources investigations, and the only eligible architectural resources are not located within view of either location. No adverse impact on historic properties is expected and no mitigation measures are warranted.

4.8 Infrastructure

As discussed in **Section 2.2.5**, DOD will not disclose the locations of existing or proposed utility corridors. It is assumed that construction contractors would be well-informed of utility locations prior to any ground-disturbing activities that could result in major unintended utility disruptions or human safety hazards, and all ground-disturbance required for utility line installation and facility construction would be accomplished in accordance with Federal and state safety guidelines.

The analysis to determine potential impacts on infrastructure and infrastructure systems considers primarily whether a proposed action would exceed capacity or place unreasonable demand on a specific utility.

4.8.1 No Action Alternative

Long-term moderate to major adverse impacts could occur on infrastructure systems, particularly electrical power and heating systems, under the No Action Alternative. Primary electrical power systems are expected to meet current electrical demands, but there would be no multiple redundant power supplies in place to ensure mission operability under any circumstance. The current boiler plant would continue to operate in the short term with negligible to no impacts, but long-term reliability and maintenance issues could result in service interruptions to the central heating system, requiring use of expensive and inefficient backup heating systems on individual buildings. Additionally, the ASTs servicing the current boiler plant are degraded because of their condition and age; they are a currently questionable source of backup fuel oil when natural gas is unavailable to the boiler and would only continue to become more unreliable under the No Action Alternative. Because of the condition of the ASTs and secondary containment, the potential for release of oil into the environment from tank leakage would increase over time.

4.8.2 Proposed Action

4.8.2.1 North Utility Plant

Electrical Power. Direct, long-term, major beneficial impacts on electrical supply would be expected from the construction of the North Utility Plant by providing a redundant emergency electrical power supply system to the NSA campus. The proposed North Electrical Substation would provide 50 MVA of emergency power, which would be fully supported by the proposed 60- to 65-MW North Generator Facility. It is anticipated that BGE would maintain the North Electrical Substation under contract. Construction and installation activities would be conducted to ensure that primary electrical power is not interrupted to critical systems.

Natural Gas. No impacts on natural gas infrastructure would be expected. The North Utility Plant would not increase or decrease natural gas consumption.

Liquid Fuel. Direct, long-term negligible adverse impacts from liquid fuel would be expected from operations of the North Utility Plant because the amount of liquid fuel stored onsite would increase by as much as 614,427 gallons (i.e., assuming a maximum of 31 20,000-gallon ASTs). Each storage tank would have containment consistent with the volume of fluid contained and in accordance with all current regulatory requirements and all ASTs, pipes, valves, and appurtenances would be examined daily to assess their condition (see Section 4.10.2.1). NSA would transfer, store, and dispose of liquid fuel in accordance with all applicable Federal and state requirements.

Water Supply. Negligible impacts on water supply infrastructure would be expected. The generators in the proposed North Generator Facility of the North Utility Plant would include an internal cooling system, which would not require use of the water supply.

Sanitary Sewer and Wastewater. No impacts on sanitary sewer infrastructure would be expected from the construction and operation of the North Utility Plant. Negligible impacts on NSA's wastewater production would be expected from operations associated with the North Generator Facility.

Heating and Cooling. No impact on heating and cooling systems would be expected from the construction and operation of the North Utility Plant.

Solid Waste. Direct, short-term minor adverse impacts on solid waste would be expected during construction of the North Utility Plant. It is estimated that construction of a 60,000-ft² facility and 45,000 ft² substation would generate approximately 230 tons of construction waste (USEPA 1998). At least 40 percent of nonhazardous construction and demolition waste would be recycled (USACE 2003). Though construction waste would only be generated for a short period of time, any waste sent to a landfill would be considered an irretrievable adverse impact.

4.8.2.2 South Generator Facility

Electrical Power. Direct, long-term major beneficial impacts on electrical supply would be expected from the construction of the South Generator Facility by providing an emergency electrical power supply to the South Utility Plant. The proposed 47- to 52-MW South Generator Facility would ensure full emergency power to the South Electrical Substation. Construction and installation activities would be conducted to ensure that primary electrical power is not interrupted to critical systems.

Natural Gas. No impacts on natural gas infrastructure would be expected. The South Generator Facility would not increase or decrease natural gas consumption.

Liquid Fuel. Direct, long-term negligible adverse impacts from liquid fuel would be expected from operations of the South Generator Facility because the amount of liquid fuel stored onsite would increase by as much as 387,562 gallons (i.e., assuming a maximum of 20 20,000-gallon diesel ASTs). Each storage tank would have containment consistent with the volume of fluid contained and in accordance with all current regulatory requirements and all ASTs, pipes, valves, and appurtenances would be examined daily to assess their condition (see Section 4.10.2.2). NSA would transfer, store, and dispose of liquid fuel in accordance with all applicable Federal and state requirements.

Water Supply. Negligible impacts on water supply infrastructure would be expected. The generators in the proposed South Generator Facility would include an internal cooling system, which would not require use of the water supply.

Sanitary Sewer and Wastewater. No impacts on sanitary sewer infrastructure would be expected from the construction and operation of the South Generator Facility. Direct, long-term negligible to minor

impacts on NSA's wastewater production would be expected from operations associated with the South Generator Facility.

Heating and Cooling. No impact on heating and cooling systems would be expected from the construction and operation of the South Generator Facility.

Solid Waste. Direct, short-term minor adverse impacts on solid waste at the NSA campus would be expected during construction of the South Generator Facility. It is estimated that construction of a 60,000-ft² facility would generate approximately 131 tons of construction waste (USEPA 1998). At least 40 percent of nonhazardous construction and demolition waste would be recycled (USACE 2003). Though construction waste would only be generated for a short period of time, any waste sent to a landfill would be considered an irretrievable adverse impact.

4.8.2.3 Central Boiler Plant

Electrical Power. No impacts on the electrical power system would be expected as a result of the replacement of the Central Boiler Plant.

Natural Gas. The replacement of the Central Boiler Plant at the proposed location (Site 8) would have negligible impacts on natural gas supply. The existing boiler plant currently uses natural gas to power its boilers; therefore, no additional demands for natural gas would be expected should the existing boiler plant be replaced with a comparably sized plant. The existing boilers used at the NSA campus are old and inefficient; therefore, the replacement of the presently used boilers with modern, energy-efficient dual-fuel boilers could have direct long-term minor beneficial impacts on natural gas usage at the NSA campus.

Liquid Fuel. Direct, long-term beneficial impacts on the storage of liquid fuel would be expected from the construction of the Central Boiler Plant. The two existing 200,000-gallon ASTs servicing the boiler plant are a potential source of environmental contamination because of their condition and age. The associated containment dikes are compromised, despite ongoing maintenance, by intruding vegetation and wildlife. A leak from the AST or a spill during AST refueling could result in soil or water contamination and subsequent expensive and difficult remediation. The replacement of the existing ASTs with modern ASTs is expected to correct the storage tank deficiencies at the boiler plant. In addition, the potential for fuel loss via spills, leaks, and equipment failure is expected to be greatly reduced by the proposed AST replacement. The proposed replacement of the Central Boiler Plant would result in no change in the amount of fuel stored from the existing condition.

Water Supply. Negligible impacts on water supply infrastructure would be expected. The existing boiler plant currently uses water, and it is anticipated that the proposed boilers would continue to use water at a comparable rate.

Sanitary Sewer and Wastewater. Negligible impacts on wastewater infrastructure would be expected from the construction and operation of the Central Boiler Plant. The existing central boiler plant currently discharges wastewater, which flows through an oil/water separator, which discharges to the sanitary sewer system. It is anticipated that the volume and content of wastewater would remain comparable to the existing conditions.

Heating and Cooling. Direct, long-term, moderate to major beneficial impacts on heating capabilities would be expected. The proposed replacement boilers would be more modern and energy-efficient than the existing vintage boilers, thereby providing heating to the NSA campus at a reduced energy cost. Each boiler would be rated at 98 MMBtu/hr, but only two boilers would normally operate at any given time. If

constructed in Site 8, the proposed Central Boiler Plant would use the existing underground steam and condensate distribution system in place at the existing boiler plant. No impacts on cooling infrastructure are anticipated.

Solid Waste. Direct, short-term minor adverse impacts on solid waste would be expected during construction of the Central Boiler Plant. It is estimated that construction of a 12,000-ft² facility would generate approximately 26 tons of construction waste (USEPA 1998). At least 40 percent of nonhazardous construction and demolition waste would be recycled (USACE 2003). It is anticipated that the metal ASTs would be 100 percent recyclable. Though construction waste would only be generated for a short period of time, any waste sent to a landfill would be considered an irretrievable adverse impact.

4.8.2.4 Utility Corridors

DOD will not disclose the locations of existing or proposed utility corridors for security reasons. It is assumed that construction contractors would be well-informed of utility locations prior to any ground-disturbing activities that could result in major unintended utility disruptions or human safety hazards, and all ground disturbance required for utility line installation, including electrical distribution and transmission lines, would be accomplished in accordance with Federal and state safety guidelines. Therefore, negligible impacts would be expected as a result of trenching for and installation of electrical distribution and power transmission lines.

4.8.3 Facility Alternatives

4.8.3.1 Site 1

Construction of the North Utility Plant at Site 1 would result in the same impacts on electrical power, natural gas, liquid fuel, water supply, sanitary sewer and wastewater, and heating and cooling, as presented in Section 4.8.2.1. However, construction at this site would result in the removal of asphalt in order to construct the proposed North Utility Plant. For the purposes of this EIS, it is assumed that all 7.3 acres of asphalt would be removed. Therefore, in addition to the estimated 230 tons of construction waste, an additional 10,335 tons of demolition debris would be generated (SI Metric 2007a). At least 40 percent of nonhazardous construction and demolition waste would be recycled (USACE 2003). Generally, asphalt can be ground and recycled for fill and roadwork rather than deposited in a landfill. Any waste sent to a landfill would be considered an irretrievable adverse impact.

4.8.3.2 Site 2

Construction of the North Utility Plant at Site 2 would result in the same impacts on electrical power, natural gas, liquid fuel, water supply, sanitary sewer and wastewater, and heating and cooling, as presented in Section 4.8.2.1. However, construction at this site would result in the removal of asphalt in order to construct the proposed North Utility Plant. For the purposes of this EIS, it is assumed that all 4.1 acres of asphalt would be removed. Therefore, in addition to the estimated 230 tons of construction waste, an additional 5,804 tons of demolition debris would be generated (SI Metric 2007a). At least 40 percent of nonhazardous construction and demolition waste would be recycled (USACE 2003). Generally, asphalt can be ground and recycled for fill and roadwork rather than deposited in a landfill. Any waste sent to a landfill would be considered an irretrievable adverse impact.

4.8.3.3 Site 3

Construction of the North Utility Plant at Site 3 would result in the same impacts on electrical power, natural gas, liquid fuel, water supply, sanitary sewer and wastewater, and heating and cooling, as presented in **Section 4.8.2.1**. However, construction at this site would result in the removal of asphalt in order to construct the proposed North Utility Plant. For the purposes of this EIS, it is assumed that all 5.6 acres of asphalt would be removed. Therefore, in addition to the estimated 230 tons of construction waste, an additional 7,928 tons of demolition debris would be generated (SI Metric 2007a). At least 40 percent of nonhazardous construction and demolition waste would be recycled (USACE 2003). Generally, asphalt can be ground and recycled for fill and roadwork rather than deposited in a landfill. Any waste sent to a landfill would be considered an irretrievable adverse impact.

4.8.3.4 Site 4 (Preferred Alternative)

Construction of the North Utility Plant at Site 4 would result in the same impacts on electrical power, natural gas, liquid fuel, water supply, sanitary sewer and wastewater, and heating and cooling, as presented in **Section 4.8.2.1**. However, construction at this site would result in the removal of approximately 6.1 acres of trees in order to construct the proposed North Utility Plant. Therefore, in addition to the estimated 230 tons of construction waste, an additional 939 tons of woody debris would be generated (SI Metric 2007b, DOD 2008). Woody debris could be mulched and reused instead of disposed of in a landfill. Any waste sent to a landfill would be considered an irretrievable adverse impact.

4.8.3.5 Site 5 (Preferred Alternative)

Site 5 is the location of the existing South Utility Plant and within an enclosed utility yard. Since Site 5 is the location of existing generators, the continued use of this site for emergency generators would maximize existing infrastructure. Use of existing infrastructure would be considered a beneficial impact.

Construction of the South Generator Facility at Site 5 would result in the same impacts on electrical power, natural gas, liquid fuel, water supply, sanitary sewer and wastewater, and heating and cooling, as presented in **Section 4.8.2.2**. However, construction at this site would result in the removal of the existing generator facility (8,570 ft²) in order to construct the proposed South Generator Facility. Therefore, in addition to the estimated 131 tons of construction waste, an additional 664 tons of demolition debris would be generated (SI Metric 2007a). At least 40 percent of nonhazardous construction and demolition waste would be recycled (USACE 2003). Any waste sent to a landfill would be considered an irretrievable adverse impact.

4.8.3.6 Site 6

Construction of the South Generator Facility at Site 6 would result in the same impacts on electrical power, natural gas, liquid fuel, water supply, sanitary sewer and wastewater, and heating and cooling, as presented in **Section 4.8.2.2**. However, construction at this site would result in the removal of approximately 6.1 acres of trees in order to construct the proposed South Generator Facility. Therefore, in addition to the estimated 131 tons of construction waste, an additional 400 tons of woody debris would be generated (SI Metric 2007b, DOD 2008). Woody debris could be mulched and reused instead of disposed of in a landfill. Any waste sent to a landfill would be considered an irretrievable adverse effect.

4.8.3.7 Site 7

Construction of the South Generator Facility at Site 7 would result in generally the same impacts as presented in **Section 4.8.2.2**. However, construction at this site would result in the removal of asphalt in

order to construct the proposed South Generator Facility. For the purposes of this EIS, it is assumed that 1.3 acres of asphalt would be removed. Therefore, in addition to the estimated 131 tons of construction waste, an additional 1,853 tons of demolition debris would be generated (SI Metric 2007a). At least 40 percent of nonhazardous construction and demolition waste would be recycled (USACE 2003). Generally, asphalt can be ground and recycled for fill and roadwork rather than deposited in a landfill. Any waste sent to a landfill would be considered an irretrievable adverse impact.

Construction of the Central Boiler Plant at Site 7 would result in generally the same impacts on electrical power, natural gas, liquid fuel, water supply, sanitary sewer and wastewater, and heating and cooling as presented in **Section 4.8.2.3**. However, construction at this site would result in the removal of asphalt in order to construct the proposed Central Boiler Plant. For the purposes of this EIS, it is assumed that 1.3 acres of asphalt would be removed. Therefore, in addition to the estimated 26 tons of construction waste, an additional 1,853 tons of demolition debris would be generated (SI Metric 2007a). At least 40 percent of nonhazardous construction and demolition waste would be recycled (USACE 2003). Any waste sent to a landfill would be considered an irretrievable adverse impact.

4.8.3.8 Site 8 (Preferred Alternative)

Site 8 is the location of the existing boiler facility and is within an enclosed utility yard. Replacement of the Central Boiler Plant at Site 8 is the preferred location alternative. Since Site 8 is the current location of the boiler plant, replacement of an in-kind Central Boiler Plant with comparably sized units would maximize the use of existing infrastructure, particularly the underground steam and condensate distribution system. Use of existing infrastructure would be considered a beneficial impact.

Construction of the Central Boiler Plant at Site 8 would result in generally the same impacts on electrical power, natural gas, liquid fuel, water supply, sanitary sewer and wastewater, and heating and cooling as presented in **Section 4.8.2.3**. However, construction at this site would result in the removal of the existing boiler plant (12,000 ft²) and ASTs (6,000 ft²) in order to construct the proposed Central Boiler Plant. Therefore, in addition to the estimated 26 tons of construction waste, an additional 1,125 tons of demolition debris would be generated (SI Metric 2007a). At least 40 percent of nonhazardous construction and demolition waste would be recycled (USACE 2003). Any waste sent to a landfill would be considered an irretrievable adverse impact.

4.8.4 Parking Alternatives

4.8.4.1 Surface Parking Lot on Sites 4 and 6

Construction of surface parking lots on Sites 4 and 6 would have no to negligible impacts on utility systems. Surface lots would require safety lighting, which would contribute negligibly to overall electrical power use. No impacts on natural gas, liquid fuel, water supply, sanitary sewer and wastewater systems, and heating and cooling would be expected.

Direct, short-term minor adverse impacts on solid waste would be expected during construction of the surface parking lots. It is estimated that 939 tons of woody debris would be generated to clear a total of 8.7 acres of trees for the construction of the parking lots (SI Metric 2007b, DOD 2008). Woody debris could be mulched and reused instead of disposed of in a landfill. Asphalt and paving activities would produce negligible construction and demolition waste. Though construction waste would only be generated for a short period of time, any waste sent to a landfill would be considered an irretrievable adverse impact. Construction of two surface lots would generate less solid waste than construction of parking garages.

4.8.4.2 Parking Garage on Site 3

Construction of a parking garage on Site 3 would have no to negligible impacts on utility systems. Parking garages would require safety lighting and other mechanical equipment (e.g., elevators), which would contribute negligibly to overall electrical power use. No impacts on natural gas, liquid fuel, water supply, sanitary sewer and wastewater systems, and heating and cooling would be expected.

Direct, short-term minor adverse impacts on solid waste would be expected. Approximately 7,928 tons of demolition debris would be generated from removal of the existing parking lot (5.6 acres) at Site 3 (SI Metric 2007a). For the purposes of this EIS, it is assumed that the entire site (5.6 acres) would be developed and a three-story garage would be constructed for a total area of 16.8 acres. In addition to demolition, construction activities could generate as much as 1,603 tons of construction waste (USEPA 1998). The total waste generated prior to recycling would be approximately 9,531 tons. At least 40 percent of nonhazardous construction and demolition waste would be recycled (USACE 2003). Though construction waste would only be generated for a short period of time, any waste sent to a landfill would be considered an irretrievable adverse impact.

4.8.4.3 Parking Garage on Site 9

Construction of a parking garage on Site 9 would have no to negligible impacts on utility systems. Parking garages would require safety lighting and other mechanical equipment (e.g., elevators), which would contribute negligibly to overall electrical power use. No impacts on natural gas, liquid fuel, water supply, sanitary sewer and wastewater systems, and heating and cooling would be expected.

Direct, short-term minor adverse impacts on solid waste would be expected. Approximately 8,636 tons of demolition debris would be generated from removal of the existing parking lot (6.1 acres) at Site 9 (SI Metric 2007a). For the purposes of this EIS, it is assumed that the entire site (6.1 acres) would be developed and a three-story garage would be constructed for a total area of 18.3 acres. In addition to demolition, construction activities could generate as much as 1,746 tons of construction waste (USEPA 1998). The total waste generated prior to recycling would be approximately 10,382 tons. At least 40 percent of nonhazardous construction and demolition waste would be recycled (USACE 2003). Though construction waste would only be generated for a short period of time, any waste sent to a landfill would be considered an irretrievable adverse impact. Construction of a three-story parking garage at Site 9 would be expected to generate the most solid waste of any of the parking alternatives.

4.8.4.4 Parking Garage on Site 10

Construction of a parking garage on Site 10 would have no to negligible impacts on utility systems. Parking garages would require safety lighting and other mechanical equipment (e.g., elevators), which would contribute negligibly to overall electrical power use. No impacts on natural gas, liquid fuel, water supply, sanitary sewer and wastewater systems, and heating and cooling would be expected.

Direct, short-term minor adverse impacts on solid waste would be expected. Approximately 4,053 tons of demolition debris would be generated from removal of the existing parking lot (2.2 acres) and structures (12,095 ft²) at Site 10 (SI Metric 2007a, USEPA 1998). For the purposes of this EIS, it is assumed that the entire site (4.8 acres) would be developed and a three-story garage would be constructed for a total area of 14.4 acres. In addition to demolition, construction activities could generate as much as 1,374 tons of construction waste (USEPA 1998). The total waste generated prior to recycling would be approximately 5,427 tons. At least 40 percent of nonhazardous construction and demolition waste would be recycled (USACE 2003). Though construction waste would only be generated for a short period of time, any waste sent to a landfill would be considered an irretrievable adverse impact.

4.9 Transportation

Impacts on traffic are evaluated by how well existing roadways can accommodate increases in traffic. Adverse impacts occur if drivers experience high delays because arrival flow rates exceed lane capacity.

4.9.1 No Action Alternative

Under the No Action Alternative, some normal traffic growth in the area would occur. No impacts on transportation resources or the road networks or increases in traffic volume due to the Proposed Action would occur. All access control points and the adjacent intersections would operate at their existing conditions until natural background traffic growth began to impede their LOS. NSA traffic volumes would ultimately be determined by the available parking. Since the current parking is at 100 percent capacity, little to no change in NSA traffic would occur.

4.9.2 Proposed Action

Implementing the Proposed Action would have both short-term minor and long-term negligible adverse impacts on transportation resources. Short-term impacts on traffic would be due to additional construction vehicles and traffic delays near construction sites. Long-term impacts would be due to negligible increases (less than 1 percent) in roadway and gate traffic and the displacement of parking associated with the Proposed Action. These impacts would vary with location and parking alternative. An overview of construction and operational changes to transportation resources is presented below. An evaluation of the impacts for the different facility alternatives and parking alternatives is presented in Sections 4.9.3 and 4.9.4.

4.9.2.1 North Utility Plant

Short-term impacts would be due to additional construction vehicles and traffic delays near construction sites. These impacts would be temporary in nature and would end with the construction phase of the North Utility Plant. The local road infrastructure would be sufficient to support any increase in construction vehicle traffic. Wear and tear on roads would be increased due to their use by construction vehicles and might require an increase in maintenance activities. Although the impacts would be minor, the following measures would be implemented during construction:

- Equip all construction vehicles with backing alarms, two-way radios, and slow-moving vehicle signs when appropriate
- Route and schedule construction vehicle traffic to minimize conflicts with other traffic
- Locate construction staging areas to minimize traffic impacts.

Facilities maintenance would be accomplished under an existing maintenance contract. The additional personnel required as a result of the Proposed Action would be negligible (an increase of less than 1 percent). This small increase would occur primarily on roadways adjacent to the proposed facility such as Canine Road, Wray Road, and Tower Road and at the MD-32/Canine Road access control point. Some intersections might have incremental and unnoticeable increases in traffic. However, the LOS at all intersections would remain as described in Section 3.9.2. If Sites 1, 2, or 3 were selected, some loss of existing parking would occur. An evaluation of the impacts on parking for different facility locations and parking alternatives is presented in Sections 4.9.3 and 4.9.4. Regardless of the parking alternative implemented, spaces lost as a result of the Proposed Action would be replaced on a one-to-one basis, and there would be no net change in NSA campus parking.

4.9.2.2 South Generator Facility

Impacts from construction and operation of the proposed South Generator Facility would be similar to, although somewhat less than, those outlined under the North Utility Plant in **Section 4.9.2.1**. The short-term and long-term impacts would occur primarily on roadways adjacent to the proposed South Generator Facility such as Emory Road and Canine Road. If Site 7 were selected for the South Generator Facility, the loss of some existing parking for the motor pool would occur. However, regardless of the parking alternative implemented, these spaces would constitute only a minor change in NSA campus parking. They would be replaced on a one-to-one basis, and there would be no net change in NSA campus parking.

4.9.2.3 Central Boiler Plant

Impacts from construction and operation of the proposed Central Boiler Plant would be similar to those outlined under the North Utility Plant in **Section 4.9.2.1**. The short-term and long-term impacts would be somewhat less than those from North Utility Plant and would occur primarily on roadways adjacent to the proposed Central Boiler Plant such as Emory Road and Canine Road. If Site 7 were selected for the Central Boiler Plant, the loss of some existing parking for the motor pool would occur. However, regardless of the parking alternative implemented, these spaces would constitute only a minor change in NSA campus parking. They would be replaced on a one-to-one basis, and there would be no net change in NSA campus parking.

4.9.2.4 Utility Corridors

Short-term minor adverse impacts would be due to additional construction vehicles and traffic delays near construction sites. Road closures or detours to accommodate utility system work would occur, creating short-term traffic delays and utility outages. Wear and tear on roads would be increased due to their use by construction vehicles. Some portions of roads could be removed for utilities crossing, but all roads would be repaired following completion of utility line installation in that area.

4.9.3 Facility Alternatives

Impacts associated with construction of the North Utility Plant, South Generator Facility, and Central Boiler Plant and with additional personnel would be similar to those described under the Proposed Action (**Section 4.9.2**), and not vary appreciably with Facility Alternatives. However, impacts on parking would vary based on the facility alternatives implemented.

For a maximum impact scenario on parking, Sites 1 or 3 would be selected for the North Utility Plant, and Site 10 would be selected for either the South Generator Facility or the Central Boiler Plant. This would constitute a net loss of approximately 6.7 to 6.8 percent of total parking. If other locations for the facilities were selected, the net loss of existing parking would be less. The loss of 6.7 to 6.8 percent of available parking would constitute a minor impact under NEPA. However, regardless of the parking alternative implemented these spaces would be replaced on a one-to-one basis, and there would be no net change in parking on the NSA campus. Replacement of parking would limit these already minor impacts. Small variations in anticipated impacts for each facility alternative are discussed below. **Table 4.9-1** summarizes parking lost based on facility alternatives.

4.9.3.1 Site 1

Implementing the Proposed Action at Site 1 would have both short-term and long-term minor adverse impacts on parking. A loss of approximately 6.1 percent of the total parking would occur (see **Table 4.9-1**). This parking lot is currently used by personnel in the northern portion of the NSA campus.

Although spaces lost would be replaced on a one-to-one basis, parking could be relocated by as much as 0.75 miles to Site 10 depending on the Parking Alternative selected (see **Section 4.9.4**). This would effectively shift the overall parking profile for the NSA campus southward approximately 0.1 mile. Individuals would experience changes in the distance and route they would walk to get to their work areas. Overall, these impacts would be minor. Impacts due to construction and additional traffic would be similar to those outlined under the Proposed Action, and would be confined to those areas near Site 1.

If the existing parking were removed before the new parking was constructed, a temporary decrease in parking could occur. Temporarily limiting the number of available parking spaces would cause automobile drivers to seek alternate methods of transportation (e.g., carpool, vanpool, public transit) in order to avoid the difficulties inherent in finding a parking space and the possibility of not finding one at all. This would have minor beneficial impact on other transportation resources, such as roadway traffic.

4.9.3.2 Site 2

Implementing the Proposed Action at Site 2 would have both short-term and long-term minor adverse impacts on parking. A loss of approximately 3.8 percent of the total parking would occur (see **Table 4.9-1**). The impacts would be similar to, although somewhat less than, those outlined under Site 1. Impacts due to construction and additional traffic would be similar to those outlined under the Proposed Action and would be confined to those areas near Site 2.

Table 4.9-1. Existing Parking for all Site Alternatives

Facility Alternative	Existing Parking as a Percent of Total Parking Available on NSA Campus
Site 1	6.1%
Site 2	3.8%
Site 3	6.2%
Site 4	0.0%
Site 5	0.0%
Site 6	0.0%
Site 7	2.5%
Site 8	1.4%
Site 9	0.0%
Site 10	0.6%

4.9.3.3 Site 3

Implementing the Proposed Action at Site 3 would have both short-term and long-term minor adverse impacts on parking. A loss of approximately 6.2 percent of the total parking would occur (see **Table 4.9-1**). The impacts would be similar to, although slightly more than, those outlined under Site 1. Impacts due to construction and additional traffic would be similar to those outlined under the Proposed Action and would be confined to those areas near Site 3.

4.9.3.4 Site 4 (Preferred Alternative)

Implementing the Proposed Action at Site 4 would have negligible impacts on parking. If Site 4 were selected for the proposed North Utility Plant, no parking would be directly lost (see **Table 4.9-1**). Depending on the Facility Alternative selected for other proposed utilities, it is possible that the Proposed Action could result in no substantive need for additional parking. Under this alternative, no additional parking would be needed or developed. If Site 4 were ultimately selected as the location for the North Utility Plant, the impacts due to construction and additional traffic would be similar to those outlined under the Proposed Action and would be confined to those areas near Site 4.

4.9.3.5 Site 5 (Preferred Alternative)

Implementing the Proposed Action at Site 5 would have no impacts on parking. There would be no loss of existing parking (see **Table 4.9-1**). Impacts due to construction and additional traffic would be similar to those outlined under the Proposed Action and would be confined to those areas near Site 5.

4.9.3.6 Site 6

Implementing the Proposed Action at Site 6 would have no impacts on parking. There would be no loss of existing parking (see **Table 4.9-1**). Impacts due to construction and additional traffic would be similar to those outlined under the Proposed Action and would be confined to those areas near Site 6.

4.9.3.7 Site 7

Implementing the Proposed Action at Site 7 would have both short-term minor and long-term negligible impacts on parking. A loss of approximately 0.6 percent of the total parking would occur (see **Table 4.9-1**). The impacts would be similar to, although much less than, those outlined under Site 1. Impacts due to construction and additional traffic would be similar to those outlined under the Proposed Action and would be confined to those areas near Site 7.

4.9.3.8 Site 8 (Preferred Alternative)

Implementing the Proposed Action at Site 8 would have no impacts on parking. There would be no loss of existing parking (see **Table 4.9-1**). Impacts due to construction and additional personnel would be similar to those outlined under the Proposed Action and would be confined to those areas near Site 8.

4.9.4 Parking Alternatives

Similar to the facility alternatives (see **Section 4.9.4**), both minor short-term and long-term impacts would be expected regardless of the parking alternative implemented. Small variations in these impacts for each Parking Alternative are discussed below.

4.9.4.1 Surface Parking Lot on Sites 4 and 6

Implementing this alternative would have both short-term and long-term minor adverse impacts on parking. Short-term impacts on traffic associated with construction activities would be similar to those described under the Proposed Action (see **Sections 4.9.3.4 and 4.9.3.6**), although construction traffic associated with development of surface parking lots at Sites 4 and 6 would be shorter and of less intensity than construction of any of the proposed utilities.

If implemented, the surface lots would replace parking that is currently used by personnel in the northern portion of the NSA campus. Although spaces would be replaced on a one-to-one basis, this alternative could displace parking as much as 0.5 miles from Site 3 (this supposes that Site 3 is selected for the location of the North Utility Plant because it would be the farthest from Site 6 and so provides a worst-case scenario). This would effectively shift the overall parking profile for the NSA campus southward approximately 0.1 mile. Individuals would experience small changes in the distance and route they would walk to get to their work areas. Overall, these impacts would be minor.

4.9.4.2 Parking Garage on Site 3

Implementing this alternative would have both short-term and long-term minor adverse impacts on parking. Short-term impacts on traffic associated with constructing a three-story parking garage would be similar to those described under the Proposed Action for construction of the North Utility Plant at Site 3 (Section 4.9.3.3).

If implemented, the parking garage would replace parking that is currently used by personnel in the northern portion of the NSA campus. Although spaces would be replaced on a one-to-one basis, this alternative could displace this parking as much as 0.25 miles from Site 2 (this supposes that Site 2 is selected for the location of the North Utility Plant because it would be the farthest from Site 3 and so provides a worst-case scenario). This would effectively shift the overall parking profile for the NSA campus westward approximately 0.1 mile. As with other parking alternatives, individuals would experience small changes in the distance and route they would walk to get to their work locations.

4.9.4.3 Parking Garage on Site 9

Implementing this alternative would have both short-term and long-term minor adverse impacts on parking. Short-term impacts on traffic associated with constructing a three-story parking garage at Site 9 would be similar to those described under the Proposed Action for construction of facilities.

If implemented, the parking garage would replace parking that is currently used by personnel located in the northern portion of the NSA campus. Although spaces would be replaced on a one-to-one basis, this alternative could displace this parking as much as 0.75 miles from Site 3 (this supposes that Site 3 is selected for the location of the North Utility Plant because it would be the farthest from Site 9 and so provides a worst-case scenario). This would effectively shift the overall parking profile for the NSA campus southeastward approximately 0.1 mile. As with other parking alternatives, individuals would experience small changes in the distance and route they would walk to get to their work locations.

4.9.4.4 Parking Garage on Site 10

Implementing this alternative would have both short-term and long-term minor adverse impacts on parking. Short-term impacts on traffic associated with construction of a three-story parking garage at Site 10 would be similar to those described under the Proposed Action for construction of facilities.

If implemented, the parking garage would replace parking that is currently used by personnel located in the northern portion of the NSA campus. Although spaces would be replaced on a one-to-one basis, this alternative could displace this parking as much as 0.75 miles from Site 3 (this supposes that Site 3 is selected for the location of the North Utility Plant because it would be the farthest from Site 10 and so provides a worst-case scenario). This would effectively shift the overall parking profile for the NSA campus southeastward approximately 0.1 mile. As with other parking alternatives, individuals would experience small changes in the distance and route they would walk to get to their work locations.

4.10 Hazardous Materials and Wastes

Evaluation of impacts on hazardous materials and wastes considers whether a proposed action would result in noncompliance with applicable Federal or state regulations; increase amounts of hazardous materials or wastes so that current waste management plans and policies are exceeded; or expose workers, residents, or visitors to hazardous materials or wastes.

4.10.1 No Action Alternative

Under the No Action Alternative, potentially hazardous materials that would otherwise be used during construction would not be brought on site. Therefore, no adverse impacts are expected from the introduction of hazardous and toxic materials and the generation of hazardous wastes.

The existing boiler plant would continue to be used in its current condition; therefore, the two 200,000-gallon ASTs at the plant would not be replaced. The ASTs servicing the boiler plant are a potential source of environmental contamination because of their condition and age. The associated containment dikes have been compromised, despite ongoing maintenance, by intruding vegetation and groundhog holes. A leak from an AST or a spill during AST refueling could result in soil or water contamination and subsequent expensive and difficult remediation.

4.10.2 Proposed Action

4.10.2.1 North Utility Plant

Products containing hazardous materials would be procured and used during construction of the proposed North Utility Plant. Potentially hazardous materials that could be used on site during construction activities include paints, thinners, cleaners, asphalt, and fuel and motor oils for vehicles and equipment. It is anticipated that the quantity of products containing hazardous materials used during the construction of the North Utility Plant would be minimal and their use would be of short duration. Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with Federal and state regulations. No short-term adverse impacts on hazardous materials management would be expected during construction. It is unlikely that contamination would occur during construction activities; however, should contamination occur (e.g., accidental spills), the handling, storage, transportation, and disposal activities would be conducted in accordance with applicable Federal, state, and local regulations and NSA policies and procedures.

The quantity of hazardous wastes generated from proposed construction activities is anticipated to be negligible. Contractors would be responsible for the disposal of hazardous wastes in accordance with Federal and state laws and regulations. No short-term impacts on NSA's hazardous waste management plan would be expected from construction activities.

The North Generator Facility would include 26 to 31 20,000-gallon ASTs for ultra-low sulfur diesel fuel, two 6,000-gallon ASTs for urea used in the SCR systems, and one 500-gallon AST for waste oil. Each storage tank would have containment consistent with the volume of fluid contained and in accordance with all current regulatory requirements. Small containers for chemicals used in water chemistry for cooling water systems, which would use internal circulation, would also be included. As required by the NSA's SPCC Plan, all ASTs would be provided with adequate secondary containment (either berms or double-walled construction) that should contain any petroleum spilled as a result of tank ruptures or leaks. All ASTs, pipes, valves, and appurtenances would be examined weekly to assess their condition. Visible oil leaks from ASTs would be promptly corrected and the containment residue would be removed within

72 hours of discovery. No long-term adverse impacts on hazardous materials management would be expected during operations. It is unlikely that contamination would occur during operational activities; however, should contamination occur (e.g., accidental spills), the handling, storage, transportation, and disposal activities would be conducted in accordance with applicable Federal and state regulations and NSA policies and procedures.

4.10.2.2 South Generator Facility

Products containing hazardous materials would be procured and used during construction of the proposed South Generator Facility. Potentially hazardous materials that could be used on site during construction activities include paints, thinners, cleaners, asphalt, and fuel and motor oils for vehicles and equipment. It is anticipated that the quantity of products containing hazardous materials used during the construction of the facility would be minimal and their use would be of short duration. Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with Federal and state regulations. No short-term adverse impacts on hazardous materials management during construction would be expected as a result of the Proposed Action.

The quantity of hazardous wastes generated from proposed construction activities is anticipated to be negligible. Contractors would be responsible for the disposal of hazardous wastes in accordance with Federal and state laws and regulations. No short-term impacts on NSA's hazardous waste management plan would be expected from construction activities.

The South Generator Facility would include 16 to 20 20,000-gallon ASTs for diesel fuel, two 6,000-gallon ASTs for urea used in the SCR systems, and one 500-gallon AST for waste oil. Each storage tank would have containment consistent with the volume of fluid contained and in accordance with all current regulatory requirements. Small containers for chemicals used in water chemistry for cooling water systems, which would use internal circulation, would also be included. As required by the NSA's SPCC Plan, all ASTs would be provided with adequate secondary containment (either berms or double-walled construction) that should contain any petroleum spilled as a result of tank ruptures or leaks. All ASTs, pipes, valves, and appurtenances would be examined weekly to assess their condition. Visible oil leaks from ASTs would be promptly corrected and the containment residue would be removed within 72 hours of discovery. No long-term adverse impacts on hazardous materials management would be expected during operations. It is unlikely that contamination would occur during operational activities; however, should contamination occur (e.g., accidental spills), the handling, storage, transportation, and disposal activities would be conducted in accordance with applicable Federal and state regulations and NSA policies and procedures.

4.10.2.3 Central Boiler Plant

Products containing hazardous materials would be procured and used during construction of the proposed Central Boiler Plant. Potentially hazardous materials that could be used on site during construction activities include paints, thinners, cleaners, asphalt, and fuel and motor oils for vehicles and equipment. It is anticipated that the quantity of products containing hazardous materials used during the construction of the facility would be minimal and their use would be of short duration. Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with Federal and state regulations. No adverse impacts from construction on hazardous materials management would be expected as a result of the Proposed Action.

Long-term, direct minor to moderate beneficial impacts on the management of hazardous materials at NSA would be expected due to the replacement of the existing ASTs and containment dikes at the boiler plant with modern ASTs and containment. The ASTs servicing the boiler plant are a potential source of

environmental contamination because of their condition and age. The boiler plant has had several releases of No. 2 and No. 6 fuel oil to the soil, groundwater, and surface water in the past. The associated containment dikes have also been compromised, despite ongoing maintenance, by intruding vegetation and wildlife. DOD proposes to remove two 200,000 gallon ASTs and containment at the current boiler plant and replace them with modern steel ASTs and containment. Secondary containment for the new ASTs would meet or exceed USEPA, MDE, and National Fire Protection Association standards. Removal of the existing ASTs and containment would follow the appropriate Federal and state specifications. As required by the NSA's SPCC Plan, all ASTs, pipes, valves, and appurtenances would be examined daily to assess their condition. Visible oil leaks from ASTs and USTs would be promptly corrected and the containment residue would be removed within 72 hours of discovery. Therefore, replacement of the ASTs and containment would have long-term beneficial impacts.

4.10.2.4 Utility Corridors

DOD will not disclose the locations of existing or proposed utility corridors for security reasons. No significant adverse impacts would be expected related to the management of hazardous and toxic substances during utility line installation, relocation, or realignment. All utility lines would be installed and maintained in accordance with existing Federal and state safety standards and regulations. Potentially hazardous materials that could be used on site during utility line construction activities include paints, thinners, cleaners, asphalt, and fuel and motor oils for vehicles and equipment. All materials would be handled in accordance with established procedures and guidelines. No impacts would be expected from hazardous waste disposal as hazardous waste disposal would be handled in accordance with applicable state and Federal laws and regulations.

4.10.3 Facility Alternatives

4.10.3.1 Site 1

Site 1 is a facility alternative for the North Utility Plant and is currently within a paved parking lot. There are no known environmental concerns at this site. No additional impacts on hazardous materials and wastes at NSA are expected due to the selection of this facility alternative. Generation of nonhazardous solid waste (asphalt and concrete) would be expected if the current parking lot is replaced.

4.10.3.2 Site 2

Site 2 is a facility alternative for the North Utility Plant and is currently within a parking lot. There are no known environmental concerns at this site. No additional impacts on hazardous materials and wastes at NSA are expected due to the selection of this facility alternative. Generation of nonhazardous solid waste (asphalt and concrete) would be expected if the current parking lot is replaced.

4.10.3.3 Site 3

Site 3 is a facility alternative for the North Utility Plant and is currently within a parking lot. There are no known environmental concerns at this site. No additional impacts on hazardous materials and wastes at NSA are expected due to the selection of this facility alternative. Generation of nonhazardous solid waste (asphalt and concrete) would be expected if the current parking lot is replaced.

4.10.3.4 Site 4 (Preferred Alternative)

Site 4 is the preferred alternative for the North Utility Plant and is currently within a Forest Conservation Area. There are no known environmental concerns at this site. No additional impacts on hazardous

materials and wastes are expected due to the selection of this location alternative; however, because the site is within a wooded area, the soils might be more susceptible to permeation by spills of petroleum products or hazardous liquids than those in Sites 1, 2, and 3, which are currently located under existing parking lots and are therefore much more compacted and impermeable.

4.10.3.5 Site 5 (Preferred Alternative)

Site 5 is the preferred alternative for the South Generator Facility and is the location of an enclosed utility yard. An area south of the site was used as a burial site for ash and magnetic tape residue in the 1970s and 1980s. Groundwater sampling around the area has not indicated any contamination from the presence of these materials.

Since Site 5 is the location of existing generators, the continued use of this site for emergency generators would maximize existing infrastructure and reduce construction effort. A reduction in construction effort would decrease the amount of hazardous materials onsite and length of time these hazardous materials are procured and used.

4.10.3.6 Site 6

Site 6 is a facility alternative for the South Generator Facility and is currently within an unimproved wooded area. There are no known environmental concerns at this site. No additional impacts on hazardous materials and wastes are expected due to the selection of this location alternative; however, because the site is within a wooded area, the soils might be more susceptible to permeation by spills of petroleum products or hazardous liquids than those in Sites 5 and 7, which are currently located under existing parking lots and are therefore much more compacted and impermeable.

4.10.3.7 Site 7

Site 7 is a facility alternative for the Central Boiler Plant or the South Generator Facility and is currently a parking lot that was previously used as a motor pool. No additional impacts on hazardous materials and wastes are expected due to the selection of this location alternative. Although adjacent properties to this site are of potential environmental concern (i.e., CMC facility located on eastern adjacent property and former photoprocessing plant on southern adjacent property), the construction of a Central Boiler Plant or South Generator Facility on this site should not impact these adjacent properties. The previous motor pool at Site 7 included a vehicle fueling station with USTs. These USTs were closed in 2000 under supervision from MDE. MDE declared the site clear of contamination and the tanks were filled in place (DOD 2007). Generation of nonhazardous solid waste (asphalt and concrete) would be expected if the current parking lot is replaced.

4.10.3.8 Site 8 (Preferred Alternative)

Site 8 is the preferred alternative for the Central Boiler Plant and is currently an existing boiler plant within an enclosed utility yard. Since Site 8 is the current location of the boiler plant, replacement of an in-kind Central Boiler Plant with comparably sized units would maximize the use of existing infrastructure and reduce construction effort. A reduction in construction effort might lessen the amount of hazardous materials on site and length of time these hazardous materials are procured and used.

Long-term, direct minor to moderate beneficial impacts on the management of hazardous materials at NSA would be expected due to the replacement of the existing ASTs and containment dikes at the boiler plant with modern ASTs and containment. The ASTs servicing the boiler plant are a potential source of environmental contamination because of their condition and age. The boiler plant has had several

releases of No. 2 fuel oil to the soil, groundwater, and surface water in the past. The associated containment dikes have also been compromised, despite ongoing maintenance, by intruding vegetation and wildlife. DRO, GRO, and naphthalene levels have been detected above MDE groundwater standards in several of the wells at Site 8 from 2003 to 2008; however, groundwater sampling has not indicated contamination above USEPA BTEX standards in any of these wells.

4.10.4 Parking Alternatives

Products containing hazardous materials would be procured and used during construction of each of the parking alternatives. It is anticipated that the quantity of products containing hazardous materials used during construction would be minimal and their use would be of short duration. Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with Federal and state regulations. No adverse impacts on hazardous materials management during construction would be expected as a result of parking lot or structure construction activities.

4.10.4.1 Surface Parking Lot on Sites 4 and 6

The construction of a surface parking lot is expected to be less construction-intensive than the three parking garage alternatives discussed in the following sections; therefore, the use of hazardous substances and petroleum products on site would be of less duration and quantity than the other parking alternatives. However, Sites 4 and 6 are both undeveloped forested areas with soils of an assumed higher permeability than those underneath existing parking lots. This could result in a slightly higher risk of soil permeation and susceptibility to groundwater contamination should a spill occur onsite.

4.10.4.2 Parking Garage on Site 3

The construction of a parking garage is expected to be more construction-intensive, resulting in a longer period of time that hazardous substances and petroleum products may be used on site. Site 3 is currently a parking lot with no known environmental concerns. No additional impacts on hazardous materials and wastes at NSA are expected due to the selection of this parking alternative. Generation of nonhazardous solid waste (e.g., asphalt and concrete) would be expected if the current parking lot is replaced.

4.10.4.3 Parking Garage on Site 9

The construction of a parking garage is expected to be more construction-intensive, resulting in a longer period of time that hazardous substances and petroleum products may be used on site. Site 9 is currently a parking lot. No additional impacts on hazardous materials and wastes at NSA are expected due to the selection of this parking alternative. Generation of nonhazardous solid waste (e.g., asphalt and concrete) would be expected if the current parking lot is replaced.

4.10.4.4 Parking Garage on Site 10

The construction of a parking garage is expected to be more construction-intensive, resulting in a longer period of time that hazardous substances and petroleum products may be used on site. Site 10 is currently developed with a parking lot and structures. No additional impacts on hazardous materials and wastes at NSA are expected due to the selection of this parking alternative; however, a former mortar range was recently discovered just east of this site and is currently under investigation for potential soil and groundwater contamination and the presence of UXO. Since Site 10 is developed, the likelihood of discovering UXO is negligible; however, if this site is selected, care should be taken during the construction process to restrict activities and equipment to the developed areas within the site. Generation

of nonhazardous solid waste (e.g., asphalt and concrete) would be expected if the current parking lot is replaced.

4.11 Socioeconomics and Environmental Justice

Socioeconomics. This section addresses the potential for direct and indirect impacts that the Proposed Action would have on the local or regional economy, with an emphasis on the construction industry. Impacts are evaluated for their potential to stimulate the economy through the purchase of goods and services or employment, or to strain the economy by overstimulation of a particular sector (e.g., not enough housing available to accommodate a large increase in permanently-based personnel).

Environmental Justice. Ethnicity and poverty status are examined and compared to regional and state statistics to determine if minority or low-income groups could be disproportionately affected by a proposed action. As discussed in **Section 3.11**, the ROI does not have a disproportionate percentage of minority or low-income populations, so no environmental justice issues would be expected (see **Table 3.11-1**). Therefore, environmental justice is not considered in further detail in this impacts analysis.

4.11.1 No Action Alternative

Under the No Action Alternative, DOD would not construct the North Utility Plant, South Generator Facility, and corresponding paved surface or structure-based parking. DOD would not replace the aging components of the Central Boiler Plant. No impacts on socioeconomics would be expected.

4.11.2 Proposed Action

4.11.2.1 North Utility Plant

Minor beneficial impacts on socioeconomics would be expected from the construction of the Northern Utility Plant.

Indirect impacts from the proposed construction projects are expected to be both short- and long-term and beneficial on the local construction industry and employment. Indirect beneficial impacts would include construction expenditures for building materials, construction workers' wages and taxes, and purchases of goods and services in the area. The proposed North Utility Plant, including the electrical substation, the generator facility, and related fuel and chemical storage, would have a total construction footprint of 105,000 ft². There would be a minor increase of less than 1 percent in contracted workers for operations, which would cause a minor beneficial impact. These contract workers might be located within the ROI, Anne Arundel County, or the Baltimore-Washington metropolitan area.

It is assumed that construction crews and equipment would be employed from the local workforce, resulting in beneficial short-term direct impacts on employment and the local economy. Construction composes between approximately 2 and 8 percent of the labor force in the Fort Meade ROI and Anne Arundel County, as shown in **Table 3.11-1**, so there is no need for outside workers. The financial benefits would be expected to stay within the ROI and county. Therefore, short- and long-term beneficial impacts would be expected.

4.11.2.2 South Generator Facility

Minor beneficial impacts on socioeconomics would be expected from the construction of the South Generator Facility.

Indirect impacts from the proposed construction projects are expected to be both short- and long-term and beneficial on the local economy and employment. Indirect beneficial impacts would be similar to but slightly less than those for the North Utility Plant. The proposed generator facility, including fuel storage, would have a total construction footprint of 60,000 ft². With a smaller footprint and less infrastructure expected, there would be less construction. There would be a minor increase of less than 1 percent in contracted workers for operations, and impacts would be similar to those for the North Utility Plant.

It is assumed that construction crews and equipment would be employed from the local workforce, resulting in beneficial short-term direct impacts on employment and the local economy. Construction composes between approximately 2 and 8 percent of the labor force in the Fort Meade ROI and Anne Arundel County, as shown in **Table 3.11-1**, so there is no need for outside workers. The financial benefits would stay within the ROI and county. Therefore, short- and long-term beneficial impacts would be expected.

4.11.2.3 Central Boiler Plant

Minor beneficial impacts on socioeconomics would be expected from the construction of the Central Boiler Plant.

Indirect impacts from the proposed construction projects are expected to be both short- and long-term and beneficial on the local economy and employment. Indirect beneficial impacts would be similar to, but less than, those for the North Utility Plant. The proposed boiler facility, including fuel storage, would have a total construction footprint of 18,000 ft². Less construction would be required than for the North Utility Plant, so economic benefits would be smaller. There would be a slight increase of less than 1 percent in contracted workers for operations, and impacts would be similar to those for the North Utility Plant.

It is assumed that construction crews and equipment would be employed from the local workforce, resulting in beneficial short-term direct impacts on employment and the local economy. Construction composes between approximately 2 and 8 percent of the labor force in the Fort Meade ROI and Anne Arundel County, as shown in **Table 3.11-1**, so there is no need for outside workers. The financial benefits would stay within the ROI and county. Therefore, short- and long-term beneficial impacts would be expected.

4.11.2.4 Utility Corridors

Minor beneficial impacts on socioeconomics would be expected from utility line trenching.

Utility line trenching would disturb approximately 90,000 ft² for electrical distribution lines and 53,000 ft² for transmission lines. The construction and trenching of these lines would cause a slight beneficial impact on construction and related purchases within the local economy.

4.11.3 Facility Alternatives

4.11.3.1 Site 1

The impacts of Site 1 would be slightly higher than those stated previously for the North Utility Plant. Since the site is currently a parking lot, demolition of the paved area would occur in order to construct the utility plant. It would also result in the loss of 7.2 acres of parking, and other parking would have to be constructed to compensate for the loss. This would increase the amount of labor required for construction on this site, resulting in a slightly higher short-term beneficial impact.

4.11.3.2 Site 2

The impacts of Site 2 would be slightly higher than those stated previously for the North Utility Plant. Since the site is currently a parking lot, demolition would occur on the paved area in order to construct the utility plant. It would also result in the loss of 4.1 acres of parking, and other parking would have to be constructed to compensate for the loss. This would increase the amount of labor required for construction on this site, resulting in a slightly higher short-term beneficial impact. The impact would be less than that for Site 1, since less parking would be lost and would have to be constructed elsewhere.

4.11.3.3 Site 3

The impacts of Site 3 would be slightly higher than those stated previously for the North Utility Plant. Since the site is currently an overflow parking lot, demolition would occur on the paved area in order to construct the utility plant. It would also result in the loss of 5.6 acres of parking, and other parking would have to be constructed to compensate for the loss. This would increase the amount of labor required for construction on this site, resulting in a slightly higher short-term beneficial impact. The impact would be less than that for Site 1, since less parking would be lost and have to be constructed elsewhere.

4.11.3.4 Site 4 (Preferred Alternative)

The impacts of Site 4 would be like those stated previously for the North Utility Plant. Since the site is currently undeveloped within a Forest Conservation Area, there would be no need for demolition of existing pavements to construct the utility plant. Several acres of tree removal would be necessary in order to construct the generator facility. This would increase the amount of labor required for construction on this site, resulting in a slightly higher short-term beneficial impact.

4.11.3.5 Site 5 (Preferred Alternative)

The impacts of Site 5 would be slightly higher than those stated previously for the South Generator Facility. Since the site is currently the location of an existing generator facility and is within an enclosed utility yard, demolition of existing facilities would occur within the area to construct the new generator facility. This would increase the amount of labor required for construction on this site, resulting in a slightly higher short-term beneficial impact.

4.11.3.6 Site 6

The impacts of Site 6 would be similar to those stated previously for Site 4. Since the site is currently one of two remaining tree stands, several acres of tree removal would be necessary to construct the generator facility. This would increase the amount of labor required for construction on this site, resulting in a slightly higher short-term beneficial impact.

4.11.3.7 Site 7

The impacts of Site 7 would be slightly higher than those stated previously for the South Generator Facility and the Central Boiler Plant. Since the site is currently the location of the former motor pool, demolition of existing facilities would occur within the area to construct the boiler plant. This would increase the amount of labor required for construction on this site, resulting in a slightly higher short-term beneficial impact. It would also result in the loss of 2.2 acres of parking, and other parking would have to be constructed to compensate for the loss.

4.11.3.8 Site 8 (Preferred Alternative)

The impacts of Site 8 would be slightly higher than those stated previously for the Central Boiler Plant. Since the site is currently the location of the existing boiler facility and is within an enclosed utility yard, demolition of existing facilities would occur within the area to construct the boiler plant. This would increase the amount of labor required for construction on this site, resulting in a slightly higher short-term beneficial impact.

4.11.4 Parking Alternatives

4.11.4.1 Surface Parking Lot on Sites 4 and 6

Minor beneficial impacts on socioeconomics would be expected from construction of two surface parking lots on Sites 4 and 6.

Indirect impacts from the proposed construction projects are expected to be both short- and long-term and beneficial on the local economy and employment. Indirect beneficial impacts would include construction expenditures for tree removal, paving materials, construction workers' wages and taxes, and purchases of goods and services in the area. It is assumed that construction crews and equipment would be employed from the local workforce, resulting in beneficial short-term direct impacts on employment and the local economy. Construction composes between approximately 2 and 8 percent of the labor force in the Fort Meade ROI and Anne Arundel County, as shown in **Table 3.11-1**, so there is no need for outside workers. The financial benefits would be expected to stay within the ROI and county. Therefore, short- and long-term beneficial impacts would be expected.

4.11.4.2 Parking Garage on Site 3

Minor beneficial impacts on socioeconomics would be expected from construction of a parking garage on Site 3.

Indirect impacts from the proposed construction projects are expected to be both short- and long-term and beneficial on the local economy and employment. Indirect beneficial impacts would include construction expenditures for building materials, paving materials, construction workers' wages and taxes, and purchases of goods and services in the area. It is assumed that construction crews and equipment would be employed from the local workforce, resulting in beneficial short-term direct impacts on employment and the local economy. Construction composes between approximately 2 and 8 percent of the labor force in the Fort Meade ROI and Anne Arundel County, as shown in **Table 3.11-1**, so there is no need for outside workers. The financial benefits would be expected to stay within the ROI and county. Therefore, short- and long-term beneficial impacts would be expected. Since Site 3 is currently used as a parking lot, demolition would occur on the existing paved area to construct a parking garage. Construction of a parking garage would result in considerably more construction costs than paving two surface lots; therefore, the socioeconomic benefits would be greater under this alternative.

4.11.4.3 Parking Garage on Site 9

Minor beneficial impacts on socioeconomics would be expected from construction of a parking garage on Site 9.

Indirect impacts from the proposed construction projects are expected to be both short- and long-term and beneficial on the local economy and employment. Indirect beneficial impacts would include construction expenditures for building materials, paving materials, construction workers' wages and taxes, and

purchases of goods and services in the area. Impacts associated with this alternative would be essentially the same as those described for the construction of a parking garage on Site 3.

4.11.4.4 Parking Garage on Site 10

Minor beneficial impacts on socioeconomics would be expected from construction of a parking garage on Site 10.

Indirect impacts from the proposed construction projects are expected to be both short- and long-term and beneficial on the local economy and employment. Indirect beneficial impacts would include construction expenditures for building materials, paving materials, construction workers' wages and taxes, and purchases of goods and services in the area. Impacts associated with this alternative would be similar to but slightly larger than those described for the construction of a parking garage on Site 3. Site 10 has both a parking lot and existing structures (approximately 15,400 ft²) that would require demolition. This would increase the amount of labor required for construction on this site, resulting in a slightly higher short-term beneficial impact.

4.12 Unavoidable Adverse Impacts

If the Proposed Action were implemented, some unavoidable adverse impacts would be expected. The level of impact would primarily be dependent on the location alternative selected. **Section 5** of this EIS identifies mitigation measures and BMPs that could be implemented to reduce the intensity of unavoidable adverse impacts.

Sites 4 and 6 are undeveloped sites that have a greater potential for adverse impacts. If either of these sites were selected, then minor adverse impacts on vegetation, wildlife, and storm water would be unavoidable because that habitat would be lost and replaced with impervious surfaces. It is anticipated that potentially adverse impacts on geological resources and water resources (i.e., sedimentation, erosion, storm water runoff, and stream crossing) could be avoided or minimized during site design and use of BMPs. However, due to the array of facility and parking alternatives available, development of Sites 4 and 6 could be avoided entirely if previously developed sites were selected for the facility and parking alternatives. For example, the option of constructing the North Utility Plant at Sites 1, 2, or 3; the South Generator Facility at Sites 5 or 7; the Central Boiler Plant at Sites 7 or 8; and a parking garage at Sites 3, 9, 10, or another currently developed site would negate the need to develop Sites 4 or 6, so there would be no permanent loss of vegetation and no increases in impervious surfaces.

Construction of the North Utility Plant would be expected to result in minor to moderate adverse impacts that are unavoidable. It is anticipated that construction of the North Utility Plant at either Sites 1 or 2 could have minor adverse impacts on the nearby MFH neighborhood because of potential visual intrusion of the exhaust stacks as well as operational noise when the generators are in use. Similarly, construction of the North Utility Plant at Site 3 could have minor adverse impacts on the BW Parkway (which is also a cultural viewshed issue because the BW Parkway is on the NRHP), the National Cryptologic Museum, or National Vigilance Park.

Construction of the proposed North Utility Plant, the South Generator Facility, and the Central Boiler Plant would introduce stationary sources of noise and air emissions. This is also an unavoidable adverse impact.

Generally, construction and demolition activities would cause ground disturbance. Short-term adverse impacts on soil and water resources as a result of sedimentation, erosion, and storm water runoff are unavoidable. Construction and demolition activities also generate solid waste.

4.13 Relationship Between Short-Term Uses and Long-Term Productivity

Short-term uses of the biophysical components of the human environment include direct impacts, usually related to construction activities, that occur over a period of less than 5 years. Long-term uses of the human environment include those impacts that occur over a period of more than 5 years, including permanent resource loss.

This EIS identifies potential short-term adverse impacts on the natural environment as a result of construction activities. These potential adverse impacts include soil erosion, storm water runoff into surface water and wetlands, and removal of vegetation and wildlife habitat. Redevelopment of a site for a new facility would not adversely impact long-term productivity of sites. If Sites 4 and 6 were developed as facility or parking alternatives, then the long-term productivity of these forested sites (8.7 acres) would be adversely impacted.

4.14 Irreversible and Irretrievable Commitments of Resources

An irreversible or irretrievable commitment of resources refers to impacts on or losses to resources that cannot be reversed or recovered, even after an activity has ended and facilities have been decommissioned. A commitment of resources is related to use or destruction of nonrenewable resources, and the impacts that loss will have on future generations. For example, if Prime Farmland is developed, there would be a permanent loss of agricultural productivity.

Construction and operation of the proposed utilities would involve the irreversible and irretrievable commitment of materials, energy, biological resources, landfill space, and human resources. The impacts on these resources would be permanent.

Materials. Material resources irretrievably used for the Proposed Action include steel, concrete, and other building materials. Such materials are not in short supply and would not be expected to limit other unrelated construction activities. The irretrievable use of material resources would not be considered significant. The preferential use of recycled building materials would reduce the overall amount of materials used for building construction.

Energy. Energy resources used for the Proposed Action would be irretrievably lost. These include fossil fuels (e.g., gasoline, diesel, natural gas, No. 2 fuel oil) and electricity. During construction, gasoline and diesel fuel would be used for the operation of construction vehicles and equipment. The proposed North Utility Plant (i.e., North Electrical Substation and North Generator Facility) and the South Generator Facility would be used to ensure multiple redundancies in emergency electrical power is available at all times, so the Proposed Action would not noticeably increase primary power used on the NSA campus. However, electrical power supplied by BGE, which would come from large coal, natural gas, or nuclear power generating plants, would provide primary power to the North Electrical Substation. The North Generator Facility and the South Generator Facility would operate using diesel fuel as needed to provide electrical power during emergency and maintenance conditions. The proposed Central Boiler Plant would continue to operate primarily on natural gas and occasionally on No. 2 fuel oil as needed. Operation of the Central Boiler Plant would not be expected to increase use of energy resources because the proposed boilers would replace old and inefficient boilers in-kind. Overall, consumption of energy resources would not place a significant demand on their availability in the region. Therefore, no significant impacts would be expected.

Biological Resources. Depending on the alternative selected for facility and parking locations, the Proposed Action would result in some irretrievable loss of vegetation and wildlife habitat. The upper boundary of impacts associated with the alternatives could result in the loss of approximately 8.7 acres of forest. The loss of 8.7 acres would remove potential wildlife habitat and could degrade some remaining scenic and natural qualities of the NSA campus. This result would be a permanent loss or conversion of decreasing open spaces.

Landfill Space. The generation of construction and demolition debris and subsequent disposal of that debris in a landfill would be an irretrievable adverse impact. The amount of construction debris generated would depend on the facility and parking alternative selected. Construction contractors would be expected to recycle at least 40 percent of the debris that is generated. If a greater percentage is recycled, then irretrievable impacts on landfills would be reduced. There are numerous rubble landfills and construction and demolition processing facilities that could handle the waste generated. However, any waste that is generated by the Proposed Action that is disposed of in a landfill would be considered an irretrievable loss of that landfill space.

Human Resources. The use of human resources for construction is considered an irretrievable loss only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the Proposed Action represents employment opportunities and is considered beneficial.

4.15 Cumulative Impacts

This cumulative impacts analysis summarizes expected environmental effects for the combined impacts of past, present, and reasonably foreseeable future projects. **Section 2.4** presented projects that are considered temporally or geographically related to the Proposed Action, and, as such, have the potential to result in cumulative impacts. Projects identified for detailed consideration for potential cumulative impacts include the following:

- Construction of a South Electrical Substation in the southern portion of the NSA campus, which is considered for potential cumulative impacts because it would connect to the proposed South Generator Facility and would be located immediately south of Site 5.
- BRAC actions at Fort Meade, which would include the construction of 3.0 million ft² of facility and parking space, the addition of 5,700 people to the Fort Meade workforce, and the loss of approximately 25 acres of forest.
- EUL actions at Fort Meade, which would include the construction of approximately 2.0 million ft² of office and parking space, the addition of 10,000 people to the workforce in the Fort Meade area, and the loss of approximately 205 acres of forest.
- Ongoing actions at Midway Common MFH at Fort Meade, which is considered for potential cumulative impacts because this neighborhood is in close proximity to Sites 1 and 2, though construction and renovation activities on these MFH units are anticipated to be complete before any construction would occur for the Proposed Action.
- Construction of the Central Maryland Transit Operations Facility on Fort Meade, which would provide storage and maintenance space for 120 busses and employ 200 employees.
- Construction of a BGE Substation southwest of Fort Meade, which would be constructed south of MD-32 and west of the BW Parkway and ultimately provide power from the electrical grid to the proposed North Electrical Substation. This project includes construction of a high-voltage

substation and the installation of transmission lines from the new BGE Substation to a point along MD-32 where they would enter the NSA campus. This project is in the early planning stages.

This cumulative impacts section presents the resource-specific impacts related to the past, present, and reasonably foreseeable actions identified above.

4.15.1 Land Use

The Proposed Action would be consistent with existing land uses and would have minimal potential to combine with other projects to produce an adverse cumulative impact on land use. Since the location of a future overhead or belowground transmission line associated with the BGE Substation (which is not a component of this Proposed Action) is not known, the potential exists for potential adverse visual impacts from the North Utility Plant to combine with adverse cumulative impacts if an overhead transmission line is used crossing the BW Parkway. When siting transmission lines, BGE would be responsible for acquiring the necessary rights-of-way and constructing and maintaining utility corridors in accordance with agreements in the rights-of-way. The location of the BGE Substation could dictate exactly where transmission lines enter the NSA campus along MD-32. Cumulative land use impacts on sensitive surrounding land uses, such as the historic BW Parkway or the Oak Hill Youth Center, could be minimized by selective siting to avoid sensitive areas and use of underground power transmission lines where visual elements could be impacted. However, off-installation siting decisions of BGE infrastructure are not within the DOD's decisionmaking authority and are not within the scope of this EIS.

As identified in **Section 4.1**, construction of the North Utility Plant at Sites 1 and 2 could result in minor adverse impacts as a result of visual and noise intrusion on the Midway Common MFH area. Ongoing renovations at Midway Common MFH are anticipated to be completed in 2008; no additional cumulative impacts on land use from simultaneous construction activities and long-term operations are expected.

Construction of the proposed utilities would result in cumulative loss of forested land even though the loss due to the Proposed Action is small compared with the much larger BRAC and EUL projects at Fort Meade. The Proposed Action could result in the conversion of two forested parcels (Sites 4 and 6) totaling 8.7 acres to utilities or parking land uses, depending on the alternative selected for implementation, compared with 225 acres of forest lost to administrative and operations land uses as a result of the BRAC and EUL actions. The BRAC/EUL EIS identified adverse impacts on land use as a result of increased personnel, increased traffic, and development of currently undeveloped land (USACE 2007). The Proposed Action would be removed from the general locations of the BRAC and EUL parcels (see **Figure 2.4-1**), so negligible cumulative impacts on land use would be expected.

No cumulative impacts on land use due to construction and operation of the South Electrical Substation and the Proposed Action would be expected. Construction of the proposed South Generator Facility at any of the facility alternatives would be consistent with existing and foreseeable land use. The Proposed Action would be separated geographically from the general location of the Central Maryland Transient Operations Facility (see **Figure 2.4-1**), so negligible cumulative impacts on land use would be expected.

4.15.2 Noise

Implementing the Proposed Action or alternatives would have negligible ongoing or cumulative impacts on the noise environment. Following construction, incremental increases in the overall noise environment would be expected due to testing of the equipment and during periods where emergency back-up power was required. These levels would be intermittent, limited in duration, and have little impact on areas outside the NSA campus. The past, current, and reasonably foreseeable noise environment in and around the proposed sites is currently dominated by existing and future traffic noise from the adjacent roadways.

The change in noise for all noise-sensitive receptors for all alternatives would be minor and not likely distinguishable from future noise environments under the No Action Alternative. Therefore, the cumulative impacts associated with the Proposed Action and alternatives would be negligible.

4.15.3 Air Quality

Historically, the heavily populated and urban areas within the northeast corridor of the United States have had more anthropogenic emissions than other areas of the country. These emissions, when combined with the stagnation impact from the coastal weather patterns, lead to higher concentrations of regional air pollutants, which result in the current nonattainment designation. Since 1990, when the CAA came into full force, states (both collectively and individually) have implemented plans (i.e., SIPs) to reduce emissions in a strategic way to meet the NAAQS. Since that time there has been a steady decrease in both emissions and atmospheric concentrations of air pollutants.

Emissions from the Proposed Action would be cumulative to both past and present emissions. Current regional activities would be the dominant source of emissions. The Proposed Action would have both short-term and long-term negligible adverse cumulative impacts on air quality. Impacts on air quality would primarily be due to the use of heavy construction equipment during construction and operational emissions from new boilers and generators. Other projects would occur within the region and would produce some measurable amounts of air pollutants. Specifically, the BRAC and EUL actions at Fort Meade would occur during the same timeframe as the Proposed Action. These actions, as evaluated in the BRAC/EUL EIS, would have minor adverse impacts on air quality resulting primarily from short-term construction activities and long-term increased commuters (USACE 2007).

The Proposed Action, the South Electrical Substation, the BRAC/EUL actions, the Central Maryland Transit Operations Facility, and the BGE Substation, as well as other development activities within the region would have some level of construction-related emissions. The State of Maryland takes into account the impacts of all past, present, and reasonably foreseeable future projects in the region and associated emissions during the development of their SIP. Within the SIP, the State of Maryland has a detailed budget for all sources of air emissions including those from construction. Estimated emissions generated by the Proposed Action would be below *de minimis* levels and not regionally significant. Therefore, these construction-related impacts would not contribute to cumulative short-term impacts on air quality.

In addition to construction emissions, the Proposed Action would introduce new stationary sources of air emissions within the region. Other new stationary sources, such as small boilers and generators for individual facilities associated with BRAC and EUL actions, would produce some measurable amounts of air pollutants. Permitting requirements for the Proposed Action could vary based on the equipment, timing of the individual utility projects, and the types of emissions controls ultimately selected. Emissions controls could differ in specific features from the ones described in this EIS. However, during the final design stage and the permitting process either (1) the actual equipment, controls, or operating limitations would be selected to reduce the PTE below the major source threshold; or (2) the NNSR permitting process would require emission offsets be obtained at a 1 to 1.3 ratio from other previously decommissioned sources within the region. This cap-and-trade-type system is inherent to Federal and state air regulations and leads to a forced reduction in regional emissions. Therefore, long-term impacts from proposed stationary sources associated with the Proposed Action would not contribute to cumulative long-term impacts on air quality.

4.15.4 Geological Resources

No cumulative impacts on geological resources would be expected. Direct impacts on topography, geology, and soils from construction are localized to the site that is being developed. Construction sites that are greater than 5,000 ft² require development of BMPs, storm water management plans, and erosion- and sediment-control plans to minimize the potential for impacts offsite. BRAC/EUL actions, the Central Maryland Transit Operations Facility, and BGE Substation would not occur near the Proposed Action construction sites and would not result in cumulative impacts. Ongoing renovations at the Midway Common MFH, which is adjacent to Sites 1 and 2 for the Proposed Action, primarily include installing new carpet, electrical fixtures, and plumbing hardware (Picerne 2003b); these actions would have no impact on soils or geology. The South Electrical Substation is adjacent to Site 5 and near Site 8. However, the Proposed Action and the South Electrical Substation have little potential for cumulative impacts on geological resources because they would likely occur at different times (the South Electrical Substation will be constructed in Fiscal Year (FY) 2009 while the South Generator Facility would be constructed in (FY 2010), and implementation of BMPs, storm water management plans, and erosion- and sediment-control plans would confine storm water and sediment to the construction site.

4.15.5 Water Resources

Long-term moderate cumulative impacts on water resources would be expected from the overall increases in impervious surfaces. The Proposed Action could result in the conversion of two forested parcels (Sites 4 and 6, totaling 8.7 acres) to facilities or parking lots, depending on the alternative selected for implementation. The South Electrical Substation, BRAC actions, EUL actions, Central Maryland Transit Operations Facility, and BGE Substation would also create impervious surfaces. Ongoing MFH construction and renovations would not be expected to create or remove large areas of impervious surfaces.

The removal of forest and other vegetation and the subsequent creation of impervious surface can increase storm water flows during rain events, introducing contaminants (e.g., oils, fertilizers, pesticides) into surface water bodies and possibly worsening downstream flooding if water channels are transporting more water in a shorter period of time. Cumulatively, the Proposed Action and other projects identified would increase impervious surfaces and could exacerbate water quality and flooding problems that are already occurring in the Little Patuxent River and other downstream areas. The cumulative increase in impervious surfaces would be considered a negligible contribution in the context of the whole watershed but could be noticeable on a more localized level. With appropriate implementation of post-construction BMPs and storm water management plans, these potentially adverse cumulative impacts would be minimized.

There is potential for short-term minor cumulative impacts on wetlands to occur. Wetland losses in the United States have resulted from draining, dredging, filling, leveling, and flooding for urban, agricultural, and residential development. Construction activities associated with the Proposed Action could result in a potential increase in surface runoff due to sheet flow into the stream on Site 4 during construction as a result of an increase in impervious surfaces. The BRAC/EUL actions also have the potential to result in indirect impacts on wetlands as a result of surface runoff (USACE 2007). Implementation of BMPs, storm water management plans, and erosion- and sediment-control plans, as required by Federal and state regulations, would minimize the potential for impacts on wetlands and other surface water bodies. Potential impacts of the BGE Substation on wetlands are unknown at this time.

4.15.6 Biological Resources

Cumulative short-term and long-term, direct and indirect, adverse impacts would be expected as a result of the development of currently undeveloped forested sites. The Proposed Action could result in the loss of two forested parcels (Sites 4 and 6) totaling 8.7 acres to utilities land or parking uses, depending on the alternative selected for implementation. The BRAC and EUL actions would result in the loss of 225 acres of forest and the Central Maryland Transit Operations Facility would result in the loss of 15 acres of forest (USACE 2007). Cumulative impacts would include increased segmentation of existing wildlife habitat on and around Fort Meade, increased potential for wildlife mortality associated with collision during construction, a reduction in the quality of wildlife habitat available, and the permanent removal of some vegetative cover. There would remain good habitat available on Fort Meade in Forest Conservation Areas and at the nearby Patuxent Research Refuge. No cumulative impacts on threatened or endangered species would be expected since there are no known occurrences on the NSA campus of Fort Meade.

The construction of the South Electrical Substation and ongoing MFH actions would have little impact on biological resources because they are in previously disturbed areas. It is unknown what impact the construction of the BGE Substation could have on biological resources at this time.

4.15.7 Cultural Resources

Potentially significant, permanent cumulative impacts on archaeological sites and architectural resources have likely occurred from past construction, on and off NSA and Fort Meade property as areas were disturbed for construction activities. No direct impacts on archaeological resources, historic resources, or TCPs would be expected under the Proposed Action because none are known within the APE. No impacts on cultural resources were identified in association with the South Electrical Substation, BRAC actions, EUL actions, MFH construction and renovation activities, or the Central Maryland Transit Operations Facility (DOD 2007, USACE 2007). It is unknown what impact the construction of the BGE Substation could have on cultural resources; coordination with the MHT is recommended to determine whether further consultation on cultural resources investigations would be necessary.

Indirect impacts associated with the Proposed Action could occur on the historic BW Parkway if any of the proposed buildings could be seen from the parkway (refer to analysis in **Sections 4.1 and 4.7**). NPS has expressed concerns about development along the BW Parkway. Continued removal of trees and construction of visible structures affects the visual and scenic qualities that contribute to its historic qualities. Cumulatively, the BGE Substation could adversely affect the visual and historic quality of the BW Parkway in localized places where the new infrastructure is visible. The level of impacts would depend on the location of the substation, particularly if it could be seen from the BW Parkway, as well as the intrusion of overhead power transmission lines crossing the parkway. Coordination between NPS and BGE would be necessary to determine if potential visual impacts on the BW Parkway would be adverse and whether mitigation (e.g., planting additional trees to provide screening or installation of underground lines crossing the BW Parkway) would be necessary.

4.15.8 Infrastructure

The Proposed Action and other projects identified would be expected to have long-term adverse and beneficial cumulative impacts on infrastructure systems. Electrical and heating system upgrades would ensure that the NSA has adequate capacity to meet immediate and future infrastructure needs, which would be a long-term beneficial impact. BRAC and EUL actions would increase personnel at Fort Meade substantially over the next few years. The BRAC/EUL EIS identified no significant impacts on potable water supply, electrical systems, natural gas, or solid waste management; however, the wastewater treatment system might require upgrades to handle the increased personnel and more stringent effluent

guidelines. Cumulatively, the Proposed Action would have a negligible impact on wastewater systems at Fort Meade. The BGE Substation would be expected to have long-term beneficial cumulative impacts on electrical power supply to Anne Arundel County by providing capacity for growth.

4.15.9 Transportation

The Proposed Action would have a negligible contribution to cumulative impacts on transportation in and around Fort Meade. The size and scope of the changes in the transportation systems associated with the Proposed Action would be extremely small when compared to current conditions and to other planned transportation-related projects in the area, particularly the BRAC and EUL actions and the Central Maryland Transit Operations Facility. Significant intersection and road improvements on Fort Meade and in surrounding areas will be occurring over the next few years to prepare for the increased BRAC and EUL personnel. Construction of the Central Maryland Transit Operations Facility and other major improvements in local and regional mass transit are also expected to help ease traffic congestion and provide commuting options. As a result, the traffic impacts associated with the Proposed Action would not produce a substantial cumulative impact. If additional employees are added to Fort Meade in the future outside of those associated with the Proposed Action, limiting the number and location of available parking spaces could cause automobile drivers to seek alternate methods of transportation (e.g., carpool, vanpool, public transit). This would have a minor cumulative benefit on transportation resources.

4.15.10 Hazardous Materials and Wastes

No cumulative adverse impacts would be expected as a result of hazardous materials and wastes. Increased amounts of hazardous materials and petroleum products would be used during the construction and operations associated with the Proposed Action. The installation of the North and South Generator Facilities would place additional ASTs for diesel, urea, and waste oil within the NSA campus. The installation of the Central Boiler Plant would replace existing No. 2 fuel oil ASTs. Anticipated increases would not result in additional regulatory requirements. All other projects identified for cumulative impacts analysis would be expected to use hazardous materials and generate hazardous wastes during construction activities, but all uses would be in accordance with existing laws, regulations, and management plans. Hazardous materials, wastes, and petroleum products would be contained and disposed of according to procedures already in place at NSA and Fort Meade.

4.15.11 Socioeconomics and Environmental Justice

While the Proposed Action would have no direct significant impacts, the BRAC and EUL actions would have significant socioeconomic impacts. With an increase of approximately 15,900 personnel within the ROI and Anne Arundel County, there would be an increase in regional economic activity, as well as an increase in demand for housing and local community services (e.g., schools, police). If existing regional resources are strained and population increases occur at a pace that cannot be accommodated by existing infrastructure, there will be a negative socioeconomic impact (i.e., overcrowding). As infrastructure expands to accommodate the increase, this leads to a further increase in construction of schools and hospitals with an increase in associated personnel. An example would be that if more schools need to be built as a result of the increased in personnel, more teachers would need to be hired. Construction of these projects would have short-term, significant, direct beneficial impacts on socioeconomic resources through increased construction labor employment and purchase of related goods and services. Job creation as a result of expanded infrastructure and an increase in the demand for social services would have a long-term beneficial socioeconomic impact. The overall economic impact would be beneficial because Fort Meade expansion would stimulate more spending within the ROI by both Fort Meade and its employees.

SECTION 5

**BEST MANAGEMENT PRACTICES AND
MITIGATION MEASURES**

5. Best Management Practices and Mitigation Measures

The Proposed Action has the potential to result in adverse environmental impacts. The Proposed Action includes design measures to avoid adverse impacts to the extent practicable. Unavoidable impacts would be minimized or compensated for to the extent practicable. In accordance with CEQ regulations (40 CFR 1502.16(h)), mitigation measures must be considered for adverse environmental impacts. Once a proposed action is considered significant, then mitigation measures must be developed where it is feasible to do so.

The DOD would comply with all permitting requirements. As identified in **Table 1.3-1** and discussed in **Section 4**, the Proposed Action would require permitting under the CWA, the CAA, and the Maryland Forest Conservation Act. All permits would be obtained prior to project implementation. As individual projects are implemented, permits would identify site-specific BMPs to avoid or reduce impacts. Additional site-specific and project-specific mitigation measures could then be applied during the permitting process if unavoidable adverse impacts remain.

5.1 Best Management Practices

General Construction and Post-Construction. During construction and immediately following construction, the following BMPs would be implemented to avoid or minimize short-term minor adverse impacts for all construction activities.

- Construction activities would be restricted between the hours of 10:00 p.m. and 7:00 a.m. to minimize adverse noise impacts.
- Erosion- and sediment-control plans would be required for any project resulting in more than 5,000 ft² of land disturbance and would include sufficient information, drawings, computations, and notes to describe how potential soil erosion and offsite sedimentation associated with a land-disturbing activity would be minimized.
- A storm water management plan would be required for any project resulting in more than 5,000 ft² of land disturbance and would include supporting computations, drawings, and sufficient information describing the manner, location, and type of measures in which storm water runoff would be managed over the entire project. The post-construction storm water release rate would not exceed the rate when undeveloped. Control of storm water runoff could include construction of ponds, infiltration practices, filtration practices, vegetative practices, or runoff pretreatment practices.
- All construction equipment would be maintained according to manufacturer's specifications to ensure it is in proper working order. All fuels and other potentially hazardous materials would be contained and stored appropriately. The procedures identified in the NSA's SPCC Plan would be followed to quickly contain and clean up a spill.
- At least 40 percent of nonhazardous construction and demolition debris would be recycled to divert waste from being landfilled.
- All construction vehicles would be equipped with backing alarms, two-way radios, and slow-moving vehicle signs, when appropriate.
- Construction vehicle traffic would be routed and scheduled to minimize conflicts with other traffic.
- Construction staging areas would be sited to minimize traffic impacts.

North Utility Plant. The following BMPs are specific to the North Utility Plant. Additional measures are also included to reduce site-specific adverse impacts. No additional site-specific BMPs were identified for Site 2. Most of the following BMPs are intended to reduce potential long-term adverse impacts as a result of operations.

- Noise-producing equipment would be contained inside a facility constructed with noise-reducing material. Generator exhausts open to the exterior of the building would be equipped with industrial silencers.
- BACT/LAER review for each criteria pollutant and MACT review for regulated HAPs and designated categories would be conducted for new permitted stationary sources of emissions. Air dispersion modeling would be conducted if required by MDE. Procedures would be established for measuring and recording emissions and process rates, and meeting the NSPS and NESHAP requirements.

Site 1

- The stream that is northeast of Site 1 (outside of site boundaries) would be avoided to the maximum extent practicable.

Site 3

- The stream that is southwest of Site 3 (outside of site boundaries) would be avoided to the maximum extent practicable.

Site 4

- The stream that is southwest of Site 4 would be avoided to the maximum extent practicable. Because a road crossing would be required, total avoidance of the stream might not be possible.
- Wildlife would be allowed to move out of the path of construction equipment during site-clearing activities.

South Generator Facility. The following BMPs are specific to the South Generator Facility. Additional measures are also included to reduce site-specific adverse impacts for Site 6; no site-specific mitigation measures were identified for Sites 5 and 7. Most of the following mitigation measures and BMPs are intended to reduce potential long-term adverse impacts as a result of operations.

- Noise-producing equipment would be contained inside a facility constructed with noise-reducing material. Generator exhausts open to the exterior of the building would be equipped with industrial silencers.
- BACT/LAER review for each criteria pollutant and MACT review for regulated HAPs and designated categories would be conducted for new permitted stationary sources of emissions. Air dispersion modeling would be conducted if required by MDE. Procedures would be established for measuring and recording emissions and process rates, and meeting the NSPS and NESHAP requirements.

Site 6

- Wildlife would be allowed to move out of the path of construction equipment during site-clearing activities.

Central Boiler Plant. The following BMPs are specific to the Central Boiler Plant. No site-specific mitigation measures were identified. This BMP is intended to reduce potential long-term adverse impacts as a result of operations.

- Noise-producing equipment would be contained inside a facility.

Surface Lots for Replacement Parking. The following BMPs are specific to the construction of two surface lots at Sites 4 and 6.

- The stream that is southwest of Site 4 would be avoided to the maximum extent practicable. Because a road crossing would be required, total avoidance of the stream might not be possible.
- Wildlife would be allowed to move out of the path of construction equipment during site-clearing activities.

Parking Garage. The following BMPs are specific to the construction of a parking garage. Site-specific parking and transportation studies would be accomplished to ensure efficient and safe use of space, ingress and egress, and movement patterns. No site-specific mitigation measures were identified for Site 9.

Site 3

- The stream that is southwest of Site 3 (outside of site boundaries) would be avoided to the maximum extent practicable.

Site 10

- Care would be taken during the construction process to restrict activities and equipment to the developed areas within the site to minimize the potential for encountering UXO.

5.2 Mitigation Measures

North Utility Plant. The following mitigation measures are specific to the North Utility Plant. Additional measures are also included to reduce site-specific adverse impacts. Most of the following mitigation measures are intended to reduce potential long-term adverse impacts as a result of operations.

- Mitigation would be required to reduce NO_x emissions below the NNSR threshold. Use of SCR as an emissions control and voluntary federally enforceable limitations on the hours of operation (i.e., 100 hours) of the generators could reduce emissions enough to obtain a Minor NSR permit, but specific emissions controls and operating limitations would be decided during the permitting process.

Site 1

- The existing tree buffer between MFH and the NSA campus could be enhanced to ensure minimal visual intrusion.

Site 2

- The existing tree buffer between MFH and the NSA campus could be enhanced to ensure minimal visual intrusion.

Site 3

- The facility could be sited on the far northeastern end of the parcel to minimize impacts on National Vigilance Park. A tree buffer could be added to provide screening between National Vigilance Park and proposed development.

Site 4

- In accordance with Fort Meade's tree management policy and the Maryland Forest Conservation Act, a minimum of 20 percent of the forested area would be preserved.
- If the stream that is southwest of Site 4 cannot be avoided entirely, potential impacts would be minimized to the maximum extent practicable and any required mitigation would be implemented. A jurisdictional determination of wetlands and waters of the United States was requested from the USACE Baltimore District and would be obtained prior to implementing any actions that could impact the delineated areas. Site-specific review and study would be accomplished in accordance with CWA Sections 401 and 404 permitting requirements. The Section 404 permitting process would identify whether additional mitigation measures are required.

South Generator Facility. The following mitigation measures are specific to the South Generator Facility. Additional measures are also included to reduce site-specific adverse impacts for Site 6; no site-specific mitigation measures were identified for Sites 5 and 7. Most of the following mitigation measures and BMPs are intended to reduce potential long-term adverse impacts as a result of operations.

- Mitigation would be required to reduce NO_x emissions below the NNSR threshold. Use of SCR as an emissions control and voluntary federally enforceable limitations on the hours of operation (i.e., 100 hours) of the generators could reduce emissions enough to obtain a Minor NSR permit, but specific emissions controls and operating limitations would be decided during the permitting process.

Site 6

- In accordance with Fort Meade's tree management policy and the Maryland Forest Conservation Act, a minimum of 20 percent of the forested area would be preserved.

Central Boiler Plant. The following mitigation measure is specific to the Central Boiler Plant. No site-specific mitigation measures were identified. This mitigation measure is intended to reduce potential long-term adverse impacts as a result of operations.

- Mitigation would be required to reduce CO emissions below the PSD threshold and NO_x emissions below the NNSR threshold. Use of limited fuel throughput, low NO_x burners, FGR, and SCR could reduce emissions enough to obtain a Minor NSR permit, but specific emissions controls and operating limitations would be decided during the permitting process. Limiting the hours of operation and installation of oxidation catalysts could ultimately be incorporated into the design and permit process in lieu of or in addition to fuel limitations to meet permitting requirements.

Surface Lots for Replacement Parking. The following mitigation measures are specific to the construction of two surface lots at Sites 4 and 6.

- Low-impact development could include use of landscaped parking lot islands to reduce heat island effect and manage storm water.
- In accordance with Fort Meade's tree management policy and the Maryland Forest Conservation Act, a minimum of 20 percent of forested areas would be preserved.
- If the stream that is southwest of Site 4 cannot be avoided entirely, potential impacts would be minimized to the maximum extent practicable and any required mitigation would be implemented. A jurisdictional determination of wetlands and waters of the United States was requested from the USACE Baltimore District and would be obtained prior to implementing any actions that could impact the delineated areas. Site-specific review and study would be accomplished in accordance with CWA Sections 401 and 404 permitting requirements. The Section 404 permitting process would identify whether additional mitigation measures are required.

Parking Garage. The following mitigation measures are specific to the construction of a parking garage. Site-specific parking and transportation studies would be accomplished to ensure efficient and safe use of space, ingress and egress, and movement patterns. No site-specific mitigation measures were identified for Sites 9 and 10.

- Low-impact development could include use of landscaped parking lot islands to reduce heat island effect and manage storm water.

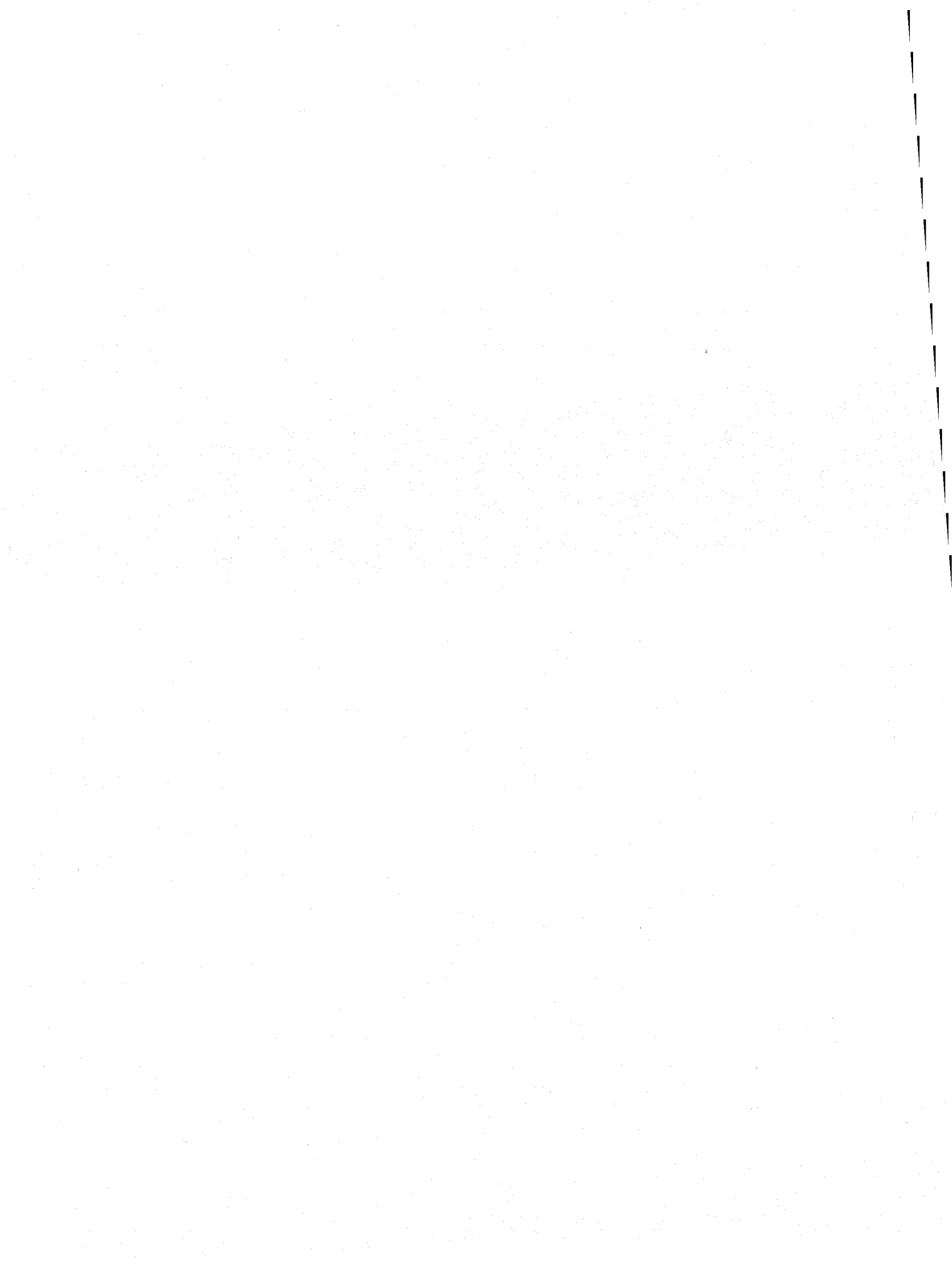
Site 3

- The garage could be sited on the far northeastern end of the parcel to minimize impacts on National Vigilance Park. A tree buffer could be added to provide screening between National Vigilance Park and proposed development.

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SECTION 6

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SECTION 7

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In addition to the references listed above, the following laws, regulations, EOs, and notices are cited and were used in preparation of the EIS:

- 42 U.S.C. §§ 4321–4347, National Environmental Policy Act of 1969, as amended
- 42 U.S.C. §§ 7401–7617, Air Quality Act of 1967, as amended
- 50 U.S.C. 401 et seq., National Security Act of 1947, as amended
- 7 CFR Part 658, *Farmland Protection Policy Act* (44 FR 64177, November 6, 1979, as amended)
- 32 CFR Part 188, the Department of Defense’s *Environmental Effects in the United States of DoD Actions*
- 32 CFR Part 651, the Department of the Army’s *Environmental Analysis of Army Actions; Final Rule* (67 FR 15290–15331, March 29, 2002)
- 36 CFR 60.4, *National Register of Historic Places Criteria for Evaluation* (46 FR 56187, November 16, 1981)
- 36 CFR Part 800, *Protection of Historic Properties* (65 FR 77725, December 12, 2000)
- 40 CFR Part 51, *Requirements for the Preparation Adoption, and Submittal of Implementation Plans: Subpart I—Review of New Sources and Modifications* (70 FR 39156, July 6, 2005)
- 40 CFR Part 52, *Approval and Promulgation of Implementation Plans* (37 FR 19807, Sept. 22, 1972, as amended)
- 40 CFR Part 60 Subpart Dc, *New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units constructed after June 9, 1989*
- 40 CFR Parts 60, 85 et al., *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines; Final Rule* (FR 39154–39185, July 11, 2006)
- 40 CFR Part 63, *National Emission Standards for Hazardous Air Pollutants for Source Categories* (59 FR 12430, March 16, 1994 as amended)
- 40 CFR Part 70, *State Operating Permit Programs* (57 FR 32295, July 21, 1992)
- 40 CFR 81.12, *National Capital Interstate Air Quality Control Region (District of Columbia, Maryland, and Virginia)* (36 FR 22421, November 25, 1971, as amended)
- 40 CFR 81.321, *Approval and Promulgation of Air Quality Implementation Plans; Maryland, Pennsylvania, Virginia, West Virginia; Redesignation of 8-Hour Ozone Nonattainment Areas to Attainment and Approval of the Areas’ Maintenance Plans and 2002 Base-Year Inventories; Correction* (72 FR 233, December 5, 2007)
- 40 CFR Part 93, Subpart B, *Determining Conformity of General Federal Actions to State or Federal Implementation Plans, December 2005* (62 FR 43801, Aug. 15, 1997)
- 49 CFR Part 171, *Research and Special Programs Administration, Department of Transportation* (62 FR 1215, January 8, 1997)

49 CFR Part 172, *Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements* (41 FR 15997, April 15, 1976, as amended)

49 CFR Part 173, *Shippers—General Requirements for Shipments and Packaging* (41 FR 16062, April 15, 1976, as amended)

40 CFR Part 265, *Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities* (45 FR 33232, May 19, 1980)

40 CFR Parts 1500–1508, the Council on Environmental Quality's *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (43 FR 55990, November 28, 1978)

EO 12191, *Federal Facility Ridesharing Program*, February 1, 1980

EO 12333, *United States Intelligence Activities*, December 4, 1981

EO 13150, *Federal Workforce Transportation*, April 21, 2000

EO 13221, *Energy Efficient Standby Power Devices*, July 31, 2001

EO 13355, *Strengthened Management of the Intelligence Community*, August 27, 2004

EO 13423, *Strengthening the Federal Environmental, Energy, and Transportation Management*, January 26, 2007

71 FR 39154–39187, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines; Final Rule*, July 11, 2006

71 FR 40420–40427, *PM_{2.5} De Minimis Emission Levels for General Conformity Applicability; Final Rule*, July 17, 2006

73 FR 172–173, *Intent to Prepare an Environmental Impact Statement for Power Upgrades Project Within the Fort Meade Complex, MD*, January 2, 2008

COMAR 26.02, the Maryland Department of the Environment's *Occupational, Industrial, and Residential Hazards*, June 30, 1988 as amended

COMAR 26.10, the Maryland Department of the Environment's *Oil Pollution and Tank Management*, January 6, 1989 as amended

COMAR 26.11, the Maryland Department of the Environment's *Air Quality*, January 6, 1989 as amended

COMAR 26.13, the Maryland Department of the Environment's *Disposal of Controlled Hazardous Substances*, January 6, 1989 as amended

COMAR 26.17, the Maryland Department of the Environment's *Water Quality*, January 6, 1989 as amended

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APPENDIX A

**APPLICABLE LAWS, REGULATIONS,
POLICIES, AND PLANNING CRITERIA**

Appendix A

Applicable Laws, Regulations, Policies, and Planning Criteria

When considering the affected environment, the various physical, biological, economic, and social environmental factors must be considered. In addition to the National Environmental Policy Act (NEPA), there are other environmental laws and Executive Orders (EOs) to be considered when preparing environmental analyses. These laws are summarized below.

Noise

The Noise Control Act of 1972 as amended by the Quiet Communities Act of 1978 establish the Federal policy for promoting an environment free from noise that jeopardizes human health and welfare. Funding associated with these laws was phased out beginning in 1982 under the conclusion that noise issues were best handled at the state and local levels. However, these laws have not been rescinded, and noise standards under these laws for transportation equipment, motor carriers, low-noise-emission products, and construction equipment remain in effect. Federal noise standards are enforced by the U.S. Environmental Protection Agency (USEPA) or another designated Federal agency, such as the Federal Aviation Administration for aviation noise, the Federal Railroad Administration for railroad and locomotive noise, or the Federal Highway Administration for interstate motor carrier noise.

Land Use

The goal of land use planning is to ensure compatible land uses in future community growth. Land use planning is accomplished at the local level through zoning. Land use guidelines established by the U.S. Department of Housing and Urban Development (HUD) and based on findings of the Federal Interagency Committee on Noise (FICON) are used to recommend acceptable levels of noise exposure for land use.

Air Quality

The Clean Air Act (CAA) of 1970, and Amendments of 1977 and 1990 recognize that increases in air pollution result in danger to public health and welfare. To protect and enhance the quality of the Nation's air resources, the CAA authorizes USEPA to set six National Ambient Air Quality Standards (NAAQS) which regulate carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter pollution emissions. The CAA seeks to reduce or eliminate the creation of pollutants at their source, and designates this responsibility to state and local governments. States are directed to utilize financial and technical assistance as well as leadership from the Federal government to develop implementation plans to achieve NAAQS. Geographic areas are officially designated by USEPA as being in attainment or nonattainment to pollutants in relation to their compliance with NAAQS. Geographic regions established for air quality planning purposes are designated as Air Quality Control Regions (AQCRs). Pollutant concentration levels are measured at designated monitoring stations within the AQCR. An area with insufficient monitoring data is designated as unclassifiable. Section 309 of the CAA authorizes USEPA to review and comment on impact statements prepared by other agencies.

An agency should consider what effect an action could have on NAAQS due to short-term increases in air pollution during construction as well as long-term increases resulting from changes in traffic patterns. For actions in attainment areas, a Federal agency might also be subject to USEPA's Prevention of Significant Deterioration (PSD) regulations. These regulations apply to new major stationary sources and modifications to such sources. Although few agency facilities will actually emit pollutants, increases in pollution can result from a change in traffic patterns or volume. Section 118 of the CAA waives Federal

immunity from complying with the CAA and states all Federal agencies will comply with all Federal- and state-approved requirements.

Water Resources

The Clean Water Act (CWA) of 1977 is an amendment to the Federal Water Pollution Control Act of 1972, is administered by USEPA, and sets the basic structure for regulating discharges of pollutants into U.S. waters. The CWA requires USEPA to establish water quality standards for specified contaminants in surface waters and forbids the discharge of pollutants from a point source into navigable waters without a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits are issued by USEPA or the appropriate state if it has assumed responsibility. Section 404 of the CWA establishes a Federal program to regulate the discharge of dredge and fill material into waters of the United States. Section 404 permits are issued by the U.S. Army Corps of Engineers (USACE). Waters of the United States include interstate and intrastate lakes, rivers, streams, and wetlands that are used for commerce, recreation, industry, sources of fish, and other purposes. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Each agency should consider the impact on water quality from actions such as the discharge of dredge or fill material into U.S. waters from construction, or the discharge of pollutants as a result of facility occupation.

Section 303(d) of the CWA requires states and USEPA to identify waters not meeting state water-quality standards and to develop Total Maximum Daily Loads (TMDLs). A TMDL is the maximum amount of a pollutant that a waterbody can receive and still be in compliance with state water-quality standards. After determining TMDLs for impaired waters, states are required to identify all point and nonpoint sources of pollution in a watershed that are contributing to the impairment and to develop an implementation plan that will allocate reductions to each source in order to meet the state standards. The TMDL program is currently the Nation's most comprehensive attempt to restore and improve water quality. The TMDL program does not explicitly require the protection of riparian areas. However, implementation of the TMDL typically calls for restoration of riparian areas as one of the required management measures for achieving reductions in nonpoint source pollutant loadings.

The Coastal Zone Management Act (CZMA) of 1972 declares a national policy to preserve, protect and develop, and, where possible, restore or enhance the resources of the Nation's coastal zone. The coastal zone refers to the coastal waters and the adjacent shorelines including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches, and includes the Great Lakes. The CZMA encourages states to exercise their full authority over the coastal zone, through the development of land and water use programs in cooperation with Federal and local governments. States may apply for grants to help develop and implement management programs to achieve wise use of the land and water resources of the coastal zone. Development projects affecting land or water use or natural resources of a coastal zone, must ensure the project is, to the maximum extent practicable, consistent with the state's coastal zone management program.

The Safe Drinking Water Act (SDWA) of 1974 establishes a Federal program to monitor and increase the safety of all commercially and publicly supplied drinking water. Congress amended the SDWA in 1986, mandating dramatic changes in nationwide safeguards for drinking water and establishing new Federal enforcement responsibility on the part of USEPA. The 1986 amendments to the SDWA require the USEPA to establish Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), and Best Available Technology (BAT) treatment techniques for organic, inorganic, radioactive, and microbial contaminants; and turbidity. MCLGs are maximum concentrations below which no negative human health effects are known to exist. The 1996 amendments set current Federal MCLs, MCLGs, and BATs for organic, inorganic, microbiological, and radiological contaminants in public drinking water supplies.

The Wild and Scenic Rivers Act of 1968 provides for a wild and scenic river system by recognizing the remarkable values of specific rivers of the Nation. These selected rivers and their immediate environment are preserved in a free-flowing condition, without dams or other construction. The policy not only protects the water quality of the selected rivers but also provides for the enjoyment of present and future generations. Any river in a free-flowing condition is eligible for inclusion, and can be authorized as such by an Act of Congress, an act of state legislature, or by the Secretary of the Interior upon the recommendation of the governor of the state(s) through which the river flows.

EO 11988, *Floodplain Management* (May 24, 1977) directs agencies to consider alternatives to avoid adverse effects and incompatible development in floodplains. An agency may locate a facility in a floodplain if the head of the agency finds there is no practicable alternative. If it is found there is no practicable alternative, the agency must minimize potential harm to the floodplain, and circulate a notice explaining why the action is to be located in the floodplain prior to taking action. Finally, new construction in a floodplain must apply accepted floodproofing and flood protection to include elevating structures above the base flood level rather than filling in land.

Biological Resources

The Endangered Species Act (ESA) of 1973 establishes a Federal program to conserve, protect, and restore threatened and endangered plants and animals and their habitats. The ESA specifically charges Federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All Federal agencies must ensure any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction of critical habitat for these species, unless the agency has been granted an exemption. The Secretary of the Interior, using the best available scientific data, determines which species are officially endangered or threatened, and the U.S. Fish and Wildlife Service (USFWS) maintains the list. A list of Federal endangered species can be obtained from the Endangered Species Division, USFWS (703-358-2171). States might also have their own lists of threatened and endangered species which can be obtained by calling the appropriate State Fish and Wildlife office. Some species, such as the bald eagle, also have laws specifically for their protection (e.g., Bald Eagle Protection Act).

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, implements treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless otherwise permitted by regulations, the MBTA makes it unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture, or kill; possess, offer to or sell, barter, purchase, deliver, or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. The MBTA also makes it unlawful to ship, transport, or carry from one state, territory, or district to another, or through a foreign country, any bird, part, nest, or egg that was captured, killed, taken, shipped, transported, or carried contrary to the laws from where it was obtained; and import from Canada any bird, part, nest, or egg obtained contrary to the laws of the province from which it was obtained. The U.S. Department of the Interior has authority to arrest, with or without a warrant, a person violating the MBTA.

EO 11514, *Protection and Enhancement of Environmental Quality* (March 5, 1970) states that the President, with assistance from the Council on Environmental Quality (CEQ), will lead a national effort to provide leadership in protecting and enhancing the environment for the purpose of sustaining and enriching human life. Federal agencies are directed to meet national environmental goals through their policies, programs, and plans. Agencies should also continually monitor and evaluate their activities to protect and enhance the quality of the environment. Consistent with NEPA, agencies are directed to share information about existing or potential environmental problems with all interested parties, including the public, in order to obtain their views.

EO 11990, *Protection of Wetlands* (May 24, 1977) directs agencies to consider alternatives to avoid adverse effects and incompatible development in wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland. Agencies should use economic and environmental data, agency mission statements, and any other pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands.

EO 13186, *Conservation of Migratory Birds* (January 10, 2001) creates a more comprehensive strategy for the conservation of migratory birds by the Federal government. EO 13186 provides a specific framework for the Federal government's compliance with its treaty obligations to Canada, Mexico, Russia, and Japan. EO 13186 provides broad guidelines on conservation responsibilities and requires the development of more detailed guidance in a Memorandum of Understanding (MOU). EO 13186 will be coordinated and implemented by the USFWS. The MOU will outline how Federal agencies will promote conservation of migratory birds. EO 13186 requires the support of various conservation planning efforts already in progress; incorporation of bird conservation considerations into agency planning, including NEPA analyses; and reporting annually on the level of take of migratory birds.

Cultural Resources

The American Indian Religious Freedom Act of 1978 and Amendments of 1994 recognize that freedom of religion for all people is an inherent right, and traditional American Indian religions are an indispensable and irreplaceable part of Indian life. It also recognized the lack of Federal policy on this issue and made it the policy of the United States to protect and preserve the inherent right of religious freedom for Native Americans. The 1994 Amendments provide clear legal protection for the use of peyote cactus as a religious sacrament. Federal agencies are responsible for evaluating their actions and policies to determine if changes should be made to protect and preserve the religious cultural rights and practices of Native Americans. These evaluations must be made in consultation with native traditional religious leaders.

The Archeological Resource Protection Act (ARPA) of 1979 protects archeological resources on public and American Indian lands. It provides felony-level penalties for the unauthorized excavation, removal, damage, alteration, or defacement of any archeological resource, defined as material remains of past human life or activities which are at least 100 years old. Before archeological resources are excavated or removed from public lands, the Federal land manager must issue a permit detailing the time, scope, location, and specific purpose of the proposed work. ARPA also fosters the exchange of information about archeological resources between governmental agencies, the professional archeological community, and private individuals. ARPA is implemented by regulations found in 43 CFR Part 7.

The National Historic Preservation Act (NHPA) of 1966 sets forth national policy to identify and preserve properties of state, local, and national significance. The NHPA establishes the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officers (SHPOs), and the National Register of Historic Places (NRHP). ACHP advises the President, Congress, and Federal agencies on historic preservation issues. Section 106 of the NHPA directs Federal agencies to take into account effects of their undertakings (actions and authorizations) on properties included in or eligible for the NRHP. Section 110 sets inventory, nomination, protection, and preservation responsibilities for federally owned cultural properties. Section 106 of the act is implemented by regulations of the ACHP, 36 CFR Part 800. Agencies should coordinate studies and documents prepared under Section 106 with NEPA where appropriate. However, NEPA and NHPA are separate statutes and compliance with one does not constitute compliance with the other. For example, actions which qualify for a categorical exclusion under NEPA might still require Section 106 review under NHPA. It is the responsibility of the agency

official to identify properties in the area of potential effects, and whether they are included or eligible for inclusion in the NRHP. Section 110 of the NHPA requires Federal agencies to identify, evaluate, and nominate historic property under agency control to the NRHP.

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 establishes rights of American Indian tribes to claim ownership of certain “cultural items,” defined as Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, held or controlled by Federal agencies. Cultural items discovered on Federal or tribal lands are, in order of primacy, the property of lineal descendants, if these can be determined, and then the tribe owning the land where the items were discovered or the tribe with the closest cultural affiliation with the items. Discoveries of cultural items on Federal or tribal land must be reported to the appropriate American Indian tribe and the Federal agency with jurisdiction over the land. If the discovery is made as a result of a land use, activity in the area must stop and the items must be protected pending the outcome of consultation with the affiliated tribe.

EO 11593, *Protection and Enhancement of the Cultural Environment* (May 13, 1971) directs the Federal government to provide leadership in the preservation, restoration, and maintenance of the historic and cultural environment. Federal agencies are required to locate and evaluate all Federal sites under their jurisdiction or control which might qualify for listing on the NRHP. Agencies must allow the ACHP to comment on the alteration, demolition, sale, or transfer of property which is likely to meet the criteria for listing as determined by the Secretary of the Interior in consultation with the SHPO. Agencies must also initiate procedures to maintain federally owned sites listed on the NRHP.

EO 13007, *Indian Sacred Sites* (May 24, 1996) provides that agencies managing Federal lands, to the extent practicable, permitted by law, and not inconsistent with agency functions, shall accommodate American Indian religious practitioners’ access to and ceremonial use of American Indian sacred sites, shall avoid adversely affecting the physical integrity of such sites, and shall maintain the confidentiality of such sites. Federal agencies are responsible for informing tribes of proposed actions that could restrict future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites.

EO 13287, *Preserve America* (March 3, 2003) orders Federal agencies to take a leadership role in protection, enhancement, and contemporary use of historic properties owned by the Federal government, and promote intergovernmental cooperation and partnerships for preservation and use of historic properties. EO 13287 established new accountability for agencies with respect to inventories and stewardship.

Socioeconomics and Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994) directs Federal agencies to make achieving environmental justice part of their mission. Agencies must identify and address the adverse human health or environmental effects that its activities have on minority and low-income populations, and develop agencywide environmental justice strategies. The strategy must list “programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations, ensure greater public participation, improve research and data collection relating to the health of and environment of minority populations and low-income populations, and identify differential patterns of consumption of natural resources among minority populations and low-income populations.” A copy of the strategy and progress reports must be provided to the Federal Working Group on Environmental Justice. Responsibility for compliance with EO 12898 is with each Federal agency.

Hazardous Materials and Waste

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 authorizes USEPA to respond to spills and other releases of hazardous substances to the environment, and authorizes the National Oil and Hazardous Substances Pollution Contingency Plan. CERCLA also provides a Federal "Superfund" to respond to emergencies immediately. Although the "Superfund" provides funds for cleanup of sites where potentially responsible parties cannot be identified, USEPA is authorized to recover funds through damages collected from responsible parties. This funding process places the economic burden for cleanup on polluters.

The Pollution Prevention Act (PPA) of 1990 encourages manufacturers to avoid the generation of pollution by modifying equipment and processes, redesigning products, substituting raw materials, and making improvements in management techniques, training, and inventory control. Consistent with pollution prevention principles, EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (January 24, 2007 [revoking EO 13148]), sets a goal for all Federal agencies that promotes environmental practices, including acquisition of biobased, environmentally preferable, energy-efficient, water-efficient, and recycled-content products, and use of paper of at least 30 percent post-consumer fiber content. In addition, EO 13423 sets a goal that requires Federal agencies to ensure that they reduce the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of, increase diversion of solid waste as appropriate, and maintain cost effective waste prevention and recycling programs in their facilities. Additionally, in *Federal Register* Volume 58 Number 18 (January 29, 1993), CEQ provides guidance to Federal agencies on how to "incorporate pollution prevention principles, techniques, and mechanisms into their planning and decision making processes and to evaluate and report those efforts, as appropriate, in documents pursuant to NEPA."

The Resource Conservation and Recovery Act (RCRA) of 1976 is an amendment to the Solid Waste Disposal Act. RCRA authorizes USEPA to provide for "cradle-to-grave" management of hazardous waste and sets a framework for the management of nonhazardous municipal solid waste. Under RCRA, hazardous waste is controlled from generation to disposal through tracking and permitting systems, and restrictions and controls on the placement of waste on or into the land. Under RCRA, a waste is defined as hazardous if it is ignitable, corrosive, reactive, toxic, or listed by USEPA as being hazardous. With the Hazardous and Solid Waste Amendments (HSWA) of 1984, Congress targeted stricter standards for waste disposal and encouraged pollution prevention by prohibiting the land disposal of particular wastes. The HSWA amendments strengthen control of both hazardous and nonhazardous waste and emphasize the prevention of pollution of groundwater.

The Superfund Amendments and Reauthorization Act (SARA) of 1986 mandates strong clean-up standards and authorizes USEPA to use a variety of incentives to encourage settlements. Title III of SARA authorizes the Emergency Planning and Community Right to Know Act (EPCRA), which requires facility operators with "hazardous substances" or "extremely hazardous substances" to prepare comprehensive emergency plans and to report accidental releases. If a Federal agency acquires a contaminated site, it can be held liable for cleanup as the property owner/operator. A Federal agency can also incur liability if it leases a property, as the courts have found lessees liable as "owners." However, if the agency exercises due diligence by conducting a Phase I Environmental Site Assessment, it can claim the "innocent purchaser" defense under CERCLA. According to Title 42 U.S. Code (U.S.C.) 9601(35), the current owner/operator must show it undertook "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" before buying the property to use this defense.

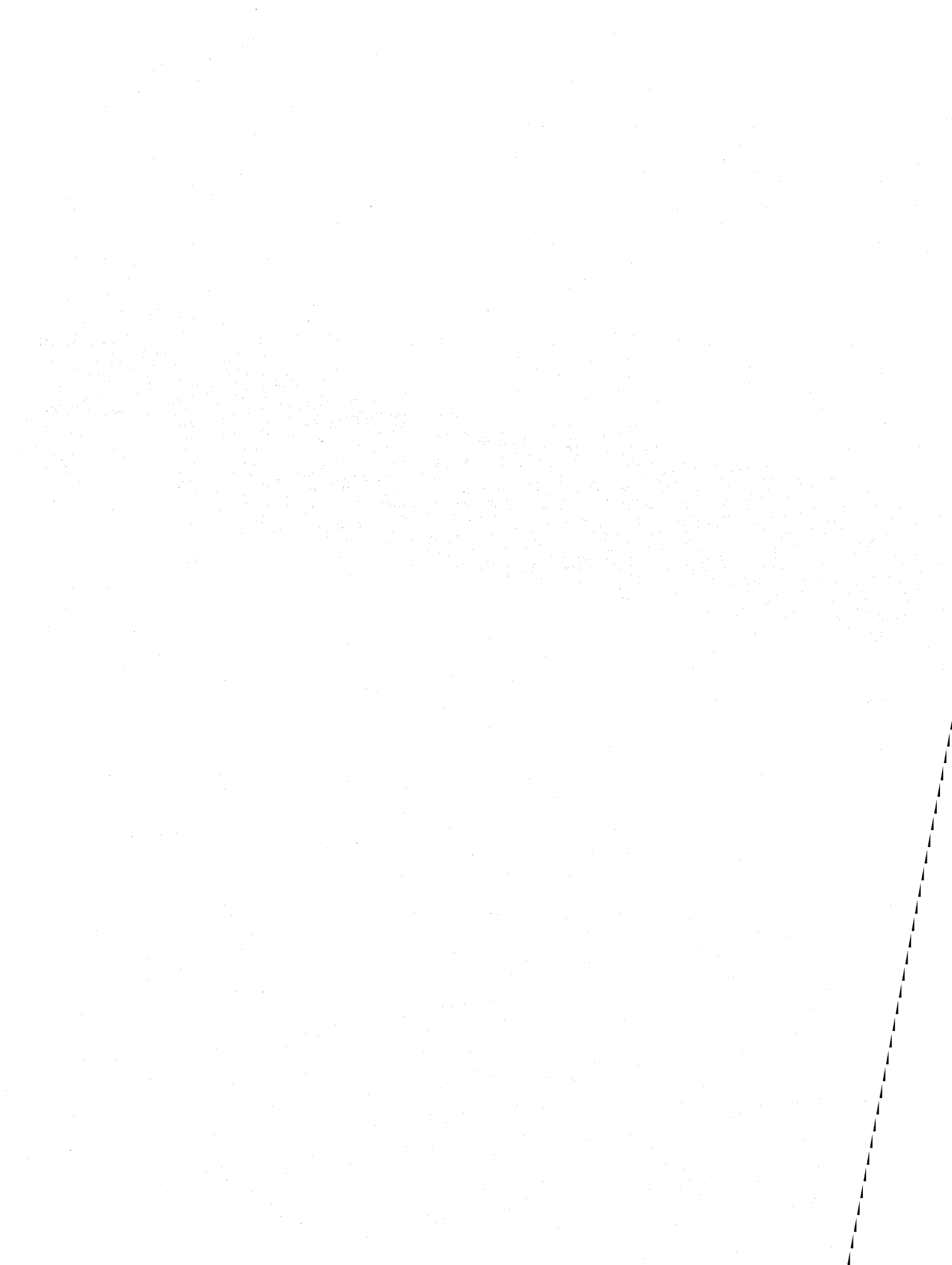
The Toxic Substance Control Act (TSCA) of 1976 consists of four titles. Title I established requirements and authorities to identify and control toxic chemical hazards to human health and the environment.

TSCA authorized USEPA to gather information on chemical risks, require companies to test chemicals for toxic effects, and regulate chemicals with unreasonable risk. TSCA also singled out polychlorinated biphenyls (PCBs) for regulation, and, as a result, PCBs are being phased out. PCBs are persistent when released into the environment and accumulate in the tissues of living organisms. They have been shown to cause adverse health effects on laboratory animals and can cause adverse health effects in humans. TSCA and its regulations govern the manufacture, processing, distribution, use, marking, storage, disposal, clean-up, and release reporting requirements for numerous chemicals like PCBs. TSCA Title II provides statutory framework for "Asbestos Hazard Emergency Response," which applies only to schools. TSCA Title III, "Indoor Radon Abatement," states indoor air in buildings of the United States should be as free of radon as the outside ambient air. Federal agencies are required to conduct studies on the extent of radon contamination in buildings they own. TSCA Title IV, "Lead Exposure Reduction," directs Federal agencies to "conduct a comprehensive program to promote safe, effective, and affordable monitoring, detection, and abatement of lead-based paint and other lead exposure hazards." Further, any Federal agency having jurisdiction over a property or facility must comply with all Federal, state, interstate, and local requirements concerning lead-based paint.

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APPENDIX B

PUBLIC SCOPING



ACTION: Notice of intent; notice of public meeting; request for comments.

SUMMARY: The National Security Agency (NSA) announces that it intends to prepare an Environmental Impact Statement (EIS) as part of the environmental planning process for power and utility upgrades at Fort George G. Meade, Maryland (hereafter referred to as Fort Meade). The project was initiated to address aging infrastructure reliability issues as well as meet mission growth requirements. The Proposed Action includes the construction of generator facilities, two electrical substations, a boiler plant and chiller plant, as well as ancillary facilities and parking. The proposed utility upgrades would allow for 100 percent self-contained redundancy, should off site power sources fail.

Publication of this notice begins a scoping process that identifies and determines the scope of environmental issues to be addressed in the EIS. This notice requests public participation in the scoping process and provides information on how to participate.

DATES: There will be an open house at 4 p.m. followed by a scoping meeting from 5 p.m. to 7 p.m. on February 20, 2007, at the Ramada Laurel, 3400 Fort Meade Road, Laurel, Maryland 20724, which is near Fort Meade. Comments or questions regarding this EIS should be submitted by 30 days from the date of publication in the **Federal Register** to ensure sufficient time to consider public input in the preparation of the Draft EIS.

ADDRESSES: The open house and scoping meeting will be held at the Ramada Laurel, 3400 Fort Meade Road, Laurel, Maryland 20724. Oral and written comments will be accepted at the scoping meeting. Written comments can also be mailed to Mr. Jeffrey Williams, Environmental and Safety Services, National Security Agency, 9800 Savage Road Suite 6404, Fort Meade, MD 20755-6248 or submitted by e-mail to Mr. Williams at jdwill2@nsa.gov.

FOR FURTHER INFORMATION CONTACT: Mr. Jeffrey Williams at (301) 688-2970, or e-mail jdwill2@nsa.gov.

SUPPLEMENTARY INFORMATION: *Background:* The National Security Agency (NSA) is a tenant DOD agency on Fort Meade. NSA is a high-technology organization that is on the frontiers of communications and data processing. In order to meet mission growth requirements as well as address aging infrastructure reliability information, power upgrades are needed at the NSA campus on Fort Meade.

Proposed Action and Alternatives: The Power Upgrades Project, an NSA investment and major systems acquisition, was initiated to meet the growth requirements of NSA as well as address aging infrastructure reliability issues. The Proposed Action would consist of construction of the following:

- 50 mega volt amp (MVA) North Electrical Substation with 15 kilo volt (kV) switchgears, a 50 mega watt (MW) generator plant with pollution control system and oil storage facilities.
- South Generator facility consisting of 36 MW generator plant.
- Replacement of four 85-90 million British Thermal Units per hour (MMBTU/hr) boilers, the boiler building, and two 206,600 aboveground oil storage tanks.
- Addition of a central chiller plant of 20,000 tons of chilled water capacity with a dedicated substation and emergency generator capacity.
- Replacement surface parking and parking garages.
- Associated ancillary equipment and utility connections.

Alternatives identified include up to five locations for the proposed construction of the North and East substation facilities on the NSA campus, two options for power generation, and various pollution control systems. These alternatives will be developed during preparation of the Draft EIS as a result of public and agency input and environmental analyses of the activities. The No Action Alternative (not undertaking the Power Upgrade Project) will also be analyzed in detail.

This notice of intent is required by 40 CFR 1508.22, and briefly describes the proposed action and possible alternatives and our proposed scoping process. The EIS will comply with the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality regulations in 40 CFR parts 1500-1508, and NSA Draft NEPA implementation procedures.

Significant Issues: Environmental issues to be analyzed in the EIS will include potential impacts on air quality, natural resources, water use, solid waste, cultural resources, and cumulative impacts from increased burdens to the installation and neighboring community based on projected growth.

Scoping Process: Public scoping is an early and open process for identifying and determining the scope of issues to be addressed in the EIS. Scoping begins with this notice, continues through the public comment period (see **DATES**), and ends when the DOD has completed the following actions:

DEPARTMENT OF DEFENSE

Office of the Secretary

Intent to Prepare an Environmental Impact Statement for Power Upgrades Project Within the Fort Meade Complex, MD

AGENCY: Department of Defense; National Security Agency/Central Security Service.

- Invites the participation of Federal, State, and local agencies, any affected Indian tribe and other interested persons.
- Determines the actions, alternatives, and impacts described in 40 CFR 1508.25.
- Identifies and eliminates from detailed study those issues that are not significant or that have been covered elsewhere.
- Indicates any related environmental assessments or environmental impact statements that are not part of the EIS.
- Other relevant environmental review and consultation requirements.
- Indicates the relationship between timing of the environmental review and other aspects of the proposed program.
- At its discretion, exercises the options provided in 40 CFR 1501.7(b).

Once the scoping process is complete, the DoD will prepare a Draft EIS, and will publish a **Federal Register** notice announcing its public availability. If you want that notice to be sent to you, please contact the DoD Project Office point of contact identified in **FOR FURTHER INFORMATION CONTACT**. You will have an opportunity to review and comment on the Draft EIS. Additionally, the DoD anticipates holding a public meeting after publication of the DEIS in the vicinity of Fort Meade, Maryland to present the Draft EIS and receive public comments regarding the document. The DoD will consider all comments received and then prepare the Final EIS. As with the Draft EIS, the DoD will announce the availability of the Final EIS and once again give you an opportunity for review and comment.

December 21, 2007.

L.M. Bynum,

*Alternate OSD Federal Register Liaison
Officer, DoD.*

IFR Doc. E7-25451 Filed 12-31-07; 8:45 and
BILLING CODE 5001-06-P

The notice below was published on page 9B in the *Baltimore Sun* on February 6, 2008.

**Notice of Intent and Request for Comments:
Environmental Impact Statement (EIS)
for the Utilities Upgrade Project at Fort Meade**

The Department of Defense (DOD) announces its intent to prepare an EIS as part of the environmental planning process for power and utility upgrades at Fort Meade, Maryland. The project was initiated to address aging infrastructure issues as well as modernization. The proposed Action includes the construction of a generator facility, a utility plant, a boiler plant, and chiller plant, as well as ancillary facilities on the campus of Fort Meade. The proposed upgrades would allow for back-up power generation. The EIS will consider alternative project locations, alternative electrical generation systems, alternative pollution control systems, and the No Action Alternative.

The DOD is in the scoping stage for preparation of a Draft EIS and invites the public to comment on the alternatives considered and the scope of the environmental analysis. On February 20, 2008, the DOD will hold an open house from 4:00 to 5:00 p.m. and a scoping meeting from 5:00 to 7:00 p.m. at the Ramada Laurel, 3400 Fort Meade Road, Laurel, MD 20724. Oral and written comments will be received at the scoping meeting and considered in preparation of the Draft EIS. You can also submit written comments addressed to "Utilities Upgrades EIS," c/o e2m, 2751 Prosperity Avenue, Suite 200, Fairfax, VA 22031. Written comments are requested by March 3, 2008, to ensure sufficient time to consider public input in preparation of the Draft EIS. You may also call (301) 576-3391, or email UtilityEIS@e2m.net.

Your comments on this proposed action are requested. Written and oral comments may be published in the EIS. Any personal information provided will be used only to identify your desire to make a statement during the public comment portions of the EIS process or to fulfill requests for copies of the EIS or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the Draft or Final EIS. However, only the names of private citizens will appear in the EIS; personal addresses and phone numbers will not be published.

The notice below was published on page A12 in the *Washington Post* on February 7, 2008.

**Notice of Intent and Request for Comments:
Environmental Impact Statement (EIS)
for the Utilities Upgrade Project at Fort Meade**

The Department of Defense (DOD) announces its intent to prepare an EIS as part of the environmental planning process for power and utility upgrades at Fort Meade, Maryland. The project was initiated to address aging infrastructure issues as well as modernization. The proposed Action includes the construction of a generator facility, a utility plant, a boiler plant, and chiller plant, as well as ancillary facilities on the campus of Fort Meade. The proposed upgrades would allow for back-up power generation. The EIS will consider alternative project locations, alternative electrical generation systems, alternative pollution control systems, and the No Action Alternative.

The DOD is in the scoping stage for preparation of a Draft EIS and invites the public to comment on the alternatives considered and the scope of the environmental analysis. On February 20, 2008, the DOD will hold an open house from 4:00 to 5:00 p.m. and a scoping meeting from 5:00 to 7:00 p.m. at the Ramada Laurel, 3400 Fort Meade Road, Laurel, MD 20724. Oral and written comments will be received at the scoping meeting and considered in preparation of the Draft EIS. You can also submit written comments addressed to "Utilities Upgrades EIS," c/o e2m, 2751 Prosperity Avenue, Suite 200, Fairfax, VA 22031. Written comments are requested by March 3, 2008, to ensure sufficient time to consider public input in preparation of the Draft EIS. You may also call (301) 576-3391, or email UtilityEIS@e2m.net.

Your comments on this proposed action are requested. Written and oral comments may be published in the EIS. Any personal information provided will be used only to identify your desire to make a statement during the public comment portions of the EIS process or to fulfill requests for copies of the EIS or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the Draft or Final EIS. However, only the names of private citizens will appear in the EIS; personal addresses and phone numbers will not be published.

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Maryland Department of Planning

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

Richard Eberhart Hall
Secretary
Matthew J. Power
Deputy Secretary

February 13, 2008

Ms. Mary Young
Project Manager
e3M
Suite 200
2751 Prosperity Avenue
Fairfax, VA 22031

STATE CLEARINGHOUSE REVIEW PROCESS

State Application Identifier: MD20080212-0094

Reviewer Comments Due By: February 29, 2008

Project Description: Scoping prior to preparation of Environmental Impact Statement (DEIS); Utilities Upgrade Project at Fort Meade; proposed power and utility upgrades; construction of ancillary facilities; open house 2/20/2008

Project Location: County of Anne Arundel

Clearinghouse Contact: Bob Rosenbush

Dear Ms. Young:

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

The following agencies and/or jurisdictions have been forwarded a copy of your project for their review: the Maryland Departments of Natural Resources, the Environment, State Police, Business and Economic Development, Transportation; the Maryland Energy Administration; the Maryland Emergency Management Agency, the County of Anne Arundel; the Maryland Department of Planning, including the Maryland Historical Trust. They have been requested to contact your agency directly by February 29, 2008 with any comments or concerns and to provide a copy of those comments to the State Clearinghouse for Intergovernmental Assistance. Please be assured that after February 29, 2008 all MIRC requirements will have been met in accordance with Code of Maryland Regulations (COMAR 14.24.04). The project has been assigned a unique State Application Identifier that should be used on all documents and correspondence.

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

Sincerely,

[Handwritten signature of Linda C. Janey]

Linda C. Janey, J.D., Assistant Secretary
for Clearinghouse and Communications

LC:BR

Enclosures

cc: Beth Cole - MHT*
Roland Limpert - DNR*
Ruth Mascari - MEMA*
Joane Mueller - MDE*

Gloria Minnick - MDA*
William Ebare - MDSP*
Tammy Edwards - DBED*
Cindy Johnson - MDOT*

Malcolm Woolf - MEA*
John Dodds - ANAR*
Mike Paone - MFLS*

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301 West Preston Street • Suite 1101 • Baltimore, Maryland 21201-2305
Telephone: 410.767.4500 • Fax: 410.767.4480 • Toll Free: 1.877.767.6272 • TTY Users: Maryland Relay
Internet: www.MDP.state.md.us

From: Faux, Debra CIV USA IMCOM [mailto:debbie.faux@us.army.mil]

Sent: Friday, February 15, 2008 4:33 PM

To: Williams, Jeffrey

Subject: EIS Utility Upgrade

Mr. Williams

I represent the government side of the housing partnership with Picerne Military Housing on Fort Meade. I am interested in learning if any of the projected activities would include land in the Picerne leasehold.

Thank you

Debbie Faux

DPW RCI/HSO/UPH

Fort Meade

301-677-4790

From: Stephen_Syphax@nps.gov [mailto:Stephen_Syphax@nps.gov]
Sent: Thursday, February 21, 2008 10:54 AM
To: Williams, Jeffrey
Cc: Gayle_Hazelwood@nps.gov
Subject: NSA's Notice of Intent

Dear Mr. Williams,

I just learned about NSA's Notice of Intent and the scoping meeting to gather information related to the preparation of an EIS for power and utility upgrades at Fort Meade. Unfortunately, I don't believe anyone from the National Park Service was able to attend last evening's (February 20) meeting. Therefore, I'm contacting you in this, somewhat informal, manner to quickly share with you concerns the National Park Service typically has with respect to new development projects along the historic Baltimore-Washington Parkway for your information during this important scoping process, and to find out how we might learn additional detail on the project (proposed locations and impacted areas).

Legislation establishing the B-W Parkway supports its national significance as part of the park and parkway system of the capital, and formal entryway, connecting Fort George G. Meade and other federal facilities to Washington, D.C. Listed on the National Register of Historic Places, the 1990 nomination recognizes the "flanking buffer of natural forests," and "generally forested, gentle hills" and other "outstanding scenic features" of the parkway. That nomination also identifies numerous structures including bridges and culverts with decorated headwalls, as contributing elements to the parkway's historical significance.

In managing the Baltimore-Washington Parkway in accordance with the National Park Service mission and with the site's legislation, and in protecting historic parkway resources (including views), we are concerned about any new developments that would require use of park land, or that would adversely impact forest and buffer areas along the parkway. Visual intrusions created by new building or other facilities visible through or above the forested parkway buffers, may also cause serious concerns. Additionally, indirect impacts such as those created by pollution from abutting properties and inadequately controlled or failed stormwater run-off management on adjacent properties, are major concerns because of the resulting damage to park streams and habitat.

I appreciate the opportunity to share these general concerns with you and I ask that you forward any available printed information that would help us to better understand the overall work proposed. Feel free to contact me directly with any follow-up questions or comments.

Thank you,
Stephen W. Syphax
Chief, Resource Management Division
National Capital Parks-East
National Park Service
1900 Anacostia Drive, S.E.
Washington, D.C. 20020

Tel: 202-690-5160
Fax: 202-690-0862
Email: stephen_syphax@nps.gov

From: Craig Hanson [mailto:CHanson@AlbanCat.com]

Sent: Tue 2/26/2008 11:07 AM

To: EIS Utility EIS

Cc: Gary Deahl; Gary Farmer

Subject: Ft Meade EIS Utility Upgrade

We attended your meeting last Thursday at the Ramada and that is how we received your name

Let us first start by introducing ourselves to you real quick

We are the local Caterpillar Dealer here in the Baltimore-Washington area and our group is responsible for the Design, Application and Sales, for Diesel and Natural gas generator sets, UPS's, SCR's and other Power Quality equipment (The Total Caterpillar Solution)

What we would like to offer you is our engineering assistance, technical data and our expertise etc. in the preparation of the EIS on the Caterpillar Generator sets for this site.

The one item that we are writing in the specifications is as follows:

"The engine shall be diesel fueled, four (4) cycle, water-cooled, while operating with nominal speed not exceeding 1800 RPM. The engine will utilize in-cylinder combustion technology, as required, to meet applicable EPA non-road mobile regulations and/or the EPA NSPS rule for stationary reciprocating compression ignition engines. Additionally, the engine shall comply with the State Emission regulations at the time of installation/commissioning. Actual engine emissions values must be in compliance with applicable EPA emissions standards per ISO 8178 – D2 Emissions Cycle at specified kW / bHP rating. Utilization of the "Transition Program for Equipment Manufacturers" (also known as "Flex Credits") to achieve EPA certification is not acceptable. The in-cylinder engine technology must not permit unfiltered exhaust gas to be introduced into the combustion cylinder. Emissions requirements / certifications of this package: EPA T2."

The last item is SCR's and we can offer to you technical information on this subject as well where they reduce NOx by 95%.

If we can be of any service to you please give us a call

Thank you

Craig S. Hanson, Sales Engineer

Mailing Address:

Alban Engine Power Systems

6387 Old Washington Road

Elkridge, Maryland 21075

Office phone 800-443-9813 or 410-796-8000

(phone after hours & direct) 410-579-4405 or 800-443-9813 x 4405

(fax) 410-379-0911

(Mobil cell number) 410-227-6593

email: <mailto:CHanson@albancat.com>

From: Trulick, Jeff NAB02 [mailto:JEFF.TRULICK@usace.army.mil]

Sent: Wednesday, March 05, 2008 2:24 PM

To: Williams, Jeffrey

Cc: Hobbs, Vance G NAB02

Subject: Ft Meade Utilities upgrade

Hi Jeff,

I am writing this in response to your letter dated Feb 8, 2008 regarding the proposed utility upgrades at Ft Meade. At this time, Planning Division of the District has no comment on the proposal. I will coordinate this with our Regulatory Branch but as we discussed, it is unlikely due to the nature of your project that you will need any Corps Permits. I would anticipate hearing from the permit POC for the installation shortly with any comments they may have for you.

I have copied the permits Chief for that area of Maryland for his awareness.

Jeffrey L. Trulick
Economic and Environmental Team Leader
Planning Division
U.S. Army Corps of Engineers
Baltimore District
(410)962-6141

Baltimore Metropolitan Council



2700 Lighthouse Point East, Suite 310
Baltimore, MD 21224-4774

Telephone 410-732-0500
Fax 410-732-8248
www.baltometro.org

Anne Arundel County
Baltimore City
Baltimore County
Carroll County
Harford County
Howard County

February 25, 2008

Mr. Jeffrey Williams
Environmental & Safety Services
National Security Agency
9800 Savage Road, Suite 6404
Fort Meade, MD 20755-6248

Re: Proposed Utilities Upgrade Project

Dear Mr. Williams:

Thank you for the opportunity to review and comment on the referenced project.

From our perspective as a regional planning organization, we take no exception and have no comment relative to the purpose or scope of the project. We trust that the EIS will adequately identify and address potential environmental issues and expect that the Maryland Department of the Environment (MDE) will provide comment and expertise on the decommissioning and replacement of fuel storage tanks and stormwater management issues relative to any new or expanded paved areas.

Sincerely,

Larry W. Klimovitz
Executive Director



Maryland Department of Planning

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

Richard Eberhart Hall
Secretary
Matthew J. Power
Deputy Secretary

March 17, 2008

Ms. Mary Young
Project Manager
e2M
Suite 200
2751 Prosperity Avenue
Fairfax, VA 22031

STATE CLEARINGHOUSE REVIEW - ADDITIONAL REVIEWER COMMENTS RECEIVED

State Application Identifier: MD20080212-0094

Project Description: Scoping prior to preparation of Draft Environmental Impact Statement (DEIS): Utilities Upgrade Project at Fort Meade: proposed power and utility upgrades; construction of ancillary facilities: open house 2/20/2008

Project Location: Anne Arundel County

Clearinghouse Contact: Bob Rosenbush

Dear Ms. Young:

We are forwarding the following comments made by the Maryland Departments of Agriculture, Natural Resources, and this Department including the Maryland Historical Trust regarding the referenced project for your information.

The Maryland Department of Agriculture stated that "there are no Maryland Agricultural Land Preservation Foundation easements near Fort Meade."

The Maryland Department of Natural Resources commented that "if the proposed electrical generation system will be connected to the power grid, the Applicant will need to obtain a Certificate of Public Convenience and Necessity from the Public Service Commission."

The Maryland Historical Trust requested the following materials in order to facilitate their review of this project. The Maryland Historical Trust seeks to review: a map; drawings and/or a written scope of work; and photographs. See the enclosed letter.

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

Sincerely,

Linda C. Janey, J.D., Assistant Secretary
for Clearinghouse and Communications

LCJ:BR

Enclosure (Comments Received)

cc: Beth Cole - MHT
Roland Limpert - DNR
Donald Eveleth - PSC
Gloria Minnick - MDA
Jeffrey Williams - NSA

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301 West Preston Street • Suite 1101 • Baltimore, Maryland 21201-2305
Telephone: 410.767.4500 • Fax: 410.767.4480 • Toll Free: 1.877.767.6272 • TTY Users: Maryland Relay
Internet: www.MDP.state.md.us



Maryland Department of Planning
Maryland Historical Trust

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

Richard Eberhart Hall
Secretary
Matthew J. Power
Deputy Secretary

MD 2008 0212-0094

February 25, 2008

Mr. Jeffrey Williams
Environmental and Safety Services
National Security Agency
9800 Savage Road, Suite 6404
Fort Meade, MD 20755-6248

Re: MHT Review of Proposed Utilities Upgrade Project, Fort George G. Meade, Anne Arundel County,
Maryland

Dear Mr. Williams:

On February 14, 2008, the Maryland Historical Trust (MHT) received a submittal announcing the intent of the National Security Agency (NSA) to prepare an Environmental Impact Statement (EIS) for power and utility upgrades at Fort George G. Meade, Maryland. We will be reviewing the proposed undertaking with respect to potential effects on historic properties in accordance with Section 106 of the National Historic Preservation Act and would like to offer the following preliminary comments.

As noted in Fort Meade's *Integrated Cultural Resources Management Plan* (2001), several significant architectural resources and archeological sites have been identified within the boundaries of the installation. We are therefore requesting that we be provided with the materials listed below so that we may continue our review of the proposed undertaking.

- A map illustrating the precise boundaries of the project area, including the locations of the proposed generator facilities, electrical substations, boiler plant, chiller plant, ancillary facilities, and parking areas.
- Drawings and/or a written scope of work illustrating any plans to construct, demolish, or remodel buildings or other structures.
- Photographs (print or digital) of the project sites, including images of all buildings and structures that may be affected by the project.

We look forward to receiving these materials, when they become available, and to further coordination with NSA and Fort Meade as project planning proceeds. If you have any questions or require further information, please do not hesitate to contact either Jonathan Sager (for inquiries regarding the historic built environment) at 410-514-7636 or jsager@mdp.state.md.us or Dixie Henry (for inquiries regarding archeological resources) at 410-514-7638 or dhenry@mdp.state.md.us.

Sincerely,

Dixie L. Henry
Preservation Officer
Maryland Historical Trust

DLH/200800442

cc: Kathleen Hutson (NSA)
Bob Rosenbush (MDP)



MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Baltimore, Maryland 21230
410-537-3000 • 1-800-633-6101 • <http://www.mde.state.md.us>

Martin O'Malley
Governor

Anthony G. Brown
Lieutenant Governor

Shari T. Wilson
Secretary

Robert M. Summers, Ph.D.
Deputy Secretary

March 20, 2008

Ms. Mary Young
E2M
2751 Prosperity Avenue, Suite 200
Fairfax, VA 22031

RE: State Application Identifier: MD20080212-0094
Project: Scoping – Utilities Upgrade Project at Fort Meade

Dear Ms. Young:

Thank you for the opportunity to review the above referenced project. The document was circulated throughout the Maryland Department of the Environment (MDE) for review, and the following comments are offered for your consideration.

1. Any above ground or underground petroleum storage tanks that may be utilized must be installed and maintained in accordance with applicable State and federal laws and regulations. Contact the Oil Control Program at (410) 537-3442 for additional information.
2. 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) 537-3318 for additional information.
3. The Hazardous Waste Program should be contacted at (410) 537-3343 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.

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

Sincerely,

Joane D. Mueller
MDE Clearinghouse Coordinator
Science Services Administration

cc: Bob Rosenbush, State Clearinghouse

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APPENDIX C

REVIEW OF THE DRAFT EIS

The following agencies and individuals were sent copies of the Draft EIS.

Federal Agency Contacts

Mr. Jeff Trulick
CENAB-PL
Regulatory Branch
USACE, Baltimore District
PO Box 1715
Baltimore, MD 21203

COL Daniel Thomas
Installation Commander
Fort Meade
Building 4551
Fort Meade, MD 20755

Ms. Melanie Moore
Public Affairs Officer (PAO)
Fort Meade
Building 4550, Room 120
Fort Meade, MD 207555025

Mr. Michael Butler
Fort Meade DPW-ED
239 Chisholm Ave
Fort Meade, MD 20255

Mr. William Arguto
Regional NEPA Coordinator
USEPA, Region 3
1650 Arch St (Mail Code EA30)
Philadelphia, PA 191032029

Director
U.S. Department of the Interior
Office of Environmental Policy & Compliance
Main Interior Building (MS 2342)
1849 C Street, NW
Washington, DC 20240

Mr. Stephen Syphax
Chief, Resource Mgmt Division
National Capital Parks East
National Park Service
1900 Anacostia Dr, SE
Washington, DC 20020

Mr. Hector Ruiz, Jr.
GS15, MPB_1
Defense Information Systems Agency
P.O. Box 4502
Arlington, VA 22204-4502

Ms. Heather Campbell
Field Representative for
U.S. Senator Benjamin L. Cardin
100 S. Charles St.
Tower I, Suite 1710
Baltimore, MD 21201

State and Local Agency Contacts

Mr. J. Rodney Little
SHPO
Division of Historical and Cultural Programs
Maryland Historic Trust
100 Community Place
Crownsville, MD 21032-2023

Mr. George G. Cardwell
Office of Planning and Zoning
Anne Arundel County
Heritage Office Complex
2664 Riva Rd, MS 6403
Annapolis, MD 21401

Ms. Linda Janey
Asst. Secretary, Clearinghouse
Capital Planning and Review Division
Maryland Department of Planning
301 West Preston St, Suite 1104
Baltimore, MD 21201-2305

Stakeholders Groups

Mr. Craig Hanson
Sales Engineer
Alban Engine Power Systems
6387 Old Washington Rd
Elkridge, MD 21075

Mr. Dan Lukaszewicz
URS Corporation
2020 K Street, NW, Suite 300
Washington, DC 20006-1806

Private Citizens

Mr. Brian Rydell

Ms. Melanie Moore

Piet deWitt

Mr. Chris Simpson

Libraries

Fort Meade Main Post Library
4418 Llewellyn Avenue
Fort Meade, MD 20755

The following agencies and individuals will be sent notice that the Draft EIS is available for review.

Federal Agency Contacts

Manager
Baltimore-Washington Parkway
National Park Service
inc/o Greenbelt Park
6565 Greenbelt Rd
Greenbelt, MD 20770

Mr. Brad Knudsen
Refuge Manager
Patuxent Research Refuge
U.S. Fish and Wildlife Service
10901 Scarlet Tanager Loop
Laurel, MD 20708-4027

Mr. Jacob Hoogland
Chief/NEPA Contact
Environmental Quality Branch
National Park Service
Org 2310
1201 Eye St, NW
Washington, DC 20005

Mr. Michael T. Chezik
REO, Philadelphia Region
Office of Environmental Policy & Compliance
U.S. Department of the Interior
Custom House, Room 244
200 Chestnut St
Philadelphia, PA 19106

State and Local Agency Contacts

Executive Director
Maryland Commission on Indian Affairs
Maryland Department of Human Resources
311 W. Saratoga St, Room 272
Baltimore, MD 21201

Mr. David Edgerley
Secretary
MD Dept of Business & Economic
Development
217 East Redwood Street
Baltimore, MD 21202

Mr. Steve Lang
Air & Radiation Mgmt Administration
Maryland Department of the Environment
1800 Washington Blvd
Baltimore, MD 21230

Mr. Mark Hamlett
Acting Superintendent
Thomas J.S. Waxter Center
375 Red Clay Road, SW
Laurel, MD 20724

Mr. Paul A. Peditto
Director, Wildlife & Heritage
Maryland Department of Natural Resources
Tawes State Office Building E-1
580 Taylor Ave
Annapolis, MD 21401

Mr. Roger L. Richardson
Secretary
Maryland Department of Agriculture
50 Harry S. Truman Parkway
Annapolis, MD 21401

Mr. Steven W. Koehn
Director and State Forester
Maryland Forest Service
Maryland Department of Natural Resources
Tawes State Office Building E-1
580 Taylor Ave
Annapolis, MD 21401

Ms. Joane Mueller
PIA
Maryland Department of the Environment
1800 Washington Blvd
Baltimore, MD 21230

Ms. Lori Byrne
Environmental Rev. Specialist
Maryland Department of Natural Resources
Tawes State Office Building E-1
580 Taylor Ave
Annapolis, MD 21401

Ms. Shari Wilson
Secretary
Maryland Department of the Environment
1800 Washington Blvd
Baltimore, MD 21230

State and Local Elected Officials

The Honorable G. James Benoit
Councilman
District 4
Anne Arundel County
44 Calvert St, 1st Floor
Annapolis, MD 21401

The Honorable Jack Johnson
Prince Georges Co. Executive
14741 Governor Oden Bowie Dr, Suite 5032
Upper Marlboro, MD 20772-3050

The Honorable James E DeGrange
Member
Anne Arundel County, District 32
Maryland State Senate
James Senate Office Building, Room 101
11 Bladen St
Annapolis, MD 21401

The Honorable James King
Member
Anne Arundel County, District 33A
Maryland House of Delegates
House Office Building, Room 163
6 Bladen St
Annapolis, MD 21401

The Honorable Janet Greenip
Member
Anne Arundel County, District 33
Maryland State Senate
James Senate Office Building, Room 321
11 Bladen St
Annapolis, MD 21401

The Honorable Jim Rosapepe
Member
Prince Georges & Anne Arundel Co. District 21
Maryland Senate
James Senate Office Building, Room 314
11 Bladen St
Annapolis, MD 20470

The Honorable John R. Leopold
Anne Arundel County Executive
44 Calvert St
Annapolis, MD 21401

The Honorable Ken Ulman
Howard County Executive
3430 Courthouse Dr
Ellicott City, MD 21043

The Honorable Martin O'Malley
Governor of Maryland
State House
100 State Circle
Annapolis, MD 21401-1925

The Honorable Mary Ann Love
Member
Anne Arundel County, District 32
Maryland House of Delegates
House Office Building, Room 165
6 Bladen St
Annapolis, MD 21401

The Honorable Pam Beidle
Member
Anne Arundel County, District 32
Maryland House of Delegates
House Office Building, Room 161
6 Bladen St
Annapolis, MD 21401

The Honorable Theodore Sophocleus
Member
Anne Arundel County, District 32
Maryland House of Delegates
House Office Building, Room 162
6 Bladen St
Annapolis, MD 21401

The Honorable Tony McConkey
Member
Anne Arundel County, District 33A
Maryland House of Delegates
House Office Building, Room 157
6 Bladen St
Annapolis, MD 21401

Tribal Contacts

Chief
American Indian Cultural Center
Cedarville Band of Piscataway Indians
16816 Country Lane
Waldorf, MD 20601

Chief
Piscataway Conoy Confederacy and Subtribes
PO Box 1484
LaPlata, MD 20646

Chief Dee Ketchum
Delaware Tribe of Indians
Delaware Tribal Headquarters
220 NW Virginia Ave
Bartlesville, OK 74003

Stakeholders Groups

Picerne Military Housing
PO Box 530
Fort Meade, MD 20755

Ms. Debbie Faux
Residential Communities Initiative
Department of Public Works
4463 Leonard Wood Ave
Fort Meade, MD 20755

Ms. Julie Snyder
Executive Director
Fort Meade Alliance
2660 Riva Rd, Suite 200
Annapolis, MD 21401

Ms. Zoe Draughon
Restoration Advisory Board
2108 Brink Court
Odenton, MD 21113

Private Citizens

Mr. Justin Gibbons

Summary: While the Final EIS did address EPA's environmental general concerns with water quality and adaptive management, we continue to have environmental concerns about the level of water resource protection from grazing impacts under drought conditions.

Dated: October 14, 2008.

Ken Mittelholtz,

Environmental Protection Specialist, Office of Federal Activities.

[FR Doc. E8-24811 Filed 10-16-08; 8:45 am]

BILLING CODE 6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[ER-FRL-8586-6]

Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564-1399 or <http://www.epa.gov/compliance/nepa/>.

Weekly receipt of Environmental Impact Statements filed 10/06/2008 through 10/10/2008. Pursuant to 40 CFR 1506.9.

EIS No. 20080410, Second Final Supplement, FTA, CA, South Sacramento Corridor Phase 2, Improve Transit Service and Enhance Regional Connectivity, Funding, in the City and County Sacramento, CA, Wait Period Ends: 11/17/2008, Contact: Jerome Wiggins 415-744-3115.

EIS No. 20080411, Draft EIS, AFS, UT, Dixie National Forest Lands, To Identify Oil and Gas Leasing of Lands, Implementation, Garfield, Iron, Kane, Piute, Washington Counties, UT, Comment Period Ends: 12/16/2008, Contact: Susan Baughman 435-865-3703.

EIS No. 20080412, Final EIS, FRA, NJ, Portal Bridge Capacity Enhancement Project, To Replace the nearly 100-Year-Old Portal Bridge and Eliminate Capacity Constraints on the Northeast Corridor between Swift Interlocking and Secaucus Transfer Station, Funding, U.S. Army Corp Section 10 and 404 Permits, Hackensack River, Hudson County, NJ, Wait Period Ends: 11/17/2008, Contact: David Valenstein 202-493-6368.

EIS No. 20080413, Draft EIS, FHW, CA, Mid County Parkway Project, Construct a New Parkway between Interstate 15 (I-15) in the West and State Route 79 (SR-79) in the East, Funding and U.S. Army COE Section 404 Permit, Riverside County, CA,

Comment Period Ends: 12/08/2008, Contact: Tay Dam 213-202-3954.

EIS No. 20080414, Draft EIS, COE, 00, PROGRAMMATIC—Oyster Restoration in Chesapeake Bay Including the Use of a Native and/or Nonnative Oyster, Implementation, Chesapeake Bay, MD and VA, Comment Period Ends: 12/15/2008, Contact: Craig Seltzer 757-201-7390.

EIS No. 20080415, Draft EIS, FHW, ID, I-90 Post Falls Access Improvements Project, Transportation Improve from Spokane Street Interchange through the State Highway 41 (SH-41) Interchange, Kootenai County, ID, Comment Period Ends: 12/01/2008, Contact: Paul C. Ziman 208-334-9180-Ext. 127.

EIS No. 20080416, Final EIS, BLM, OR, Western Oregon Bureau of Land Management Districts of Salem, Eugene, Roseburg, Coos Bay, and Medford Districts, and the Klamath Falls Resource Area of the Lakeview District, Revision of the Resource Management Plans, Implementation, OR, Wait Period Ends: 12/01/2008, Contact: Jerry Hubbard 503-808-6115.

EIS No. 20080417, Final EIS, UAF, FL, Eglin Air Force Base Program, Base Realignment and Closure (BRAC) 2005 Decisions and Related Action, Implementation, FL, Wait Period Ends: 11/17/2008, Contact: Mike Spaits 850-8820-2878.

EIS No. 20080418, Draft EIS, DOE, 00, PROGRAMMATIC—Global Nuclear Energy Partnership (GNEP) Program, To Support a Safe, Secure, and Sustainable Expansion of Nuclear Energy, both Domestically and Internationally, (DOE/EIS-0396), Comment Period Ends: 12/16/2008, Contact: Francis G. Schwartz 866-645-7803.

EIS No. 20080419, Final EIS, NHT, 00, Corporate Average Fuel Economy (CAFE) Proposed Standards for Model Year 2011-2015 Passenger Cars and Light Trucks, Implementation, Wait Period Ends: 11/17/2008, Contact: Carol Hammel-Smith 202-366-5206.

EIS No. 20080420, Final EIS, BLM, CA, Sunrise Powerlink Transmission Line Project, Proposed Land Use Plan Amendment, Construction and Operation of a New 91-mile 500 kilovolt (kV) Electric Transmission Line from Imperial Valley Substation (in Imperial Co. near the City of El Centro) to a New Central East Substation (in Central San Diego County) Imperial and San Diego Counties, CA, Wait Period Ends: 11/17/2008, Contact: Lynda Kastoll 760-337-4421.

EIS No. 20080421, Draft EIS, NSA, MD, Fort George G. Meade Utilities Upgrade Project, Proposes to Construct and Operate (1) North Utility Plant (2) South Generator Facility and (3) Central Boiler Plant, Fort George M. Meade, MD, Comment Period Ends: 12/01/2008, Contact: Jeffrey D. Willtams 301-688-2970.

EIS No. 20080422, Draft EIS, FTA, MD, Purple Line Transit Project, Proposed 16-Mile Rapid Transit Line Extending from Bethesda in Montgomery County to New Carrollton in Prince George's County, MD, Comment Period Ends: 12/01/2008, Contact: Gail McFadden-Roberts 215-656-7100.

Amended Notices

EIS No. 20080227, Second Draft Supplement, TPT, CA, Presidio Trust Management Plan (PTMP), Updated Information on the Concept for the 120-Acre Main Post District, Area B of the Presidio of San Francisco, Implementation, City and County of San Francisco, CA, Comment Period Ends: 10/20/2008, Contact: John G. Pelka 415-561-5300.

Revision to FR Notice Published: Extending Comment Period from 09/19/2008 to 10/20/2008.

EIS No. 20080293, Draft EIS, IBR, CA, Cachuma Lake Resource Management Plan, Implementation, Cachuma Lake, Santa Barbara County, CA, Comment Period Ends: 10/31/2008, Contact: Sharon McHale 916-989-7172. Revision to FR Notice Published 08/01/2008: Extending Comment Period from 09/15/2008 to 10/31/2008.

EIS No. 20080297, Draft EIS, IBR, CA, Lake Casitas Resource Management Plan (RMP), Implementation, Cities of Los Angeles and Ventura, Western Ventura County, CA, Comment Period Ends: 10/31/2008, Contact: Sharon McHale 916-989-7172. Revision to FR Notice Published 08/08/2008: Extending Comment Period from 9/22/2008 to 10/31/2008.

Dated: October 14, 2008.

Ken Mittelholtz,

Environmental Protection Specialist, Office of Federal Activities.

[FR Doc. E8-24813 Filed 10-16-08; 8:45 am]

BILLING CODE 6560-50-P

The notice below was published on page A14 in the *Washington Post* on October 17, 2008.

Notice of Availability and Request for Comments: Draft EIS for the Proposed Utilities Upgrade Project at Fort Meade, Maryland

The Department of Defense (DOD) announces the availability of the Draft Environmental Impact Statement (EIS) for the Proposed Utilities Upgrades Project at Fort Meade, Maryland. The project was initiated to upgrade and modernize aging utilities infrastructure. The Proposed Action includes the construction of generator facilities, an electrical substation, and a boiler plant, as well as ancillary facilities and, if needed, replacement parking. The proposed utility upgrades would allow for fully redundant emergency power supply.

The DOD invites public and agency input on the Draft EIS. Copies of the Draft EIS are available for your review at the Fort Meade Main Post Library, 4418 Llewellyn Avenue, Fort Meade, MD 20755. You may also call (301) 576-5391 or send an email to UtilityEIS@e2m.net to request a copy of the Draft EIS.

On November 6, 2008, the DOD will hold an open house from 4:30 to 5:00 p.m. and a public meeting from 5:00 to 7:00 p.m. at the Ramada Laurel, 3400 Fort Meade Road, Laurel, MD 20724. The public meeting may end earlier or later than the stated time depending on the number of persons wishing to speak. Oral and written comments will be received at the public meeting and considered in preparation of the Final EIS. You can also submit written comments addressed to "Utilities Upgrades EIS," c/o e²M, 2751 Prosperity Avenue, Suite 200, Fairfax, VA 22031. Written comments are requested by December 1, 2008, to ensure sufficient time to consider public input in preparation of the Final EIS.

Your comments on this Proposed Action are requested. Written and oral comments may be published in the EIS. Any personal information provided will be used only to identify your desire to make a statement during the public comment portions of the EIS process or to fulfill requests for copies of the EIS or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the Draft or Final EIS. However, only the names of private citizens will appear in the EIS; personal addresses and phone numbers will not be published.

The notice below was published on page 14 in the *Baltimore Sun* on October 17, 2008.

**Notice of Availability and Request for
Comments: Draft EIS for the Proposed
Utilities Upgrade Project at Fort Meade,
Maryland**

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Maryland Department of Planning

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

Richard Eberhart Hall
Secretary
Matthew J. Power
Deputy Secretary

October 15, 2008

Mr. Jeffrey D. Williams
Senior Environmental Engineer, Office of Occupational Health, Environmental, and Safety Services
National Security Agency
Suite 6404
9800 Savage Road
Fort Meade, MD 20755

STATE CLEARINGHOUSE REVIEW PROCESS

State Application Identifier: MD20081015-1003

Reply Due Date: 11/28/2008

Project Description: Draft Environmental Impact Statement: Proposed Utilities Upgrade Project at Fort George G. Meade:
proposed construction of infrastructure to provide redundancy of electrical power: consider six (6) alternatives

Project Location: County of Anne Arundel

Clearinghouse Contact: Bob Rosenbush

Dear Mr. Williams:

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

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

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

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

Sincerely,

Linda C. Janey, J.D., Assistant Secretary
for Clearinghouse and Communications

LCJ:BR

08-1003_NRR.NEW.doc



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1690 Arch Street
Philadelphia, Pennsylvania 19103-2029

November 18, 2008

Mr. Jeffrey D. Williams
Utilities Upgrades EIS
c/o e2m, Suite 200
2751 Prosperity Avenue
Fairfax, VA 22031

Re: Fort George G. Meade Utilities Upgrade Project, Proposes to Construct and Operate (1) North Utility Plant (2) South Generator Facility and (3) Central Boiler Plant, Fort George M. Meade, MD (CEQ 20080421)

Dear Mr. Williams:

In accordance with the National Environmental Policy Act (NEPA) of 1969 and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement for the Fort George G. Meade Utilities Upgrade Project. As a result of this review, EPA has assigned this Draft Environmental Impact Statement (DEIS) a rating of EC-2 (Environmental Concerns/Insufficient Information), which indicates that we have environmental concerns regarding the proposal and that there is insufficient information in the document to fully assess the environmental impacts of this project. A copy of the EPA's rating system is enclosed for your information.

The purpose of the proposed action is to upgrade and modernize aging utilities infrastructure through renovation, modernization, and replacement on the National Security Agency (NSA) campus at Fort George G. Meade to support the capabilities of the existing NSA campus for current and future missions. The proposed action would include the construction and operation of a North Utility Plant, a South Generator Facility, a Central Boiler Plant, and associated infrastructure.

The North Utility Plant is proposed to provide electrical power with redundancy, and would consist of a North Electrical Substation, a North Generator Facility, transmission lines, and distribution lines. The North Electrical Substation would provide 50 megavolt-amperes (MVA) of power to the NSA campus. The North Generator Facility would provide 60 to 65 megawatts (MW) of emergency electrical power generated by diesel engine/generator sets. The proposed generator sets would have a selective catalytic reduction (SCR) system to control air pollutant emissions, and each generator would be equipped with an exhaust stack no taller than 35 feet above ground level. The North Generator Facility would also include aboveground storage tanks (ASTs) for diesel fuel, waste oil, and urea. The total building footprint for the North Utility Plant would be approximately 105,000 square feet (2.4 acres). Installation of electrical distribution lines would disturb up to 90,000 square feet of area. Installation of transmission lines, which could be either overhead or underground, could disturb up to 53,000 square feet of area. It is assumed that all internal campus utility lines would be installed in

previously disturbed areas. The Department of Defense (DOD) has identified an undeveloped wooded area (Site 4) as the preferred location of this facility. Three other location alternatives are also considered (Sites 1, 2, and 3).

The proposed South Generator Facility is intended to provide emergency electrical power to supplement an existing South Utility Plant. As part of this project, an emergency generator facility currently capable of generating 17.6 MW of electrical power would be replaced with a larger generator facility that is capable of generating 47 to 52 MW of emergency electrical power using diesel engine/generator sets. The proposed generator sets would have an SCR system to control air pollutant emissions, and each generator would be equipped with an exhaust stack no taller than 35 feet above ground level. The South Generator Facility would also include ASTs for diesel fuel, waste oil, and urea. The total building footprint would be 60,000 square feet (1.4 acres). For the proposed South Generator Facility, DOD identified the existing site (Site 5) as the preferred site. Two other location alternatives were identified (Sites 6 and 7).

The Central Boiler Plant would replace an existing outdated boiler plant. Four vintage boilers would be replaced with four comparably sized modern dual-fuel boilers with a total heat input rating of 392 million British thermal units per hour (MMBtu/hr). Similar to the existing boiler plant, the proposed Central Boiler Plant would operate primarily using natural gas with No. 2 fuel oil backup. Two modern ASTs for No. 2 fuel oil, with associated spill containment storage, are proposed to replace the existing ASTs. The footprint for the Central Boiler Plant would be approximately 18,000 square feet (0.4 acres). For the new Central Boiler Plant, DOD has identified the existing site of the boiler plant and ASTs as the preferred alternative (Site 8) and one alternative location (Site 7).

Because the NSA campus has limited land that can be developed, construction of new facilities could result in the displacement of some campus parking, depending on the facility alternative selected. Preliminary screening resulted in two primary parking alternatives: construction of one or more surface lots or construction of a parking garage. The alternatives evaluated as representative of the range of alternatives include the construction of surface parking lots at undeveloped sites (Sites 4 and 6), construction of a parking garage at Site 3, construction of a parking garage at Site 9, and construction of a parking garage at Site 10.

In general, EPA supports the purpose and need for the proposed action in the Draft EIS. EPA understands the need to upgrade utilities necessary to support the existing campus and the mission going forward. However, based on our review of the DEIS, EPA has environmental concerns with the impact to the loss of forested areas on the Forest Conservation Area if Site 4 and Site 6 were selected to meet facility/parking needs. EPA offers the following specific comments for your consideration in development of the Final EIS for this project.

Alternatives

North Utility Plant: DOD's preferred alternative for the North Utility Plant is Site 4. Site 4 is an undeveloped parcel of land, approximately 6.1 acres, within a Forest Conservation Area. Development of the of the North Utility Plant would result in the removal of approximately 4 acres of trees and require a new access road which would most likely cross a perennial stream. DOD is aware that Site 4 would have a greater potential for environmental impacts if the North Utility Plant were constructed there; however, there would be no loss of parking.

Some discrepancies may need to be clarified. In particular, the actual space needed for the North Utility Plant is determined to be approximately 2.4 acres. However, development for the plant at Site 4 would result in the removal of 4 acres of trees. It is not clear why more trees are designated for removal than what is needed for the plant. Is it the need for the access road that would require additional tree removal? To have a better understanding, this should be addressed in the FEIS.

USEPA-1

As noted on page 2-15, Site 4 is "outside of the NSA-controlled perimeter." Thus, Site 4, the preferred alternative, does not meet the first of DOD's evaluation criteria for the facility alternatives as listed on page 2-11. The first criteria listed states that the site be "within the NSA campus." The boundary for the NSA campus should be depicted on a map.

USEPA-2

USEPA-3

Also, when comparing alternatives, the other sites appear to be less environmentally intrusive and can possibly provide opportunities to meet both facility and parking needs. For instance, the current use of Site 1 is a parking lot which consists of approximately 7.3 acres. If the North Utility Plant requires approximately 2.4 acres, then a portion of the parking lot can be preserved or redesigned. It is stated on page 2-12 that, "If Site 1 were selected as the location for the North Utility Plant, it is likely that the site design and engineering would be able to minimize the amount of actual parking area lost so that some parking could still be used." "However, for the purposes of this EIS, it is assumed that construction of the North Utility Plant would result in the loss of 7.3 acres of parking." The latter statement contradicts the previous statement as only some parking would be lost. Also, it seems that there is a possibility that through efficient design, the total parking spaces currently available may not be completely lost or if there is a loss it may not be too significant.

USEPA-4

The other alternative site for the North Utility Plant is Site 3. Site 3 is approximately 5.6 acres and is currently used as an overflow parking lot. It is not certain whether this site is inside or outside of the NSA-controlled perimeter; it is alongside of Site 4 (southwest). Thus, it is unclear whether this site meets DOD's evaluation criteria for the facility. Again, it is inaccurate to state that if this site is selected it would then mean a loss of 4.1 acres of parking. The North Utility Plant requires approximately 2.4 acres which would enable the retention of some parking.

USEPA-5

USEPA-6

USEPA-1. Added text for clarification to Section 2.2.4.2, Site 4.

USEPA-2. Added text for clarification to Section 2.2.4.1 and Section 2.2.4.2, Site 4.

USEPA-3. The NSA-controlled property was added to Figures 2.2-1, 2.2-2, and 3.5-2.

USEPA-4. Added text for clarification to Section 2.2.4.2, Site 1.

USEPA-5. Added text for clarification to Section 2.2.4.2, Site 3.

USEPA-6. Added text for clarification to Section 2.2.4.2, Site 3.

Parking Alternative: It is EPA's understanding, that if Site 4 is used for the North Utility Plant, then there would be no parking loss. It is the assumption of DOD that, if an alternate site is selected, then there would be a loss of parking. However, without a design plan the number of parking spaces lost cannot be determined and the opportunity for a more efficient design that would alleviate the potential loss cannot be assessed.

USEPA-7

DOD designates Sites 4 and 6 as potential surface parking lot alternatives. These areas are undeveloped forested areas. The loss of 8.7 acres would remove potential wildlife habitat and could degrade some remaining and scenic and natural qualities of the NSA campus. Increased impervious surface could impact storm water velocity as well as water quality and groundwater recharge. The impact to this resource appears to be far greater than the other proposed sites (Sites 3, 9 and 10).

USEPA-8

Wetlands

As stated on page 3-19, "An unnamed perennial stream of natural origin flows along the southeastern boundary of Site 4 and the forest stand; this stream also traverses past the southern boundary of Site 3 and continues on to the southwest." Page 4-33 states, "A stream-crossing for the site access and transmissions lines would likely be required to access the North Utility Plant at Site 4." DOD states, "If Site 4 is chosen as the location, jurisdictional wetland delineation would be required to determine if there are wetlands associated with the stream that flows along the southeastern boundary of the forest stand." To more accurately determine the degree of environmental impact, wetlands should be identified and delineated to determine impacts from the proposed action prior to the selection of a site. Wetlands present on, or immediately surrounding the site should be delineated according to the 1989 Federal Manual for Identifying and Delineating Jurisdictional Wetlands. Impacts to wetlands should be avoided or minimized whenever possible. The total size of the wetlands should be provided, in addition to the size of the wetland in the study area and size of the direct impact. The size and functional value of all impacted wetlands should be analyzed and a mitigation plan should be developed and included in the FEIS.

USEPA-9

Vegetation

Development of the Proposed Action occurring in the forested areas (Site 4 and 6) would result in the loss of several acres of pine and deciduous hardwood forest. The DEIS states on page 4-40 that, "Under the Forest Conservation Act, 20 percent of the forest should be preserved as a Forest Conservation Mitigation Area to mitigate project impacts." With a loss of 80 percent of the Forest Conservation Area, retaining 20 percent doesn't seem to adequately mitigate for the significant loss. DOD states that, "A Forest Conservation Plan would be developed and implemented if currently forested sites were developed under the Proposed Action." A Forest Conservation Plan that would provide alternative ways to mitigate for forest loss and promote the growth of vegetation would be recommended for the protection of this valued resource.

USEPA-10

USEPA-7. Text was added to Section 2.2.6 for clarification.

USEPA-8. The number of acres that would be disturbed at Sites 4 and 6 would be a maximum of 8.7 acres and could be less, but the exact space requirements would not be known until the detailed design process begins. At the time of publication of the Final EIS, only high-level engineering design has occurred and a conservative evaluation of impacts has been made. Final project design would limit impacts to forested areas and visual resources to the maximum extent practical.

Impacts to storm water velocity, groundwater and water quality are addressed in Section 4.5.4.1.

USEPA-9. Text was added to the EIS describing the formal delineation of wetlands and waters of the U.S. that was conducted on December 2, 2008 on Site 4 and along the unnamed perennial stream between the upstream end of the permanently flooded storm water pond near the northeastern corner of Site 1 and the existing stream crossing and entrance from Canine Road to the parking lot associated with Site 3.

USEPA-10. Text revised to state that a minimum of 20 percent of the forest would be preserved.

5

Thank you for providing EPA with the opportunity to review this project. If you have questions regarding these comments, the staff contact for this project is Karen DelGrosso; she can be reached at 215-814-2765.

Sincerely,



William Arguto
NEPA Team Leader
Office of Environmental programs

Enclosure (1)

**SUMMARY OF RATING DEFINITIONS
AND FOLLOW UP ACTION***

Environmental Impact of the Action

LO--Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC--Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO--Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EI--Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEO.

Adequacy of the Impact Statement

Category 1--Adequate

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2--Insufficient Information

The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3--Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEO.

*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment

LAURI R. WATSON

FROM: Ronald E. Lamb
SENT: Friday, November 21, 2008 1:20 PM
TO: Lauri R. Watson
SUBJECT: FW: Viewshed Analysis - Baltimore-Washington Parkway

Please add this to the Utilities Upgrade EIS admin record.

-----Original Message-----

From: Williams, Jeffrey
Sent: Friday, November 21, 2008 1:07 PM
To: Ronald E. Lamb; Don H. Beckham
Cc: Vice, Michael L
Subject: FW: Viewshed Analysis - Baltimore-Washington Parkway

-----Original Message-----

From: Joe_Cook@nps.gov [mailto:Joe_Cook@nps.gov]
Sent: Friday, November 21, 2008 12:44 PM
To: Williams, Jeffrey; Gayle_Hazelwood@nps.gov
Cc: Stephen_Syphax@nps.gov; James_Rosenstock@nps.gov
Subject: Viewshed Analysis - Baltimore-Washington Parkway

Good morning Jeff:

It was a pleasure speaking with you on Wednesday regarding NSA's utility upgrade project and the potential impacts to the Parkway viewshed.

You had asked for some additional information on the type of visual analysis we had in mind. The following info. is provided to define what we believe would adequately evaluate the potential impacts.

This past March and April we conducted balloon tests on a property adjacent to the Parkway at MD 198. The balloons were 36-inch diameter weather balloons, 100 mils thick and helium filled.

A series of balloons were raised from known points on the ground identified as topographically prominent in that if anything was going to be visible from the Parkway it would be from these locations. The balloons were raised at a range of heights simulating proposed building heights. A photographic log was kept to record which balloons were visible, or not, from each of the vantage points. We would like to adopt the same format at Fort Meade.

The log and photos were the basis for identifying any requisite mitigation.

The consultant that conducted the balloon tests was Cultural Resources, Inc. (CRI). They have considerable experience in this endeavor

The point of contact for CRI is:

NPS-1

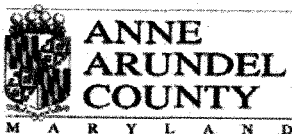
NPS-1. On December 2, 2008, balloon tests to supplement and verify the visual impact assessment was conducted at the proposed locations of the North and South Generator Stations. One 6-foot diameter balloon was positioned at the corners of Sites 4 and 5 and were raised to a height of 35 feet, the proposed maximum stack height. Photographs were taken from the BW Parkway at the same position used in the computer simulation that was presented in the DEIS. At no point were the balloons at either the proposed Northern Site or the proposed Southern Site visible from the BW Parkway. These results are consistent with the visual impact assessment included in Appendix C.

Ellen M. Brady, Vice President
Cultural Resources, Inc.
2200 Colonial Avenue, Suite 26
Norfolk, VA 23517

If you have any questions or need any additional information please feel free to contact me.

Thanks,

Joe
Chief, Land Resources Program Center
National Capital Region
National Park Service
1100 Ohio Drive, SW
Wash., D.C. 20242
(202) 619-70340



Office of Planning and Zoning
P.O. Box 6675
2664 Riva Road
Annapolis, Maryland 21401

AAC-1. Comment noted. Thank you for your support.

December 2, 2008

Utilities Upgrades Environmental Impact Statement
C/O e2M
2751 Prosperity Avenue, Suite 200
Fairfax, Virginia 22031

Sir:

Thank you for providing Anne Arundel County, Maryland with the opportunity to offer comments regarding the *Environmental Impact Statement for the Proposed Utilities Upgrade Project at Fort George G. Meade, Maryland*, dated October 2008 and prepared by e2M. The County understands the importance of the availability of sufficient electricity to sustain the mission of the National Security Agency.

We do note that all proposed facility improvements are located on lands owned by the Federal Government and therefore are not subject to any local permits. Therefore the comments offered by the County are proposed to support the build proposal and to reduce costs in providing the facilities deemed to be necessary.

} AAC-1

We also note that in each instance there will be an impact to available parking provided on site to support the travel demand associated with activities at NSA. Travel associated with NSA does result in impacts to off-site highway facilities such as the Baltimore-Washington Parkway which is owned by the National Park Service (NPS), MD 32 (Patuxent Freeway) which is a limited access facility operated by the Maryland State Highway Administration (SHA) and MD 175 (Annapolis Road), a principle arterial also operated by the SHA and currently being evaluated in a National Environmental Policy Act (NEPA) decision document.

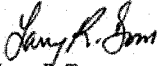
Costs associated with replacing the parking spaces that would be lost by using the land for the proposed facilities would be substantial, especially in instances where structured parking is being considered. Since the Department of Defense does not typically charge for parking either at grade or in structures, both the capital and long term operating costs would need to be borne by NSA.

Therefore, the County does recommend that NSA increase its efforts to promote and sustain rideshare, car and van pool, and transit alternatives which if successful will reduce demand for currently strained highway capacity, increase the viability of transit in the area, and serve as a model for helping to mitigate future travel demand associated with the Base Realignment and Closure (BRAC) 2005 Recommendations and the Enhanced Use Lease (EUL) development which will substantially impact travel in the vicinity beginning in 2010.

The County is eager to work with NSA and tenants at Fort Meade to advance ridesharing, car and van pooling and transit use proposals and recommends that the Final Environmental Impact Statement for this utilities upgrade also endorses and recommends greater use of vehicle trip reduction strategies as means to address the costs associated with replacing the parking.

Should you have any questions, regarding our comments, please contact George Cardwell, Planning Administrator via e-mail at pxcard44@aacounty.org or via phone at (410) 222-7440.

Sincerely,



Larry R. Tom
Planning & Zoning Officer

cc: Catherine Hill, Director, Local Government Relations, NSA
Robert Leib, Special Assistant to the County Executive/BRAC
Carole Sanner, Assistant Planning & Zoning Officer, OPZ
George Cardwell, Planning Administrator, OPZ

AAC-2. Comment noted. Thank you for your support.

AAC-2



MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard • Baltimore MD 21230
410-537-3000 • 1-800-633-6101

Martin O'Malley
Governor

Anthony G. Brown
Lieutenant Governor

Shari T. Wilson
Secretary

Robert M. Summers, Ph.D.
Deputy Secretary

December 10, 2008

Mr. Jeffrey D. Williams
Senior Environmental Engineer
National Security Agency
Fort George Meade
Maryland 21401-1925

Dear Mr. Williams:

Thank you for your letter to Governor Martin O'Malley regarding the Draft Environmental Impact Statement (EIS) for the upgrade of aging utilities infrastructure at Fort Meade, Maryland. The Governor has received your letter and asked that I respond on his behalf.

It is important to consider the air quality impacts of any large project in Maryland, especially the Fort Meade area which is located on both an ozone and fine particle non-attainment area. The notice identifies the construction of an emergency generator facility. The Maryland Department of the Environment (MDE) has proposed a new regulation under COMAR 26.11.09 Control of Fuel-Burning Equipment titled "Stationary Internal Combustion Engines and Certain Fuel-Burning Installations for Emergency Generators" on October 24, 2008. The regulation establishes emission requirements for new emergency generators and for those that choose to participate in load shaving programs. National security agencies have special exceptions under this regulation so please review this regulation to ensure compliance. The notice also identifies the construction of a boiler and an electrical substation. Please be aware permits are required for specific equipment installation in Maryland and you should be in contact with MDE's air permitting program to ensure compliance with any permitting requirement.

Lastly, the Federal general conformity rule applies to Federal projects located in air quality nonattainment areas. For more information on general conformity, please refer to the following Federal Register notices: 40 CFR Parts 6, 51, and 93, November 30, 1993; 40 CFR Part 52, April 19, 1995; and 40 CFR Parts 51 and 93, July 17, 2006. General conformity must be addressed in the environmental impact statement for this project.

MDE-1. The following text was added to Section 3.3.2 of the Final EIS "In addition to the above stated regulations, the MDE has proposed a new regulation under COMAR 26.11.09 Control of Fuel Burning Equipment titled "Stationary Internal Combustion Engines and Certain Fuel-Burning Installations for Emergency Generators" on October 24, 2008. The regulation establishes emission requirements for new emergency generators."



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Mr. Jeffrey D Williams
Page Two

Thank you again for your letter. The Governor appreciates hearing from you and, on his behalf, I thank you for your interest in this very important issue. If I may be of further assistance, please contact me or Mr. George (Tad) S. Aburn, Jr., Director of the Air and Radiation Management Administration at 410-537-3255 or by e-mail at gaburn@mde.state.md.us.

Sincerely,



Secretary

cc: George (Tad) Aburn, Jr., Director of Air and Radiation Management Administration



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NATIONAL SECURITY AGENCY
FORT GEORGE G. MEADE, MARYLAND 20755-6000

January 14, 2009

Mr. Stephen Syphax
Chief, Resource Management Division
National Capital Parks East
National Park Service
1900 Anacostia Drive, SE
Washington, D.C. 20020

RE: Viewshed Analysis – Baltimore Washington Parkway
Environmental Impact Statement for the Proposed Utilities Upgrade Project
Fort Meade, Maryland

Dear Mr. Syphax:

As a follow-up to our letter to you, dated September 23, 2008 and in response to electronic correspondence, received November 21, 2008, from Mr. Joe Cook, Chief, Land Resources Program Center, please find enclosed a report describing the results of balloon tests that were conducted on December 2, 2008. The tests, suggested by Mr. Cook, were conducted as a supplement to the visual impact assessment conducted through the Environmental Impact Statement (EIS) for the Proposed Utilities Upgrade Project at Fort George G. Meade, Maryland. During the test we used the suggested contractor with NPS experience, and conducted the tests after vegetative cover was down. Six-foot diameter balloons were positioned at the corners of the proposed sites for the North and South Generator Stations and were raised to a height of 35 feet, the proposed maximum stack height. Photographs were taken from the Baltimore Washington Parkway at the same positions used in the computer simulation that was presented in the Draft EIS. At no point were the balloons at either the proposed Northern Site or the proposed Southern Site visible from the Baltimore Washington Parkway. These results are consistent with the visual assessment included in the Draft EIS.

We appreciate your concerns over possible impacts to the viewshed of the Baltimore Washington Parkway. We believe that the original computer simulation and the attached field test results demonstrate that there is no visual impact from the projects described in the EIS. As the execution of the Utilities Upgrade Project progresses, we will continue to coordinate and advise your office of any proposed modifications that differ significantly from the current proposal. We thank you for your comments.

Sincerely,

A handwritten signature in cursive script that reads "Jeffrey D. Williams".

Jeffrey D. Williams
Senior Environmental Engineer

Enclosure: Visual Impact Assessment, Ft. Meade Campus

cc: Mr. Joe Cook, Chief, Land Resources Program Center, National Park Service

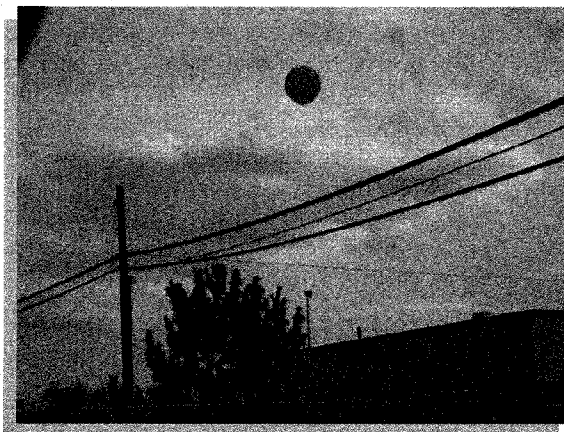
VISUAL IMPACT ASSESSMENT FT. GEORGE G. MEADE NSA CAMPUS

On October 17, 2008 the National Security Agency (NSA) published a Draft Environmental Impact Statement (DEIS) on the Utility Upgrades Program at Ft. George G. Meade, Maryland for public comment. Included in the DEIS was an assessment of the potential impacts to the viewshed of the Baltimore-Washington Parkway (BW Parkway), which is listed in the National Register of Historic Places (NRHP). The DEIS included a simulation of the visibility of the major components from the BW Parkway (see Section 4.1 of the DEIS). In comments on the DEIS dated November 21, 2008, the National Park Service (NPS) requested an additional assessment to ensure that the Proposed Action would not impact the BW Parkway viewshed. Specifically, NPS requested that balloons be raised from the locations proposed for the electric generator exhaust stacks and that visual observations be made and documented to determine the extent to which the balloons would be visible from the BW Parkway.

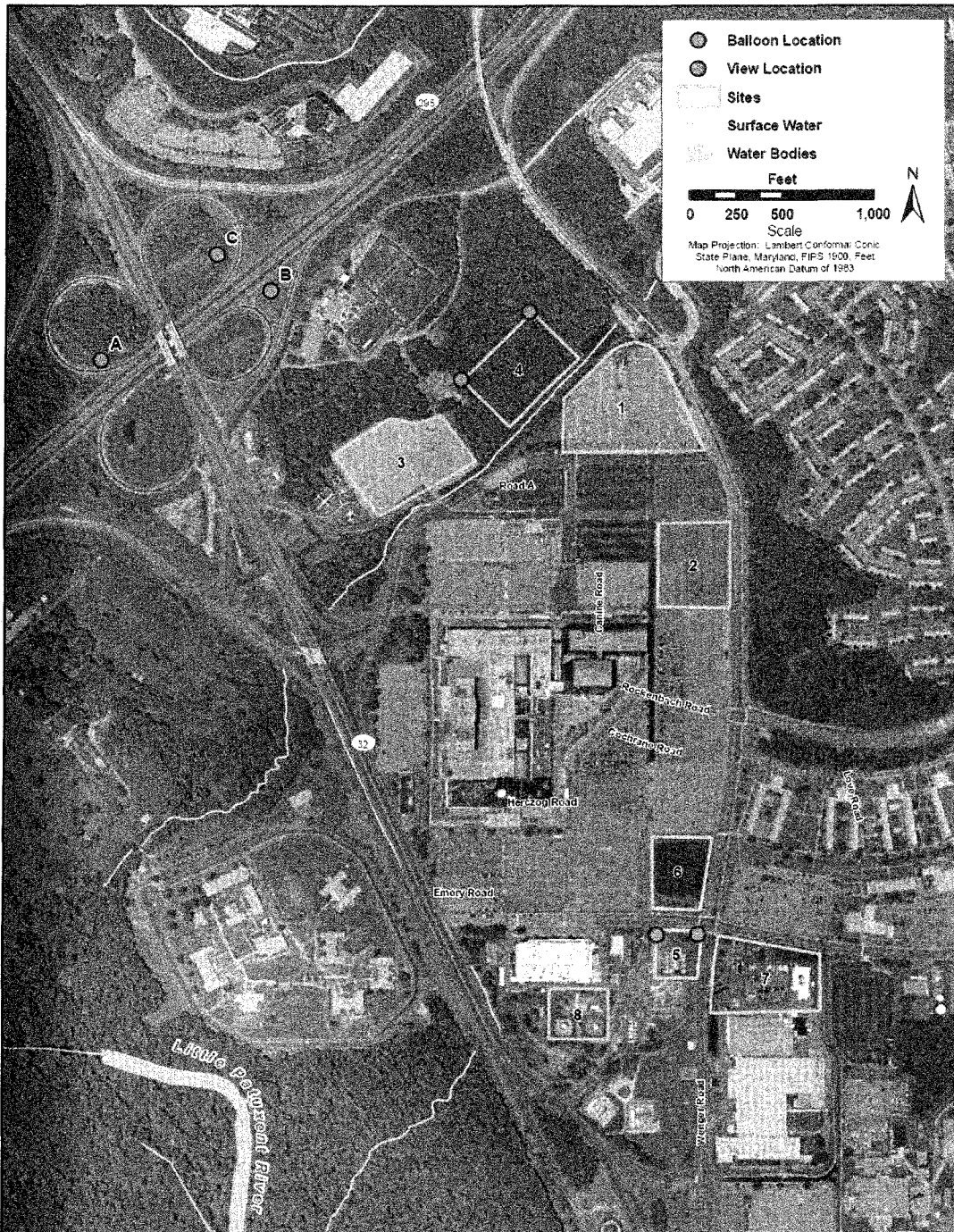
On December 2, 2008, personnel from Cultural Resources, Inc. (a contractor engaged to conduct the test), e²M (the contractor that prepared the DEIS), and NSA raised balloons at the proposed locations of the North and South Generator Stations. The balloon positions were located using a Thales Mobile Mapper CE GPS unit. Four 6-foot diameter balloons were raised to a height of 35 feet, the proposed maximum stack height. One balloon was positioned at the corners of the 2 proposed project locations. The balloon locations and the viewing locations are marked on the accompanying figure. The sites are both level, so the balloon positions corresponded with the most prominent topological features of each site.

Photographs were taken from the BW Parkway at the same position used in the computer simulation that was presented in the DEIS. Additional photographs were taken at alternate positions to ensure that the visual impacts were assessed from alternate locations. The observer's positions are marked on the figure. At no point were the balloons at either the proposed Northern Site or the proposed Southern Site visible from the BW Parkway.

A photo of one of the balloons in position and photos of the proposed sites from the BW Parkway are presented below. The red arrows on the photographs indicate the locations of the balloons. From the photos, it is clear that the Proposed Action will not impact the viewshed from the BW Parkway, and therefore will have no effect on the NRHP-listed BW Parkway.

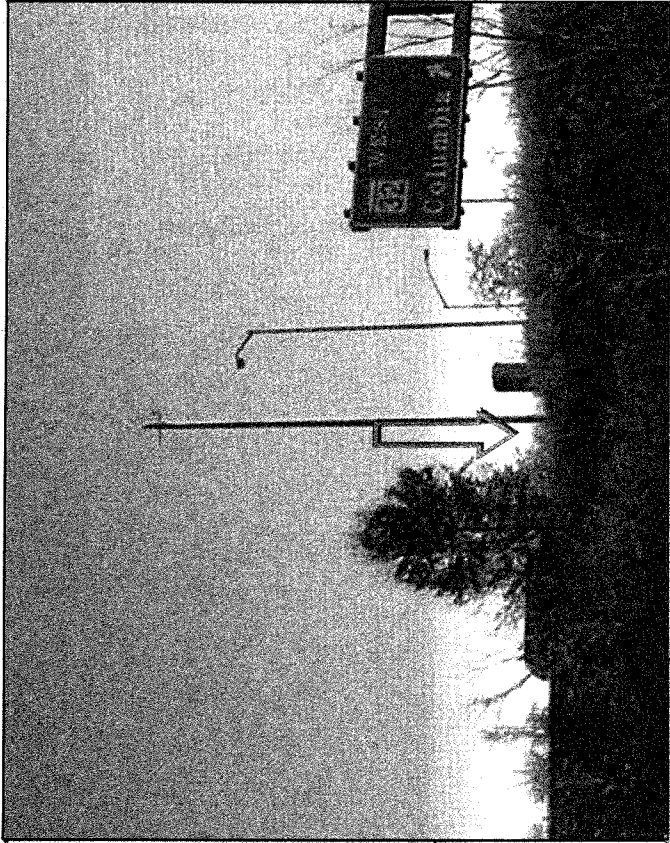


Balloon Position at Site 5

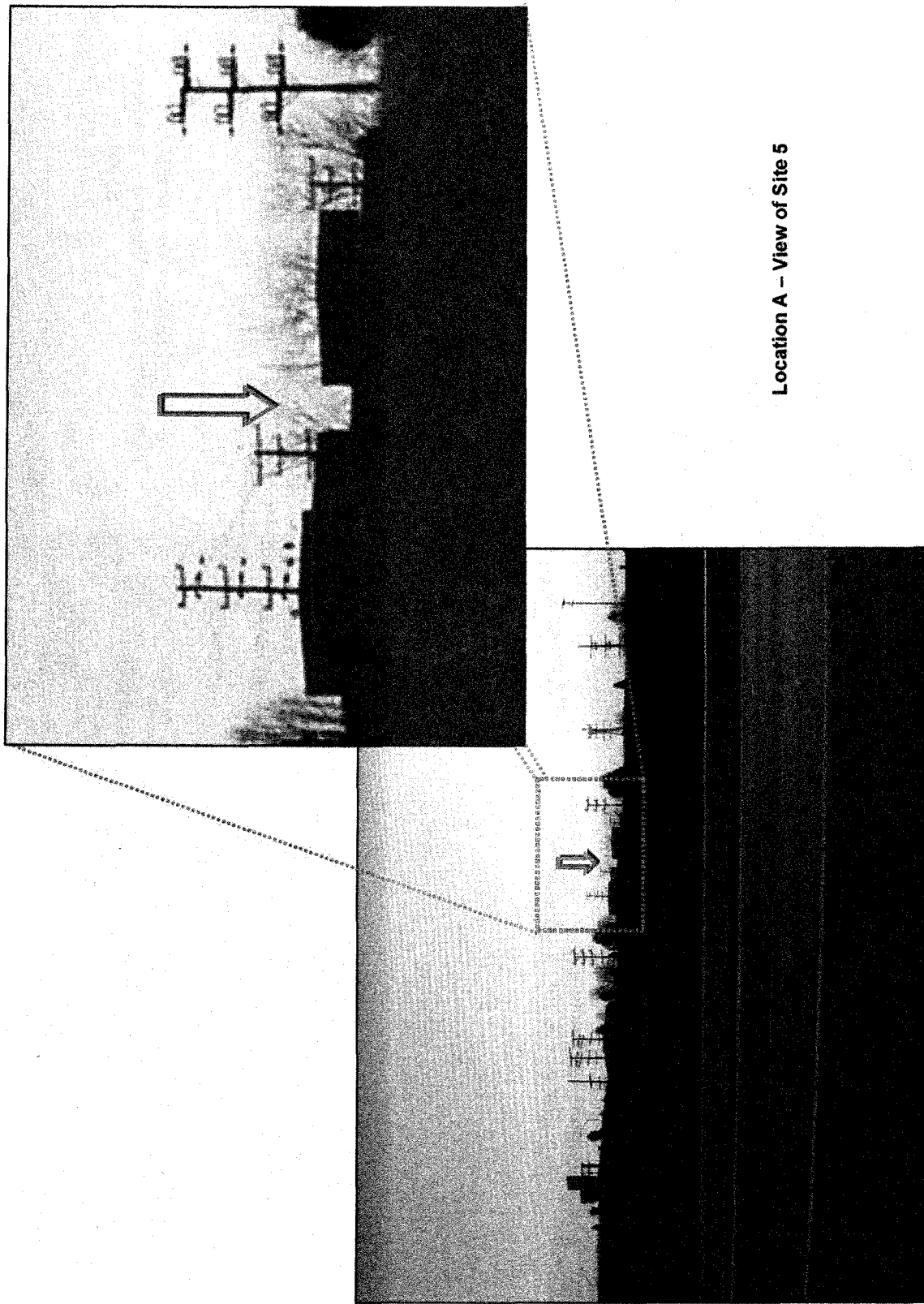


Source of Aerial Photography: NAIP 2007; Location Alternatives: eM Inc 2007; Water and Wetland Features: Fort Meade 2007

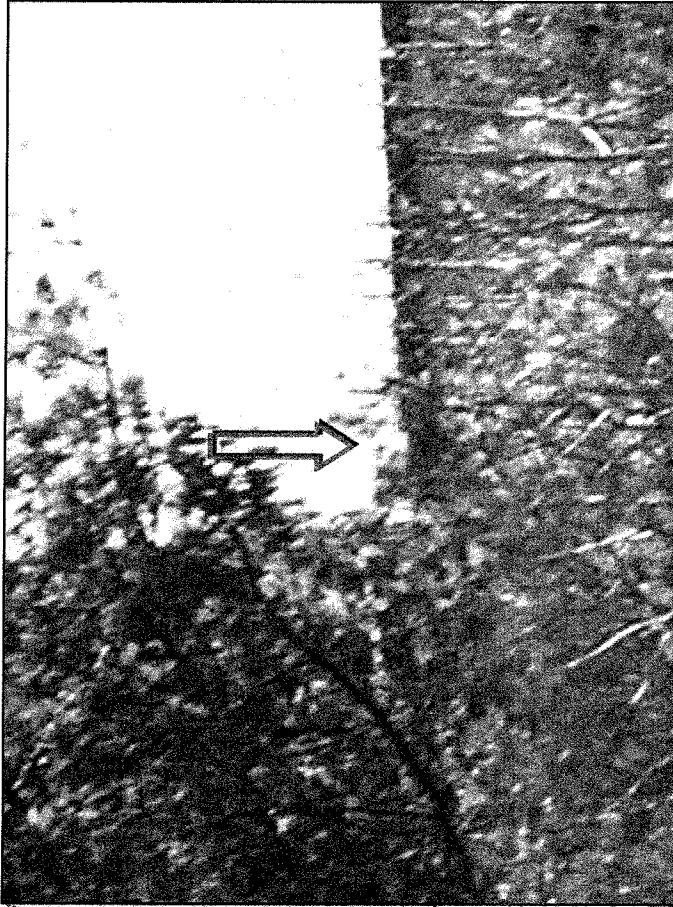
Balloon Positions and Viewing Locations, Ft. Meade, Maryland



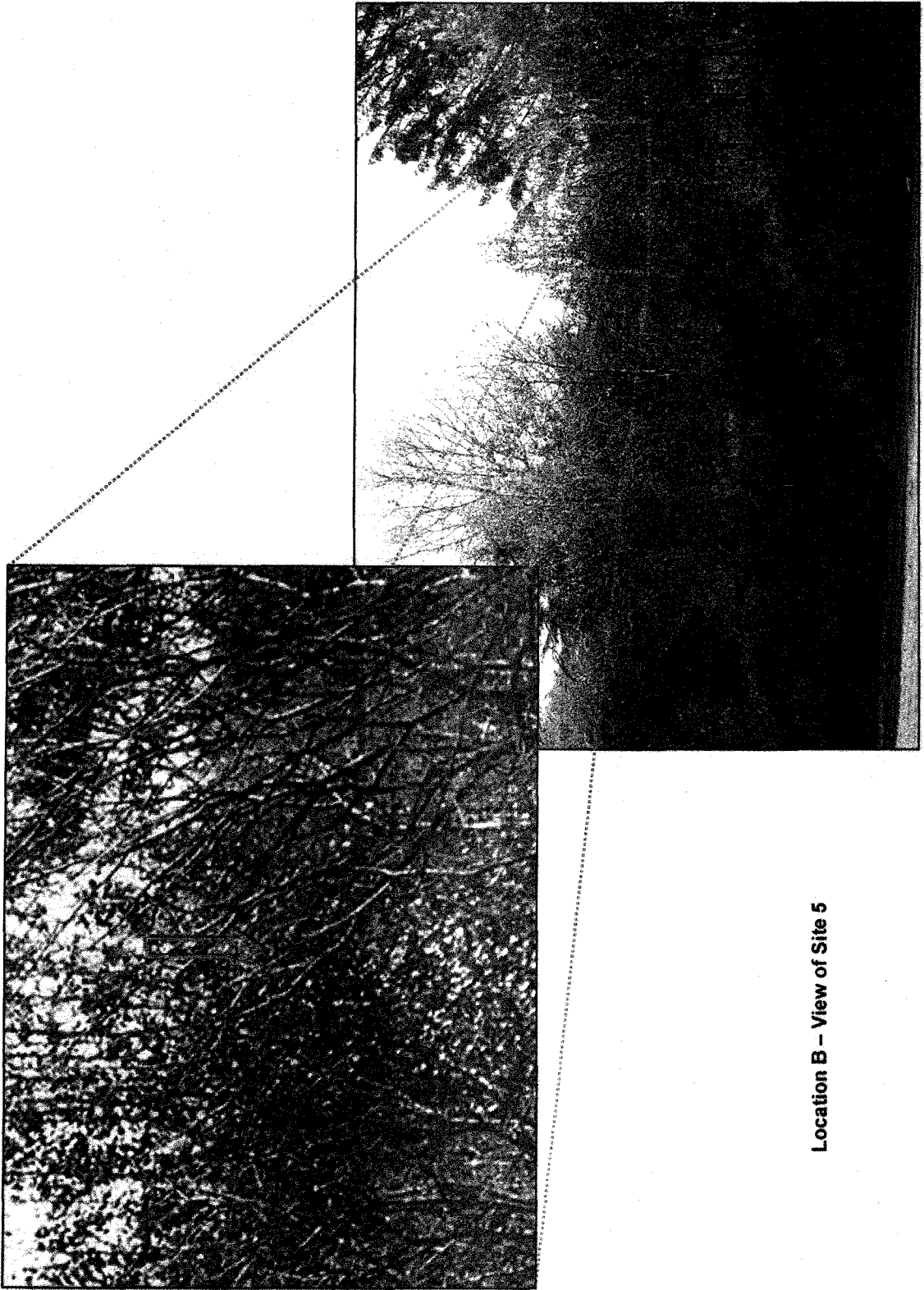
Location A -- View of Site 4



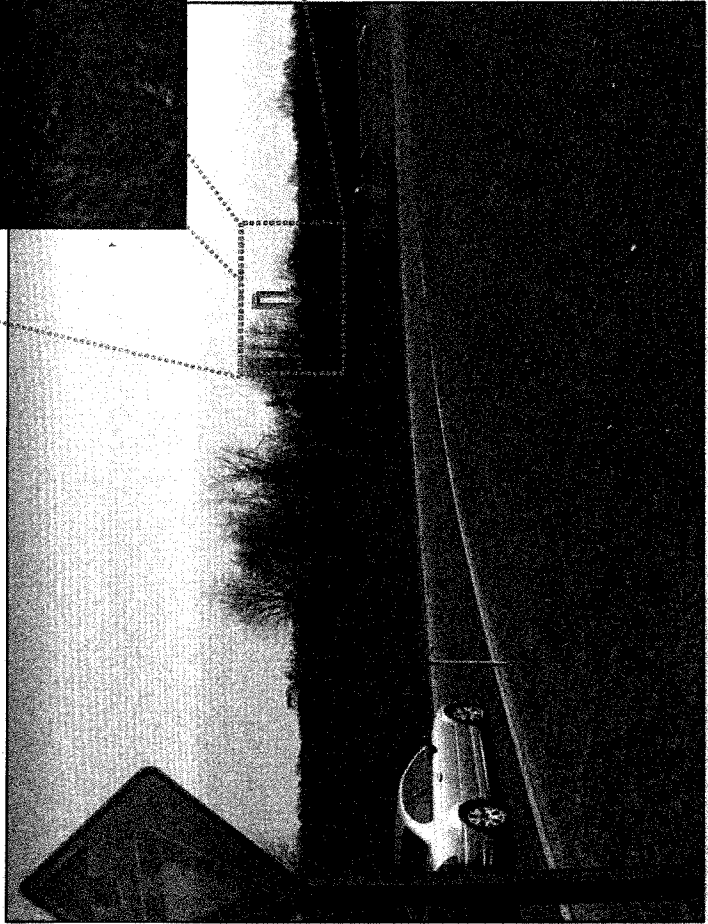
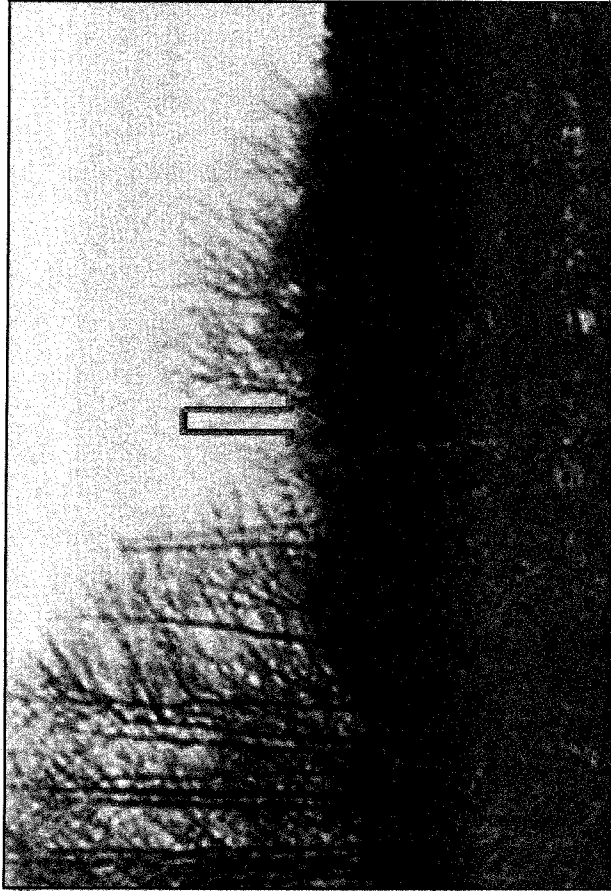
Location A -- View of Site 5



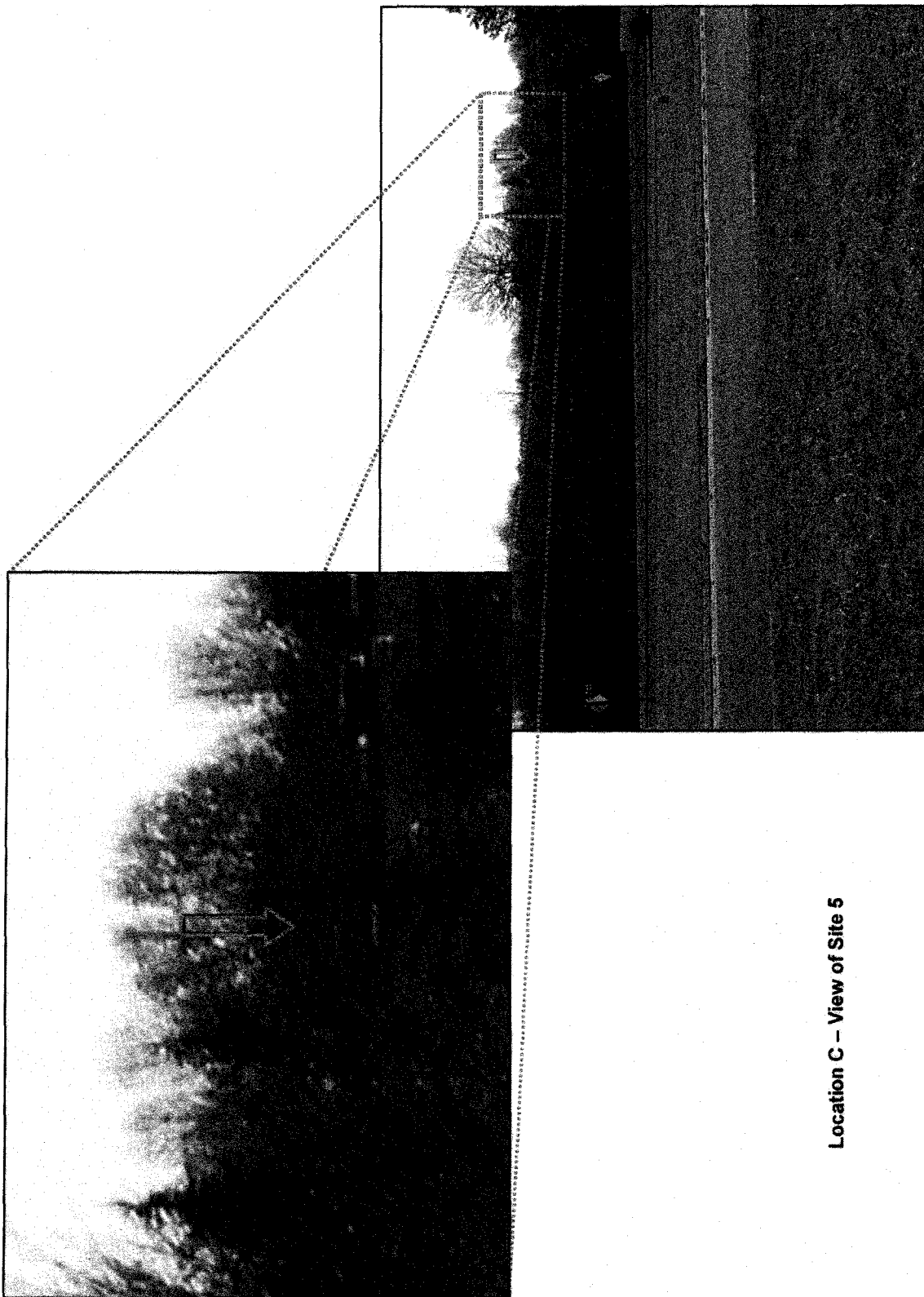
**Location B – View of Site 4
(National Cryptologic Museum in foreground)**



Location B - View of Site 5



Location C – View of Site 4

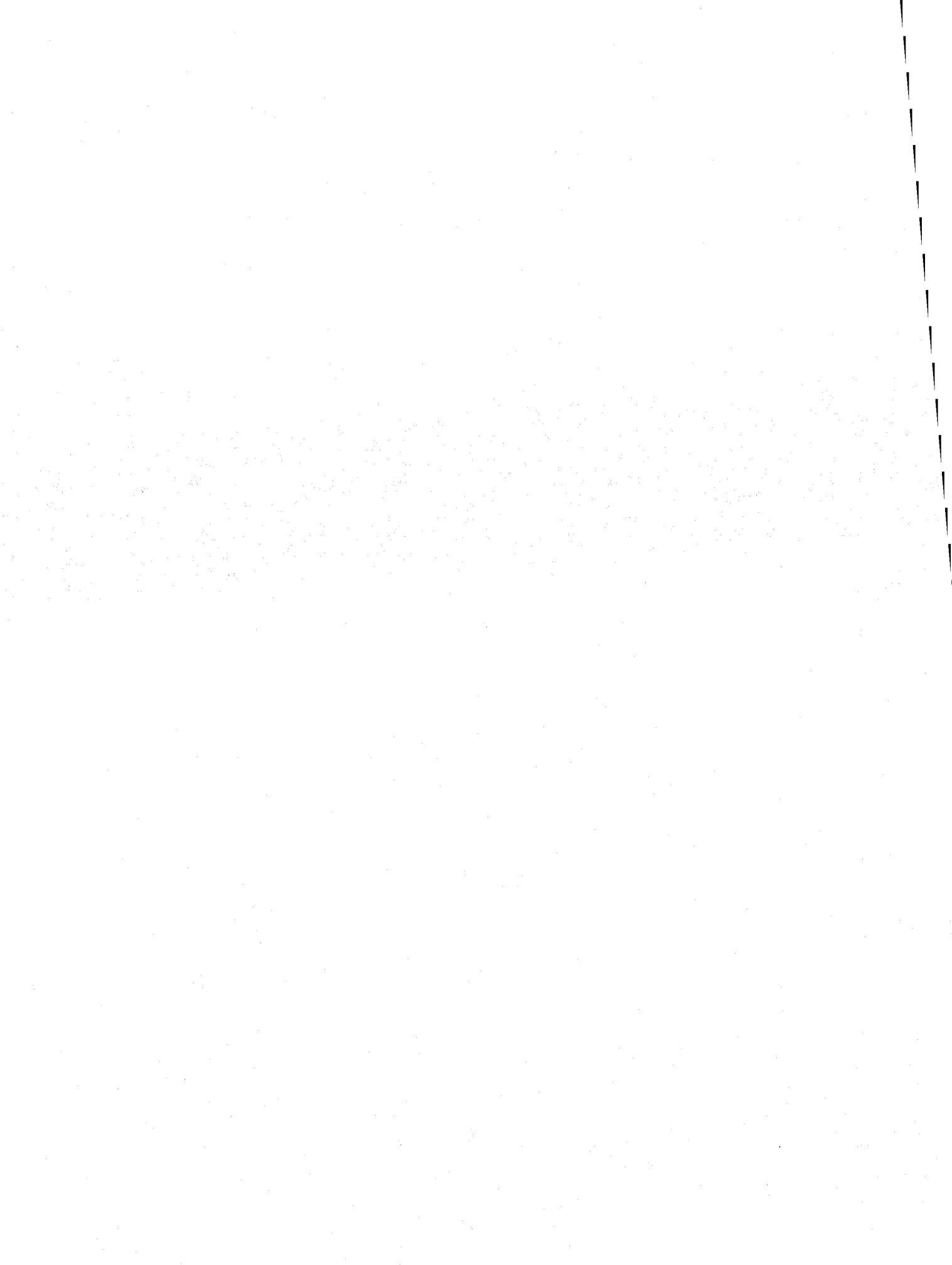


Location C – View of Site 5

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APPENDIX D

PARKING ALTERNATIVES ANALYSIS



Parking Alternatives Analysis

1 Identify sites on the NSA campus where replacement parking could be located.

The campus is largely developed, and there is a lack of undeveloped sites that could accommodate new parking lots. DOD identified two undeveloped sites that could be used for surface parking lots if they are not used for other facilities. In addition to surface parking lots, DOD identified six sites that could be used for a multistory parking garage if these sites are not used for other facilities.

DOD identified a total of eight sites—Sites 1, 2, 3, 4, 6, 7, 9, and 10. Sites 4 and 6 are considered as site alternatives for surface parking lots. Sites 1, 2, 3, 7, 9, and 10, which are currently used primarily as surface parking lots, are considered as parking alternatives for multistory parking structures.

2 Approximate how much land is available at each parking location alternative.

Site areas and existing parking areas were approximated using aerial photography and GIS. The area available for new parking areas is equal to the site area. Approximate parking area was used instead of exact number of parking spots to protect sensitive information. This is acceptable for the purposes of this EIS because the EIS is accomplished early in the planning process. It is assumed that a detailed traffic or transportation study to determine exact parking needs would be accomplished once a site is selected for a parking lot or structure.

Site No.	Site Area (ft ²)	Site Area (acres)	Existing Parking Area (acres)	Area Available for New Parking (acres)
1	317,364	7.3	7.3	7.3
2	176,569	4.1	4.1	4.1
3	244,389	5.6	5.6	5.6
4	263,760	6.1	0	6.1
5	58,873	1.4	0	0
6	111,833	2.6	0	2.6
7	232,260	5.3	1.3	5.3
8	77,408	1.8	0	0
9	267,488	6.1	6.1	6.1
10	207,233	4.8	2.2	4.8

3 Determine the amount of parking that would be lost as a result of the various combinations of site alternatives.

By determining how much parking would be displaced as a result of any given site option, it can be determined which parking alternatives could satisfy the required parking replacement area.

Proposed Action Option	Site No.	Parking Lost (acres)	Total Parking Needed (acres)	Possible Parking Mitigation Sites to be Explored
Option 1				
North Utility Plant	1	7.3		
South Generator Facility	7	1.3		
Central Boiler Plant	8	0		
			8.6	2,3,4,6,9,10
OR				
North Utility Plant	1	7.3		
South Generator Facility	5 or 6	0		
Central Boiler Plant	7	1.3		
			8.6	2,3,4,6,9,10
Option 2				
North Utility Plant	1	7.3		
South Generator Facility	5 or 6	0		
Central Boiler Plant	8	0		
			7.3	2,3,4,6,7,9,10
Option 3				
North Utility Plant	2	4.1		
South Generator Facility	7	1.3		
Central Boiler Plant	8	0		
			5.4	1,3,4,6,9,10
OR				
North Utility Plant	2	4.1		
South Generator Facility	5 or 6	0		
Central Boiler Plant	7	1.3		
			5.4	1,3,4,6,9,10
Option 4				
North Utility Plant	2	4.1		
South Generator Facility	5 or 6	0		
Central Boiler Plant	8	0		
			4.1	1,3,4,6,7,9,10

Proposed Action Option	Site No.	Parking Lost (acres)	Total Parking Needed (acres)	Possible Parking Mitigation Sites to be Explored
Option 5				
North Utility Plant	3	5.6		
South Generator Facility	7	1.3		
Central Boiler Plant	8	0		
			6.9	1,2,4,6,9,10
OR				
North Utility Plant	3	5.6		
South Generator Facility	5 or 6	0		
Central Boiler Plant	7	1.3		
			6.9	1,2,4,6,9,10
Option 6				
North Utility Plant	3	5.6		
South Generator Facility	5 or 6	0		
Central Boiler Plant	8	0		
			5.6	1,2,4,6,7,9,10
Option 7				
North Utility Plant	4	0		
South Generator Facility	7	1.3		
Central Boiler Plant	8	0		
			1.3	1,2,3,6,9,10
OR				
North Utility Plant	4	0		
South Generator Facility	5 or 6	0		
Central Boiler Plant	7	1.3		
			1.3	1,2,3,6,9,10
Option 8				
North Utility Plant	4	0		
South Generator Facility	5 or 6	0		
Central Boiler Plant	8	0		
			0	

4 Determine (a) if surface lots could be used to provide the required amount of parking, and (b) how many stories in structured parking would be required to provide an equivalent amount of parking to replace the parking lost for each option.

The estimates in this step are approximate. Since area was used to determine how much parking would be lost (as opposed to an exact number of parking spots), generalizations were used to determine the area of a parking structure that is equivalent to a surface parking lot. Parking structures generally require more surface area for ingress, egress, interior movement, stairwells, support columns, and the like than a surface parking lot. For the purposes of this EIS, it was assumed that 1 acre of surface parking is equal to 1.2 acres of structured parking. This surface area conversion was then used to estimate the number of stories that would make up the required replacement parking area. It is assumed that a detailed traffic or transportation study would be accomplished during the design phase of this project, so the actual dimensions of a parking structure would vary from these estimates.

Proposed Action Option	Site No.	Site Area Available (acres)	Total Surface Parking Area Available	Parking Surface Area/Site Area Ratio	Results
Option 1	<i>Need</i>	<i>8.6 acres of replacement surface parking needed</i>			
	<i>Or</i>	<i>10.3 acres of replacement equivalent of garage parking</i>			
	<i>Sites Available</i>	<i>2,3,4,6,9,10</i>			
	2	4.1	8.7	2.5	4 -story garage
	3	5.6		1.8	3 -story garage
	4	6.1		1	2 surface lots
	6	2.6		1	1
	9	6.1		1.7	3 -story garage
	10	4.8		2.1	4 -story garage
Option 2	<i>Need</i>	<i>7.3 acres of replacement surface parking needed</i>			
	<i>Or</i>	<i>8.8 acres of replacement equivalent of garage parking</i>			
	<i>Sites Available</i>	<i>2,3,4,6,7,9,10</i>			
	2	4.1	8.7	2.1	4 -story garage
	3	5.6		1.6	3 -story garage
	4	6.1		1	2 surface lots
	6	2.6		1	1
	7	5.3		1.7	3 -story garage
	9	6.1		1.4	3 -story garage
	10	4.8	1.8	3 -story garage	

Proposed Action Option	Site No.	Site Area Available (acres)	Total Surface Parking Area Available	Parking Surface Area/Site Area Ratio	Results
Option 3	<i>Need</i>	5.4	<i>acres of replacement surface parking needed</i>		
	<i>Or</i>	6.5	<i>acres of replacement equivalent of garage parking</i>		
	<i>Sites Available</i>	1,3,4,6,9,10			
	1	7.3		0.9	2 -story garage
	3	5.6		1.2	3 -story garage
	4	6.1	6.1		1 surface lot
	6	2.6			0 (not large enough)
Option 4	<i>Need</i>	4.1	<i>acres of replacement surface parking needed</i>		
	<i>Or</i>	4.9	<i>acres of replacement equivalent of garage parking</i>		
	<i>Sites Available</i>	1,3,4,6,7,9,10			
	1	7.3		0.7	2 -story garage
	3	5.6		0.9	2 -story garage
	4	6.1	6.1		1 surface lot
	6	2.6			0 (not large enough)
Option 5	<i>Need</i>	6.9	<i>acres of replacement surface parking needed</i>		
	<i>Or</i>	8.3	<i>acres of replacement equivalent of garage parking</i>		
	<i>Sites Available</i>	1,2,4,6,9,10			
	1	7.3		1.1	2 -story garage
	2	4.1		2.0	3 -story garage
	4	6.1	8.7		1 2 surface lots
	6	2.6			1
Option 6	<i>Need</i>	5.6	<i>acres of replacement surface parking needed</i>		
	<i>Or</i>	6.7	<i>acres of replacement equivalent of garage parking</i>		
	<i>Sites Available</i>	1,2,4,6,7,9,10			
	1	7.3		0.9	2 -story garage
	2	4.1		1.6	3 -story garage
	4	6.1	6.1		1 surface lot
	6	2.6			0 (not large enough)
7	5.3		1.3	3 -story garage	
9	6.1		1.1	3 -story garage	
10	4.8		1.4	3 -story garage	

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APPENDIX E

NOISE CALCULATIONS

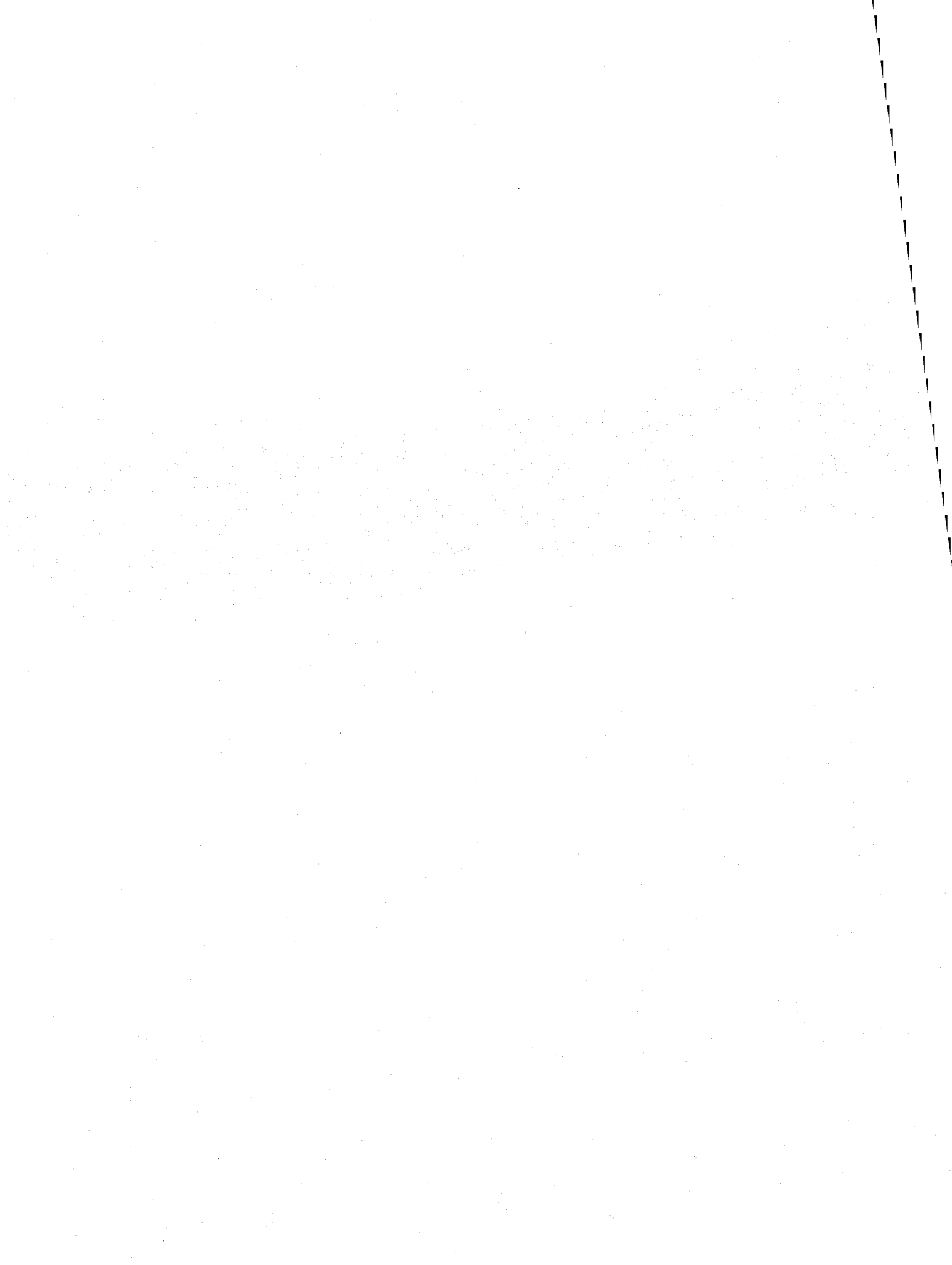


Table E-1. Nearby Noise Sensitive Areas and Estimated Existing Noise

Site	Closest Noise Sensitive Receiver (NSR)			Predominant Source of Noise	Estimated Existing Sound Levels (dBA)		
	Distance	Direction	Type		DNL	Leq	Leq
						(Daytime)	(Nighttime)
1	500 feet (152 meters)	E	Residential	Baltimore Washington Parkway	65	64	57
2	609 feet (187 meters)	NE	Residential	Baltimore Washington Parkway	65	64	57
3	1,805 feet (550 meters)	E	Residential	Baltimore Washington Parkway	65	64	57
4	1,024 feet (312 meters)	E	Residential	Baltimore Washington Parkway	65	64	57
5	705 feet (215 meters)	NE	Residential	Patuxent Freeway	60	58	52
6	371 feet (113 meters)	E	Residential	Canine and Emory Roads	55	53	47
7	864 feet (263 meters)	N	Residential	Canine and Emory Roads	55	53	47
8	900 feet (274 meters)	NW	Residential	Emory Road	55	53	47
9	1,050 feet (320 meters)	W	School	Patuxent Freeway	60	58	52
10	920 feet (280 meters)	N	Residential	Canine and Emory Roads	55	53	47

Source: ANSI 2003

Table E-2. Estimated Construction Noise vs. Distance

Distance (feet)		50	200	400	800	1,000	2,000	4,000	8,000
Sound Pressure Level (dBA)	Heavy Construction Equipment	89	77	71	65	63	57	51	45
	Pile Driver	91	79	73	67	65	59	53	47
	Dredger	85	73	67	61	59	53	47	41
	Generators	82	70	64	58	56	50	44	38

Source: USDOT 2006

Table E-3. Estimated Operational Noise from the Proposed North Utility Plant

Source	Octave Band Center Frequency, Hz									
	31.5	63	125	250	500	1,000	2,000	4,000	8,000	dB
Number of Units: 26										
100% Capacity										
Generator Exhaust (one unit @ 6.6 feet)	109	109	124	120	112	110	112	111	109	
Silencer	-2	-7	-15	-25	-25	-17	-15	-15	-20	
Exhaust After Silencer	107	102	109	95	87	93	97	96	89	
Power Watt Level	124	119	126	112	104	110	114	113	106	
<i>Total Sound Intensity (all units)</i>	<i>65.17</i>	<i>20.61</i>	<i>103.29</i>	<i>4.11</i>	<i>0.65</i>	<i>2.59</i>	<i>6.52</i>	<i>5.18</i>	<i>1.03</i>	
Total Power Watt Level	138	133	140	126	118	124	128	127	120	143
50% Capacity										
Generator Exhaust (one unit @ 6.6 feet)	103	103	118	114	106	104	106	105	103	
Silencer	-2	-7	-15	-25	-25	-17	-15	-15	-20	
Exhaust After Silencer	101	96	103	89	81	87	91	90	83	
Power Watt Level	118	113	120	106	98	104	108	107	100	
<i>Total Sound Intensity (all units)</i>	<i>16.37</i>	<i>5.18</i>	<i>25.95</i>	<i>1.03</i>	<i>0.16</i>	<i>0.65</i>	<i>1.64</i>	<i>1.30</i>	<i>0.26</i>	
Total Power Watt Level	132	127	134	120	112	118	122	121	114	137

Site 1	Feet	Meters								
Distance to NSR	500	152								
Hemispherical Spreading	-61	-61	-61	-61	-61	-61	-61	-61	-61	
Atmospheric Absorption	0	0	0	0	0	-1	-1	-4	-6	
Octave Band A-Weighted Correction	-39	-26	-16	-9	-3	0	1	1	-1	
A-Weighted Sound Level (100%)	39	47	64	56	54	63	67	64	52	71
										DNL 77
A-Weighted Sound Level (50%)	33	41	58	50	48	57	61	58	46	65
										DNL 71
Site 2	Feet	Meters								
Distance to NSR	609	186								
Hemispherical Spreading	-62	-62	-62	-62	-62	-62	-62	-62	-62	
Atmospheric Absorption	0	0	0	0	-1	-1	-2	-4	-8	
Octave Band A-Weighted Correction	-39	-26	-16	-9	-3	0	1	1	-1	
A-Weighted Sound Level (100%)	37	45	62	55	52	61	65	62	49	69
										DNL 75
A-Weighted Sound Level (50%)	31	39	56	49	46	55	59	56	43	63
										DNL 69

Source	Octave Band Center Frequency, Hz									
	31.5	63	125	250	500	1,000	2,000	4,000	8,000	dB
Site 3	Feet	Meters								
Distance to NSR	1,805	550								
Hemispherical Spreading	-72	-72	-72	-72	-72	-72	-72	-72	-72	
Atmospheric Absorption	0	0	0	-1	-2	-3	-5	-13	-23	
Octave Band A-Weighted Correction	-39	-26	-16	-9	-3	0	1	1	-1	
A-Weighted Sound Level (100%)	27	35	52	45	42	50	52	44	24	57
									DNL	63
A-Weighted Sound Level (50%)	21	29	46	39	36	44	46	38	18	51
									DNL	57
Site 4	Feet	Meters								
Distance to NSR	1,024	312								
Hemispherical Spreading	-67	-67	-67	-67	-67	-67	-67	-67	-67	
Atmospheric Absorption	0	0	0	0	-1	-2	-3	-7	-13	
Octave Band A-Weighted Correction	-39	-26	-16	-9	-3	0	1	1	-1	
A-Weighted Sound Level (100%)	32	40	57	50	47	56	60	54	39	64
									DNL	70
A-Weighted Sound Level (50%)	26	34	51	44	41	50	54	48	33	58
									DNL	64

Sources: Barron 2003 and Bies and Hanson 2003

Note: The analysis assumes casing and intake noise are completely controlled by the building superstructure. Industrial silencers are based on those common to the selected generator set. Overall, noise could vary somewhat based on the final design parameters.

Table E-4. Estimated Operational Noise from the Proposed South Generator Facility

Source	Octave Band Center Frequency, Hz									
	31.5	63	125	250	500	1,000	2,000	4,000	8,000	dB
Number of Units: 21										
100% Capacity										
Generator Exhaust (one unit @ 6.6 feet)	109	109	124	120	112	110	112	111	109	
Silencer	-2	-7	-15	-25	-25	-17	-15	-15	-20	
Exhaust After Silencer	107	102	109	95	87	93	97	96	89	
Power Watt Level	124	119	126	112	104	110	114	113	106	
<i>Total Sound Intensity (all units)</i>	52.64	16.65	83.43	3.32	0.53	2.10	5.26	4.18	0.83	
Total Power Watt Level	137	132	139	125	117	123	127	126	119	142
50% Capacity										
Generator Exhaust (one unit @6.6 feet)	103	103	118	114	106	104	106	105	103	
Silencer	-2	-7	-15	-25	-25	-17	-15	-15	-20	
Exhaust After Silencer	101	96	103	89	81	87	91	90	83	
Power Watt Level	118	113	120	106	98	104	108	107	100	
<i>Total Sound Intensity (all units)</i>	13.22	4.18	20.96	0.83	0.13	0.53	1.32	1.05	0.21	
Total Power Watt Level	131	126	133	119	111	117	121	120	113	136

Site 5	Feet	Meters								
Distance to NSR	705	215								
Hemispherical Spreading	-64	-64	-64	-64	-64	-64	-64	-64	-64	
Atmospheric Absorption	0	0	0	0	-1	-1	-2	-5	-9	
Octave Band A-Weighted Correction	-39	-26	-16	-9	-3	0	1	1	-1	
A-Weighted Sound Level (100%)	35	43	60	52	50	59	63	59	46	67
										DNL 73
A-Weighted Sound Level (50%)	29	37	54	46	44	53	57	53	40	61
										DNL 67
Site 6	Feet	Meters								
Distance to NSR	371	113								
Hemispherical Spreading	-58	-58	-58	-58	-58	-58	-58	-58	-58	
Atmospheric Absorption	0	0	0	0	0	-1	-1	-3	-5	
Octave Band A-Weighted Correction	-39	-26	-16	-9	-3	0	1	1	-1	
A-Weighted Sound Level (100%)	40	48	65	58	56	65	69	67	55	73
										DNL 80
A-Weighted Sound Level (50%)	34	42	59	52	50	59	63	61	49	67
										DNL 74

Source	Octave Band Center Frequency, Hz									
	31.5	63	125	250	500	1,000	2,000	4,000	8,000	dB
Site 10	Feet	Meters								
Distance to NSR	920	280								
Hemispherical Spreading	-66	-66	-66	-66	-66	-66	-66	-66	-66	
Atmospheric Absorption	0	0	0	0	-1	-1	-3	-6	-12	
Octave Band A-Weighted Correction	-39	-26	-16	-9	-3	0	1	1	-1	
A-Weighted Sound Level (100%)	32	40	57	50	48	56	60	55	41	64
									DNL	70
A-Weighted Sound Level (50%)	26	34	51	44	42	50	54	49	35	58
									DNL	64

Sources: Barron 2003 and Bies and Hanson 2003

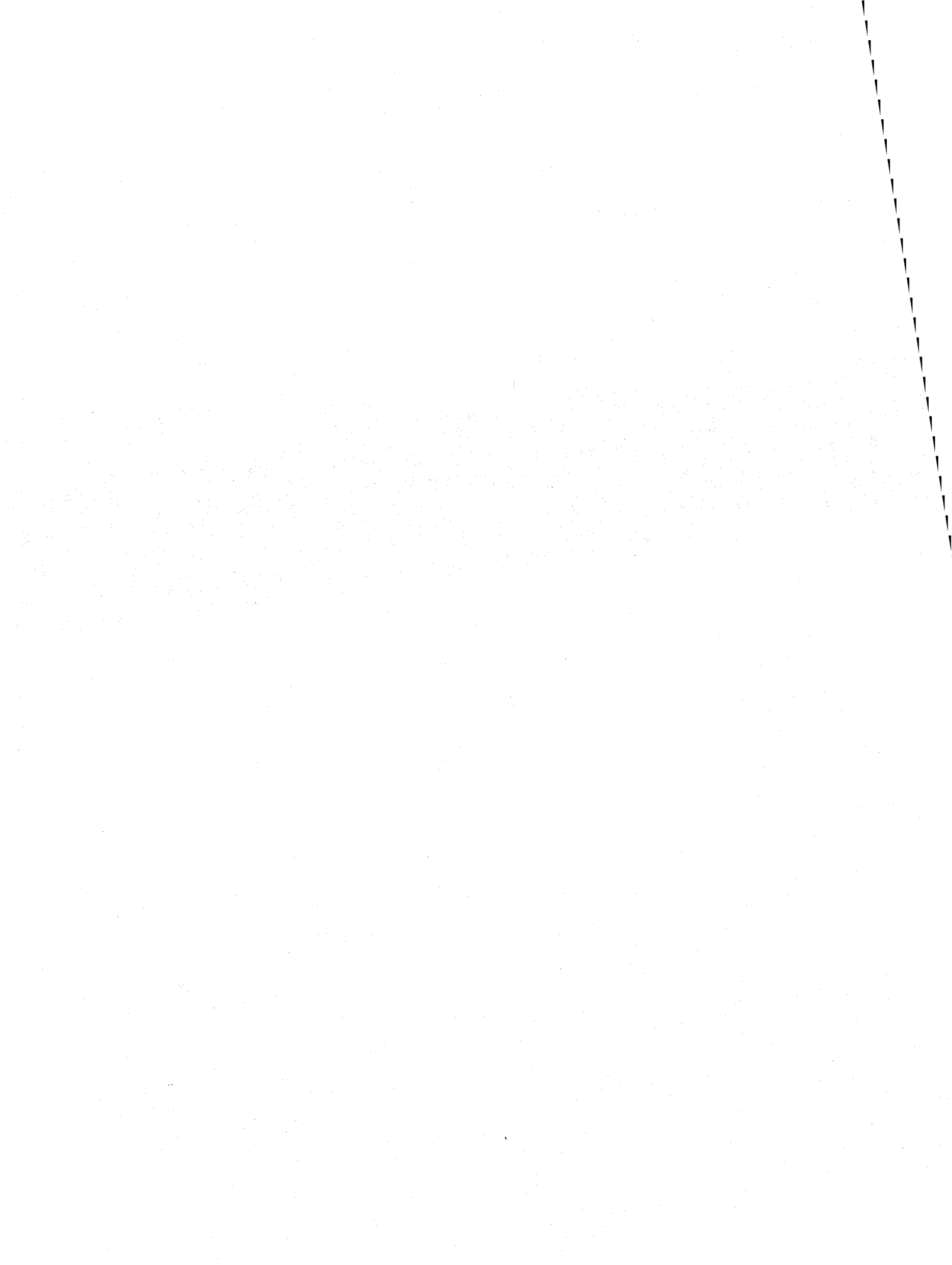
Note: The analysis assumes casing and intake noise are completely controlled by the building superstructure. Industrial silencers are based on those common to the selected generator set. Overall, noise could vary somewhat based on the final design parameters.

References

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- Bies and Hanson 2003 Bies, David A. and Colin H. Hanson. 2003. *Engineering Noise Control: Theory and Practice.* Third Edition. London and New York: Spon Press.
- USDOT 2006 U.S. Department of Transportation (USDOT), Federal Transit Administration. 2006. *Transit Noise and Vibration Assessment.* FTA-VA-90-1003-06. Prepared for the Federal Transit Administration by Harris Miller and Hanson, Inc. May 2006.

APPENDIX F

AIR QUALITY SUPPORTING DOCUMENTATION



F.1 Emissions Estimations and Methodology

The Department of Defense (DOD) has considered net emissions generated from all direct and indirect sources of air emissions that are reasonably foreseeable. *Direct emissions* are emissions that are caused or initiated by a Federal action and occur at the same time and place as the action. *Indirect emissions* are defined as reasonably foreseeable emissions that are caused by the action but might occur later in time or be farther removed in distance from the action itself, and that the Federal agency can practicably control. More specifically, project-related direct emissions would result from the following:

- *Demolition and construction activities:* the use of non-road equipment (e.g., bulldozers, backhoes), worker vehicles, the use of volatile organic compound (VOC) paints, paving off-gasses, and fugitive particles from surface disturbances
- *Operational activities:* Emergency generators and heating boilers not subject to major new source review, and the use of private motor vehicles

F.1.1 Demolition and Construction Emissions

Regardless of the site ultimately chosen, estimated actual construction emissions would be similar. When compared to other alternatives, the parking alternatives would include demolition of existing structures, additional excavation, and the fabrication of a structured parking garage. Only slight variation in the overall emissions would be expected with the different parking alternatives. The parking alternatives would be “worst-case,” and represent the upper bound of potential emissions associated with any of the alternatives within this Environmental Impact Statement (EIS). All direct and indirect emissions associated with the parking alternatives were estimated. The construction emissions were generated by estimating equipment use for utilities, site preparation, construction, and landscaping for the proposed facilities and storage tanks, including the following:

- Multideck Parking Garage (2010)
- South Generator Facility (2010)
- North Utility Plant – Utility Lines (2011)
- North Utility Plant – Substation (2011)
- North Utility Plant – Facility (2011)
- Central Boiler Plant – Paving (2013)
- Central Boiler Plant – Facility (2013)
- Central Boiler Plant – Demolition of existing structure (2013).

Demolition and construction emissions associated with the use of construction equipment (e.g., bulldozers, backhoes), worker vehicles, the use of VOC paints, paving off-gasses, and fugitive particles from surface disturbances are presented in **Table F1-1** for all the years of construction. This section also outlines all the calculations and assumptions made to derive these construction emissions estimations. The overall building size and construction phasing would be similar for all alternatives in this EIS. Therefore, all alternatives would have similar levels of emissions.

F.1.1.1 Heavy Construction Equipment

Pollutant emissions resulting from activities associated with constructing the proposed buildings, parking facilities, and roadways were estimated. The typical demolition and construction would involve such activities as demolition of existing buildings or structures, utility installation, road construction, site clearing and grading, building construction, and asphalt paving.

Table F1-1. Estimated Construction Emissions

Year	Construction Emissions (tpy)			
	NO _x	VOC	PM _{2.5}	SO ₂
2010	14.3	1.7	1.2	2.2
2011	6.7	0.8	0.8	1.1
2013	1.5	0.2	0.2	0.3
2010 Construction Emissions				
Heavy Equipment Emissions	14.1	1.1	1.0	2.2
Worker Trip Emissions	0.3	0.3	0.0	0.0
Architectural Coating Emissions	0.0	0.3	0.0	0.0
Fugitive Dust Emissions	0.0	0.0	0.2	0.0
Total	14.3	1.7	1.2	2.2
2011 Construction Emissions				
Heavy Equipment Emissions	6.6	0.5	0.6	1.1
Worker Trip Emissions	0.1	0.1	0.0	0.0
Architectural Coating Emissions	0.0	0.1	0.0	0.0
Fugitive Dust Emissions	0.0	0.0	0.2	0.0
Total	6.7	0.8	0.8	1.1
2013 Construction Emissions				
Heavy Equipment Emissions	1.4	0.1	0.2	0.3
Total	1.5	0.2	0.2	0.3

Demolition and construction would involve the use of various non-road equipment, power generators, and trucks. Pieces of equipment to be used for building construction include backhoes, loaders, excavators, air compressors, chain saws, chipping machines, dozers, cranes, pavers, graders, rollers, and heavy trucks. Information regarding the number of pieces and types of construction equipment to be used on the project, the schedule for deployment of equipment (monthly and annually), and the approximate daily operating time (including power level or usage factor) were estimated for each individual construction project based on a schedule of construction activity.

Emissions from construction activities were estimated based on the projected construction activity schedule, the number of vehicles/pieces of equipment, and vehicle/equipment utilization rates. Emissions factors for heavy-duty diesel equipment were obtained from the U.S. Environmental Protection Agency's *NONROAD2005 Emissions Model* (USEPA 2005a). The equipment and vehicle operation hours were estimated based on R.S.Means' *Building Cost Construction Data*, 64th annual edition (Waier 2006), and field experience from similar projects.

Emissions factors in grams of pollutant per hour were multiplied by the estimated running time to calculate total grams of pollutant from each piece of equipment. Finally, total grams of pollutant were converted to tons of pollutant. The following formula was used to calculate hourly emissions from non-road engine sources, including cranes, backhoes, and the like:

$$M_i = (N \times EF_i) \times AI$$

where: M_i = mass of emissions of i^{th} pollutant during inventory period

N = source population (units)

EF_i = average emissions of i^{th} pollutant per unit of use (e.g., grams per hour)

AI = anti-idling factor (0.98).

The total annual emissions levels are summarized in **Table F1-2**. Details of these calculations are included in **Tables F2-1** through **F2-3**.

Table F1-2. Estimated Annual Emissions from Construction and Demolition Equipment

Year	Annual Emissions (tpy)			
	NO _x	VOC	PM _{2.5}	SO ₂
2010	14.1	1.1	1.0	2.2
2011	6.6	0.5	0.6	1.1
2013	1.4	0.1	0.2	0.3
Total	22.1	1.8	1.8	3.6

Sources: SCAQMD 1993 and USEPA 1995

F.1.1.2 Construction Worker Vehicle Operations

Emissions due to construction worker vehicle use were included in the analysis. Emissions factors for motor vehicles were conservatively calculated using the U.S. Environmental Protection Agency's *MOBILE6.2*. These emissions factors were then multiplied by the vehicle operational hours to determine motor vehicle emissions. The analysis assumed conservatively that the worker's vehicle would drive 30 miles per day at an average speed of 35 miles per hour. The total annual emissions levels are summarized in **Table F1-3**. Details of these calculations are included in **Table F2-4**.

Table F1-3. Estimated Annual Emissions from Construction Worker Vehicles

Year	Annual Emissions (tpy)			
	NO _x	VOC	PM _{2.5}	SO ₂
2010	0.3	0.3	Less than 0.05	
2011	0.1	0.1		
2013	0.0	0.0		

Sources: SCAQMD 1993 and USEPA 2003

generators running on diesel for the maximum allowed 100 hours per year. Boiler emissions were calculated by assuming that all four boilers ran for 30 days on fuel oil and also ran on natural gas until a threshold that would require major source NNSR or PSD review was reached. The total volume of natural gas to reach the limit was calculated. Since the analysis assumed that the maximum emissions would be reached, this analysis is conservative. The total annual operational emissions levels are summarized in **Table F1-6** and details of the calculations are included in **Tables F2-7** through **F2-16**. It is expected that these emissions would occur immediately after the completion of the project. Maximum operational emissions would take place after the completion of construction. Emissions due to these sources would be the same for all facility location and parking alternatives.

Table F1-6. Total Estimated Actual Emissions For Project

	Estimated Actual Emissions (tpy)					
	NO _x	CO	VOC	PM ₁₀	PM _{2.5}	SO _x
Estimated Actual Generator Emissions	10.5	5.7	1.4	0.5	0.5	2.8
Total Estimated Actual Emissions – No Additional Controls on Boilers						
Boilers – Low NO _x (30 ppm)	20.5	22.9	2.6	2.1	2.0	3.9
Boilers – Low NO _x (20 ppm)	18.1	22.9	2.6	2.1	2.0	3.9
Estimated Actual Emissions – Selective Catalytic Reduction (SCR) on Boilers						
Boilers – Low NO _x (30 ppm)	16.6	8.3	1.6	0.7	0.7	2.9
Boilers – Low NO _x (20 ppm)	12.0	8.3	1.6	0.7	0.7	2.9

F.2 Emission Calculations

Tables F2-1 through F2-6 detail the project assumptions that were used to estimate the air emissions resulting from construction activities.

Table F2-1. Project Areas and Durations

Project Name	Year	Clearing Area (Acres)	Building Area (ft ²)	Paving (Acres)	Days of Clearing	Days of Building	Days of Paving
Parking Garage – Clearing and Grading	2010	4.6	0	0	230	0	0
Parking Garage – Construction	2010	0	100,000	0	0	230	0
Parking Garage – Paving	2010	0	0	1.15	0	0	18.9
South Generator Facility – Utility Lines	2010	1.15	0	0	75.62	0	0
South Generator Facility – Clearing and Grading	2010	1.84	0	0	230	0	0
South Generator Facility – Construction	2010	0	60,000	0	0	230	0
South Generator Facility – AST Construction	2010	0	8,000	0	0	230	0
South Generator Facility – Paving	2010	0	0	1.15	0	0	18.9
North Utility Plant – Utility Lines	2011	1.15	0	0	75.62	0	0
North Utility Plant – Substation, Clearing and Grading	2011	3.91	0	0	230	0	0
North Utility Plant – Substation, Construction	2011	0	45,000	0	0	230	0
North Utility Plant – Facility, Clearing and Grading	2011	0.92	0	0	230	0	0
North Utility Plant – Facility, Construction	2011	0	15,000	0	0	230	0
North Utility Plant – AST	2011	0	1,000	0	0	230	0
North Utility Plant – Paving	2011	0	0	1.15	0	0	18.9
Central Boiler Plant - Utility Lines	2013	0.99	0	0	75.62	0	0
Central Boiler Plant – Facility, Clearing and Grading	2013	0.83	0	0	230	0	0
Central Boiler Plant – Facility, Construction	2013	0	12,000	0	0	230	0
Central Boiler Plant – AST Construction	2013	0	6,000	0	0	113.42	0
Central Boiler Plant – Demolition	2013	0.46	0	0	113.42	0	0
Central Boiler Plant – Paving	2013	0	0	1.15	0	0	18.9

Table F2-2. Annual Equipment Use (Hours)

Equipment Type	2010	2011	2013	Total Hours
Generator Sets	2,383	982	241	3,606
Air Compressors	1,362	561	138	2,060
Pavers	30	15	15	61
Plate Compactors	2,741	1,131	284	4,156
Rollers	61	30	30	122
Scrapers	1,098	839	222	2,158
Cement & Mortar Mixers	4,766	1,964	482	7,212
Cranes	4,766	1,964	482	7,212
Graders	1,098	839	222	2,158
Off-highway Trucks	5,894	2,818	719	9,431
Tractors/Loaders/Backhoes	5,863	2,803	704	9,370
Crawler Tractor/Dozers	1,098	839	222	2,158

Table F2-3. Heavy Equipment Emissions (Tons)

Project	NO _x (tons)	PM _{2.5} (tons)	SO ₂ (tons)	VOC (tons)
Parking Garage – Clearing and Grading	2.654	0.180	0.192	0.473
Parking Garage – Construction	6.800	0.565	0.470	0.986
Parking Garage – Paving	0.031	0.002	0.002	0.005
South Generator Facility – Utility Lines	0.131	0.009	0.010	0.023
South Generator Facility – Clearing and Grading	1.062	0.072	0.077	0.189
South Generator Facility – Facility Construction	0.816	0.068	0.056	0.118
South Generator Facility – AST Construction	0.544	0.045	0.038	0.079
South Generator Facility – Paving	0.031	0.002	0.002	0.005
North Utility Plant – Utility Lines	0.120	0.008	0.011	0.023
North Utility Plant – Substation, Clearing and Grading	2.060	0.144	0.191	0.390
North Utility Plant – Substation, Construction	2.835	0.245	0.246	0.431
North Utility Plant – Facility, Clearing and Grading	0.485	0.034	0.045	0.092
North Utility Plant – Facility, Construction	0.945	0.082	0.082	0.144
North Utility Plant – AST	0.063	0.005	0.006	0.010
North Utility Plant – Paving	0.028	0.002	0.003	0.005
Central Boiler Plant – Utility Lines	0.099	0.008	0.015	0.021
Central Boiler Plant – Facility, Clearing and Grading	0.362	0.027	0.053	0.078
Central Boiler Plant – Facility, Construction	0.646	0.061	0.084	0.107
Central Boiler Plant – AST Construction	0.159	0.015	0.021	0.027
Central Boiler Plant – Demolition	0.099	0.008	0.015	0.021
Central Boiler Plant – Paving	0.024	0.002	0.003	0.005

Sources: USEPA 1995 and SCAQMD 1993

Table F2-4. Worker Trip Emissions (tons)

Project	VMT	EF NO _x (g/mile)	NO _x (tons)	EF PM _{2.5} (g/mile)	PM _{2.5} (tons)	EF SO ₂ (g/mile)	SO ₂ (tons)	EF VOC (g/mile)	VOC (tons)
Parking Garage – Clearing and Grading	39,675	0.32	0.01	0.01	0	0.01	0	0.29	0.01
Parking Garage – Construction	496,800	0.32	0.17	0.01	0.01	0.01	0.01	0.29	0.16
Parking Garage – Paving	815	0.32	0	0.01	0	0.01	0	0.29	0
South Generator Facility – Utility Lines	3,261	0.32	0	0.01	0	0.01	0	0.29	0
South Generator Facility – Clearing and Grading	15,870	0.32	0.01	0.01	0	0.01	0	0.29	0.01
South Generator Facility – Construction	198,720	0.32	0.07	0.01	0	0.01	0	0.29	0.06
South Generator Facility – AST Construction	39,744	0.32	0.01	0.01	0	0.01	0	0.29	0.01
South Generator Facility – Paving	815	0.32	0	0.01	0	0.01	0	0.29	0
North Utility Plant – Utility Lines	3,261	0.32	0	0.01	0	0.01	0	0.29	0
North Utility Plant – Substation, Clearing and Grading	33,724	0.32	0.01	0.01	0	0.01	0	0.29	0.01
North Utility Plant – Substation, Construction	223,560	0.32	0.08	0.01	0	0.01	0	0.29	0.07
North Utility Plant – Facility, Clearing and Grading	7,935	0.32	0	0.01	0	0.01	0	0.29	0
North Utility Plant – Facility, Construction	74,520	0.32	0.03	0.01	0	0.01	0	0.29	0.02
North Utility Plant – AST	4,968	0.32	0	0.01	0	0.01	0	0.29	0
North Utility Plant – Paving	815	0.32	0	0.01	0	0.01	0	0.29	0
Central Boiler Plant – Utility Lines	2,804	0.32	0	0.01	0	0.01	0	0.29	0
Central Boiler Plant – Facility, Clearing and Grading	7,142	0.32	0	0.01	0	0.01	0	0.29	0
Central Boiler Plant – Facility, Construction	59,616	0.32	0.02	0.01	0	0.01	0	0.29	0.02
Central Boiler Plant – AST Construction	14,700	0.32	0.01	0.01	0	0.01	0	0.29	0
Central Boiler Plant – Demolition	1,957	0.32	0	0.01	0	0.01	0	0.29	0
Central Boiler Plant – Paving	815	0.32	0	0.01	0	0.01	0	0.29	0

Sources: SCAQMD 1993 and USEPA 2003

Notes: VMT = Vehicle miles traveled, EF = Emissions factor, g/mile = grams per mile

Table F2-5. Architectural Coating Emissions (Paint)

Project	Floor Area (ft ²)	Wall Surface (ft ²)	EF VOC (lbs/1,000 ft ²)	VOC (tons)
Parking Garage Construction (2010)	100,000	200,000	55.5	0.21
South Generator Facility – Facility, Construction (2010)	60,000	80,000	55.5	0.08
South Generator Facility – AST Construction (2010)	8,000	16,000	55.5	0.02
North Utility Plant – Substation, Construction (2011)	45,000	90,000	55.5	0.09
North Utility Plant – Facility, Construction (2011)	60,000	80,000	55.5	0.08
Central Boiler Plant – Facility, Construction (2013)	12,000	24,000	55.5	0.03
Central Boiler Plant – AST Construction (2013)	6,000	12,000	55.5	0.01

Sources: SCAQMD 1993 and COMAR 26.11.35

Note: EF = Emissions factor

Table F2-6. Fugitive Dust Emissions

Project	PM ₁₀ /TSP	PM _{2.5} /PM ₁₀	EF TSP (lbs/acre/day)	Capture Fraction	Duration of Grading (days)	Cleared Area (acres)	PM _{2.5} (tons)
Parking Garage – Clearing and Grading (2010)	0.45	0.15	80	0.5	230	4.6	0.14
South Generator Facility – Utility Lines (2010)	0.45	0.15	80	0.5	75.62	1.15	0.01
South Generator Facility – Clearing and Grading (2010)	0.45	0.15	80	0.5	230	1.84	0.06
North Utility Plant – Utility Lines (2011)	0.45	0.15	80	0.5	75.62	1.15	0.01
North Utility Plant – Substation, Clearing and Grading (2011)	0.45	0.15	80	0.5	230	3.91	0.12
North Utility Plant – Facility, Clearing and Grading (2011)	0.45	0.15	80	0.5	230	0.92	0.03
Central Boiler Plant – Utility Lines (2013)	0.45	0.15	80	0.5	75.62	0.99	0.01
Central Boiler Plant – Facility, Clearing and Grading (2013)	0.45	0.15	80	0.5	230	0.83	0.03
Central Boiler Plant – Demolition (2013)	0.45	0.15	80	0.5	113.42	0.46	0.01

Sources: USEPA 1995 and USEPA 2005a

Note: EF = Emissions factor

Tables F2-7 through F2-12 detail the project assumptions that were used to estimate the air emissions resulting from operation of the proposed generators and boilers.

Table F2-7. Generator Information

Generator Size	2,500 kW
Generator Size	3,353 hp
Maximum Hours of Operation (PTE) ¹	100 Hours
Actual Hours of Operation (PTE)	80 Hours

Notes: kW = kilowatts, hp = horsepower, PTE = Potential to Emit

Table F2-8. Manufacturer Nominal Emission Rates

CAT2500 Tier 2	Emissions Rate (g/hpxhr)
NO _x	5.05
CO	0.41
VOC	0.1
PM	0.036
SO _x *	0.2

Notes: * Source: USAF 1999

Assumes sulfur content (S) = 0.05 wt%

g/hpxhr = grams per horsepower times hour

Table F2-9. Generator Potential to Emit

Source	Total Capacity	Number of Generators	Potential to Emit (tpy)				
	(kW)	(units)	NO _x	CO	VOC	PM	SO _x
Potential to Emit – No Controls							
North Utility Plant	65,000	26	48.5	3.9	1.0	0.3	1.9
South Generator Facility	52,500	21	39.2	3.2	0.8	0.3	1.6

Source	Potential to Emit (tpy)				
	NO _x	CO	VOC	PM	SO _x
Potential to Emit – Selective Catalytic Reduction (SCR)					
SCR Efficiency: 85% *					
North Generator Facility	28.0	15.2	3.7	1.3	7.4
South Generator Facility	19.6	10.6	2.6	0.9	5.2

Note: * An efficiency of 85% was used to provide a conservative estimate of NO_x reductions, based on USEPA's AP-42.

Table F2-10. Estimated Actual Emissions – Generators

Source	Estimated Actual Emissions (tpy)				
	NO _x	CO	VOC	PM	SO _x
Total Hours: 80					
North Generator Facility	5.8	3.2	0.8	0.3	1.5
South Generator Facility	4.7	2.5	0.6	0.2	1.2
Total Estimated Actual Emissions	10.5	5.7	1.4	0.5	2.8

Table F2-11. General Boiler Information

Number of Boilers	4	Units
Boiler Capacity	98,000,000	BTU/hr
Total Heat Input	392,000,000	BTU/hr
Heat Content for Natural Gas	1,020	Btu/cf
Heat Content for No. 2 Fuel Oil	140,000	Btu/gal
Days Using Oil	30	Days
Natural Gas Consumption		
Total Hours	8,040	Hours
Total Heat	3.15E+12	Btu
Total Volume	3,089,882,353	cf
Fuel Oil Consumption		
Total Hours	720	Hours
Total Heat	2.82E+11	Btu
Total Volume	2,016,000	gallons

Table F2-12. Boiler Emissions Factors

Low NO_x Emissions Factors		
	Low NO _x Boilers	
	(30 ppm)	(20 ppm)
Natural Gas NO _x (ppm)	30	20
Emission Factor (lb/10 ⁶ cubic feet)	36	24

AP-42 Emissions Factors						
	NO _x	CO	VOC	PM ₁₀	PM _{2.5}	SO _x
Natural Gas (lb/10 ⁶ cubic feet) ¹	190	84	5.5	7.6	7.6	0.6
Number 2 Fuel Oil (lb/10 ³ gallon) ²	20	5	0.556	1	0.25	7.05

Source: USEPA 1995

Notes:

¹ Natural gas emissions factors for all pollutants except NO_x were obtained from USEPA's AP-42, Section 1.4 for low NO_x burners assumed lb/MMBtu = ppm / 850.

² No. 2 fuel oil emissions factors for all pollutants were obtained from USEPA's AP-42, Section 1.3. Sulfur content = 0.05 wt%.

Tables F2-13 through F2-15 detail the actual air emissions for existing generators and boilers that would be replaced as a result of this project. Table F2-16 summarizes the total operational emissions, including the reductions in emissions from the removal of the existing generators and boilers.

Table F2-13. Boiler Potential to Emit

	Potential to Emit (tpy)					
	NO _x	CO	VOC	PM ₁₀	PM _{2.5}	SO _x
Natural Gas						
Potential Consumption: 3,089,882,353 (cubic feet/year)						
Boilers – Uncontrolled	293.54	129.78	8.50	11.74	11.74	0.93
Boilers – Low NO _x (30 ppm)	55.62	129.78	8.50	11.74	11.74	0.93
Boilers – Low NO _x (20 ppm)	37.08	129.78	8.50	11.74	11.74	0.93
No. 2 Fuel Oil						
Potential Consumption: 2,016,000 (gallons/year)						
Boilers – Uncontrolled	20.16	5.04	0.56	1.01	0.25	7.11
Potential to Emit – No Controls						
Boilers – Uncontrolled	313.70	134.82	9.06	12.75	11.99	8.03
Boilers – Low NO _x (30 ppm)	75.78	134.82	9.06	12.75	11.99	8.03
Boilers – Low NO _x (20 ppm)	57.24	134.82	9.06	12.75	11.99	8.03
Potential to Emit – Selective Catalytic Reduction (SCR)						
SCR Efficiency: 85% *						
Boilers – Uncontrolled	47.05	134.82	9.06	12.75	11.99	8.03
Boilers – Low NO _x (30 ppm)	11.37	134.82	9.06	12.75	11.99	8.03
Boilers – Low NO _x (20 ppm)	8.59	134.82	9.06	12.75	11.99	8.03

Note: * An efficiency of 85% was used to provide a conservative estimate of NO_x reductions, based on USEPA's AP-42.

Source: USEPA 1995

Table F2-14. Boiler Estimated Actual Emissions

	Estimated Actual Emissions (tpy)					
	NO _x	CO	VOC	PM ₁₀	PM _{2.5}	SO _x
Natural Gas						
Estimated Consumption: 393,366,353 (cubic feet/year)						
Boilers – Uncontrolled	37.37	16.52	1.08	1.49	1.49	0.12
Boilers – Low NO _x (30 ppm)	7.08	16.52	1.08	1.49	1.49	0.12
Boilers – Low NO _x (20 ppm)	4.72	16.52	1.08	1.49	1.49	0.12
No. 2 Fuel Oil						
Estimated Consumption: 284,353 (gallon/year)						
Boilers – Uncontrolled	2.84	0.71	0.08	0.14	0.04	1.00
Estimated Actual Emissions - No Additional Controls						
Boilers – Uncontrolled	40.21	17.23	1.16	1.64	1.53	1.12
Boilers – Low NO _x (30 ppm)	9.92	17.23	1.16	1.64	1.53	1.12
Boilers – Low NO _x (20 ppm)	7.56	17.23	1.16	1.64	1.53	1.12
Estimated Actual Emissions – Selective Catalytic Reduction (SCR)						
SCR Efficiency: 85% *						
Boilers – Uncontrolled	6.03	2.58	0.17	0.25	0.23	0.17
Boilers – Low NO _x (30 ppm)	1.49	2.58	0.17	0.25	0.23	0.17
Boilers – Low NO _x (20 ppm)	1.13	2.58	0.17	0.25	0.23	0.17

Note: * An efficiency of 85% was used to provide a conservative estimate of NO_x reductions, based on USEPA's AP-42.
Source: USEPA 1995

Table F2-15. Five-Year Actual Emissions – Existing Boilers

Year	NO _x (tpy)	CO (tpy)	VOC (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)	SO _x (tpy)
2007	30.61	0.77	1.16	1.76	1.76	7.01
2006	29.85	0.74	1.11	1.69	1.69	7.44
2005	31.00	0.40	1.30	1.70	1.70	4.90
2004	31.00	0.40	1.10	1.70	1.70	3.10
2003	35.60	0.40	1.50	2.00	2.00	10.20
Average	31.61	0.54	1.23	1.77	1.77	6.53

Table F2-16. Five-Year Actual Emissions – Existing Generators

Year	NO_x (tpy)	CO (tpy)	VOC (tpy)	PM₁₀ (tpy)	PM_{2.5} (tpy)	SO_x (tpy)
2007	4.28	1.58	0.22	0.22	0.22	0.62
2006	4.49	1.62	0.24	0.21	0.21	0.90
2005	5.30	1.50	0.17	0.14	0.14	0.64
2004	4.30	1.30	0.22	0.21	0.21	0.67
2003	3.36	0.86	0.13	0.07	0.07	0.38
Average	4.35	1.37	0.20	0.17	0.17	0.64

Table F2-17. Total Actual Operational Emissions

Equipment	NO_x (tpy)	CO (tpy)	VOC (tpy)	PM₁₀ (tpy)	PM_{2.5} (tpy)	SO_x (tpy)
Proposed Generator Emissions	10.5	5.7	1.4	0.5	0.5	2.8
Proposed Boiler Emissions	9.9	17.2	1.2	1.6	1.5	1.1
Existing Generators (Removal)	-4.3	-1.4	-0.2	-0.2	-0.2	-0.6
Existing Boilers (Removal)	-31.6	-1.2	-6.5	-0.5	-0.5	-1.8
Change in Operational Emissions	-15.5	20.3	-4.2	1.4	1.3	1.5

F.3 Draft Record of Non-Applicability

**Draft Record of Non-Applicability (RONA)
to the General Conformity Rule
for the Proposed Utilities Upgrade Project at
Fort Meade, Maryland**

[insert date]

Air emissions were estimated for the construction and operation of the proposed construction and operation of the proposed North Utilities Plant, South Generator Facility, and Central Boiler Plant at the National Securities Agency (NSA) campus on Fort Meade, Maryland. Emissions from land clearing and grading, construction of buildings, associated parking areas and structures, and support utility upgrades were assessed. Operational emissions from emergency generators, and boilers were assessed. 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 annual direct and indirect emissions from this action have been estimated at 17.5 tons NO_x, 2.2 tons VOCs, 1.9 tons PM_{2.5}, and 3.1 tons SO₂ per year, which would be below the conformity threshold values of 50 tons VOCs and 100 tons for SO₂, PM_{2.5}, and NO_x, and would not be *regionally significant*.

Supporting documentation and emission estimates:

- Are Attached
- Appear in the NEPA Documentation
- Other (Not Necessary)

SIGNATURE

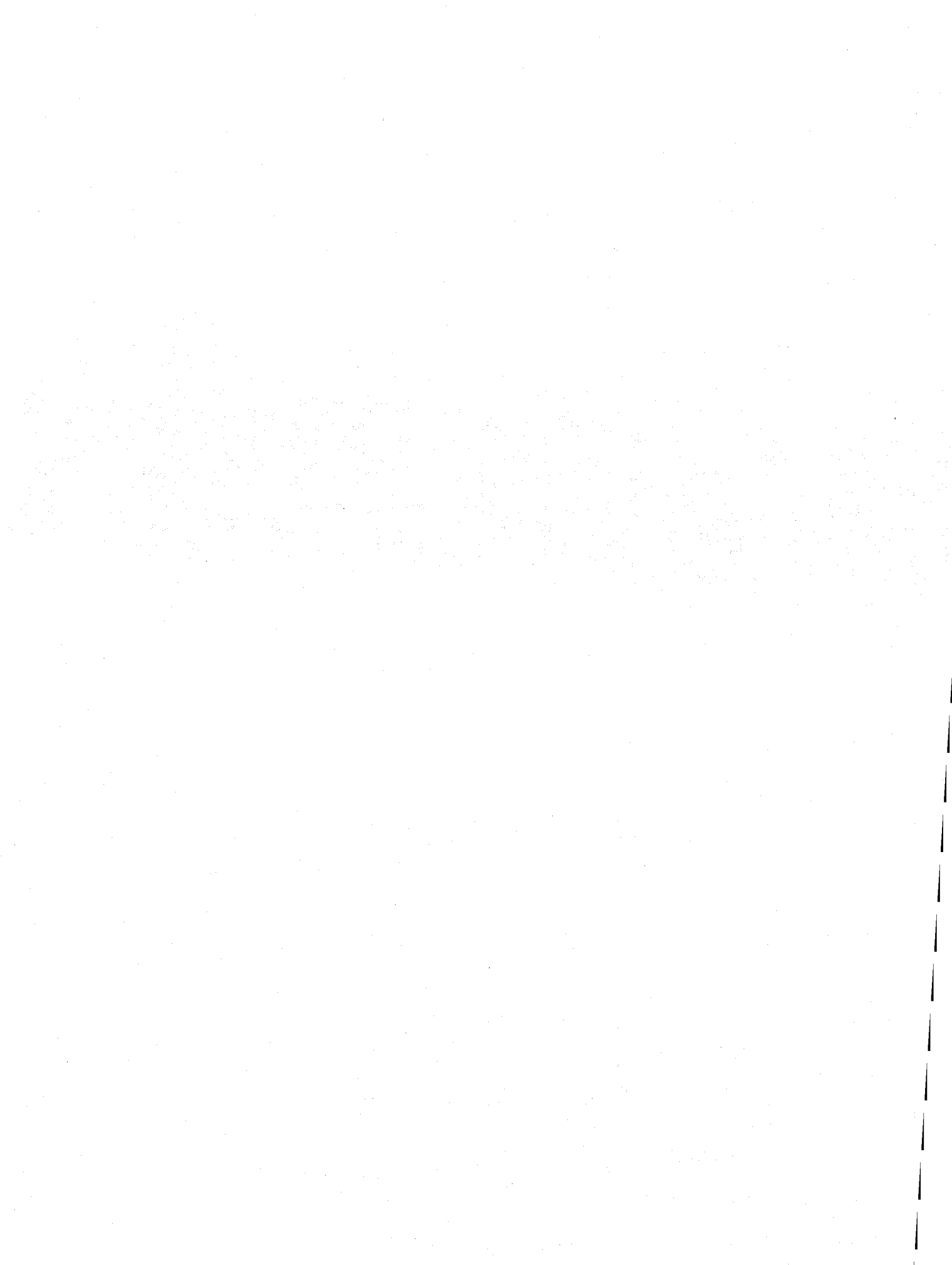
TITLE
National Security Agency

F.4 References

- SCAQMD 1993 South Coast Air Quality Management District (SCAQMD). 1993. *CEQA Air Quality Handbook*. April 1993.
- USAF 1999 U.S. Air Force (USAF). 1999. *Air Emissions Inventory Guidance Document for Stationary Sources at Air Force Installations*. IERA-RS-BR-SR-1999-001. Prepared for the Institute for Environment, Safety, and Occupational Risk Analysis, Risk Analysis Directorate, Environmental Analysis Division. May 1999.
- USEPA 1995 U.S. Environmental Protection Agency (USEPA). 1995. *AP 42, Fifth Edition, Volume I: Stationary Point and Area Sources*. Available online: <http://www.epa.gov/ttn/chieff/ap42/>. Accessed February 13, 2008.
- USEPA 2003 USEPA. 2003. *User's Guide to MOBILE6.1 and MOBILE6.2: Mobile Source Emission Factor Model*. EPA420-R-03-010. August 2003.
- USEPA 2005a USEPA. 2005. *User's Guide for the Final NONROAD2005 Model*. EPA420-R-05-013. Prepared with assistance from Cimulus, Inc. and ENVIRON International Corp. December 2005.
- USEPA 2005b USEPA. 2005. *Methodology to Estimate the Transportable Fraction (TF) of Fugitive Dust Emissions for Regional and Urban Scale Air Quality Analyses*. Prepared by Thomas G. Pace (USEPA). August 3, 2005 Revision.
- Waier 2006 Waier, Phillip R, ed. 2006. *Building Cost Construction Data*. 64th Annual Edition. Kingston, Massachusetts: R.S. Means Construction Publishers and Consultants.

APPENDIX G

AGENCY CONSULTATION





NATIONAL SECURITY AGENCY
CENTRAL SECURITY SERVICE

FORT GEORGE G. MEADE, MARYLAND 20755-6000

November 13, 2007

NOV 20 2007

Mr. J. Rodney Little, SHPO
Maryland Historical Trust
100 Community Place, 3rd Floor
Crownsville, MD 21032-2023

200704046

F
NSA
BLH

Dear Mr. Little,

AN Co.

The National Security Agency (NSA) plans to prepare an Environmental Impact Statement (EIS) for the modernization of various utility systems on the NSA campus at Fort Meade, Maryland. The Proposed Action would include construction or replacement of utility plants, relocation of parking, and relocation and installation of underground and overhead utility lines. The range of reasonable alternatives for the siting new plants, utility lines, and parking is still being defined, but it is anticipated that ground-disturbing activities would be limited to the NSA campus on Fort Meade and would not require exterior alterations or demolition of existing buildings.

On 20 September 2007, a representative of our consulting firm, engineering-environmental Management, Inc. (e²M), visited the Maryland Historical Trust (MHT) to conduct a site file and literature search for the NSA campus at Fort Meade. Research included the following:

- Review of the Laurel, Maryland 7.5-minute USGS topographic quadrangle maps on which the MHT records the locations of previous cultural resources surveys and identified cultural resources.
- Review of the MHT geographic information system (GIS) for data on the NSA-leased parcel.
- Review of previous cultural resources survey reports.

Review of the topographic quadrangles and the MHT GIS found no previously recorded archaeological sites or architectural resources within the boundaries of the NSA campus. One archaeological site (AN 914) had been previously recorded to the north of the NSA campus outside of Fort Meade and 40 sites have been recorded within Fort Meade to the east of the NSA campus. The Fort Meade Historic District lies to the east of the NSA campus. Cultural resources investigations conducted within, or inclusive of, the NSA campus included two Cultural Resources Management Plans (CRMP) (McAloon et al. 1994; USACE 2001) and two archaeological surveys (Hornum et al. 1995; Hunter 1995).

The 1994 CRMP for Fort Meade (McAloon et al. 1994) included an archaeological predictive model completed for the entire installation, inclusive of the NSA campus. The model was based on the results of a pedestrian survey, review of cartographic and archival materials, and limited field testing (McAloon et al. 1994:85). Areas of previous disturbance were defined through a review of construction plans, map data, and master planning documents; the delineation of disturbance areas was then checked through pedestrian reconnaissance and vegetation studies (McAloon et al. 1994: Volume 3).

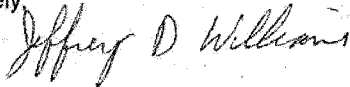
#1A BL 12/5/07

In this model, the NSA campus was categorized primarily as previously disturbed with no further archaeological potential. The exception to this was a narrow strip of land on the northwest edge of the NSA campus that was designated as "Disturbed High Potential" due to its location along a channelized stream. This area was not subjected to testing during the CRMP investigation (McAloon et al. 1994); however, subsequent surveys (Hornum et al. 1995; Hunter 1998) included testing of this area. Results of these latter testing investigations were negative for archaeological materials.

Based on the findings of the 1994 predictive model completed by Fort Meade (McAloon et al. 1994) and the negative results of the subsequent survey efforts in the northwestern corner of the NSA campus, we have determined that the proposed project will have no effect on archaeological resources. No buildings within the NSA campus will be altered as part of the project. Accordingly, the proposed project also will have no effect on architectural resources.

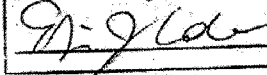
The proposed project constitutes an undertaking under Section 106 of the National Historic Preservation Act. The NSA has determined that the proposed undertaking will have no effect on historic properties, based on the rationale provided in the preceding paragraphs. The NSA invites the Maryland Historical Trust to concur or comment on this determination. Please provide a response to this letter by January 4, 2008. Thank you in advance for your attention to this matter.

Sincerely,



Jeffrey D. Williams
Senior Environmental Engineer

The Maryland Historical Trust has determined
that there are no historic properties affected by
this undertaking.

 Date 12/5/07

References Cited:

McAloon, Hugh B., John J. Mintz, Martha R. Williams, William T. Dod, Kathleen F. Child, Leo P. Hirrel, and Kathryn M. Kuranda, 1994. *Fort George G. Meade Cultural Resources Management Plan*. Report prepared for the U.S. Army Corps of Engineers, Baltimore District by R. Christopher Goodwin & Associates, Inc.

Hornum, Michael B., Kathryn J. Saul, and Thomas F. Majarov, 1995. *Phase I Archeological Survey of Approximately 2,210 Acres at Fort George G. Meade, Anne Arundel County, Maryland* (Technical Appendix to the Fort Meade Cultural Resources Management Plan). Report prepared for the U.S. Army Corps of Engineers, Baltimore District by R. Christopher Goodwin & Associates, Inc.

Hunter, Richard, 1998. *Supplementary Phase I Archeological Investigation, Fort George G. Meade, Anne Arundel County, Maryland*. Report prepared for the U.S. Army Corps of Engineers, Baltimore District, and Fort George G. Meade ANME-PWE by Hunter Research, Inc.



Maryland Department of Planning
Maryland Historical Trust

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

Richard Eberhart Hall
Secretary
Matthew J. Power
Deputy Secretary

MD 20080212-0094

February 25, 2008

Mr. Jeffrey Williams
Environmental and Safety Services
National Security Agency
9800 Savage Road, Suite 6404
Fort Meade, MD 20755-6248

Re: MHT Review of Proposed Utilities Upgrade Project, Fort George G. Meade, Anne Arundel County,
Maryland

Dear Mr. Williams:

On February 14, 2008, the Maryland Historical Trust (MHT) received a submittal announcing the intent of the National Security Agency (NSA) to prepare an Environmental Impact Statement (EIS) for power and utility upgrades at Fort George G. Meade, Maryland. We will be reviewing the proposed undertaking with respect to potential effects on historic properties in accordance with Section 106 of the National Historic Preservation Act and would like to offer the following preliminary comments.

As noted in Fort Meade's *Integrated Cultural Resources Management Plan* (2001), several significant architectural resources and archeological sites have been identified within the boundaries of the installation. We are therefore requesting that we be provided with the materials listed below so that we may continue our review of the proposed undertaking.

- A map illustrating the precise boundaries of the project area, including the locations of the proposed generator facilities, electrical substations, boiler plant, chiller plant, ancillary facilities, and parking areas.
- Drawings and/or a written scope of work illustrating any plans to construct, demolish, or remodel buildings or other structures.
- Photographs (print or digital) of the project sites, including images of all buildings and structures that may be affected by the project.

We look forward to receiving these materials, when they become available, and to further coordination with NSA and Fort Meade as project planning proceeds. If you have any questions or require further information, please do not hesitate to contact either Jonathan Sager (for inquiries regarding the historic built environment) at 410-514-7636 or jsager@mdp.state.md.us or Dixie Henry (for inquiries regarding archeological resources) at 410-514-7638 or dhenry@mdp.state.md.us.

Sincerely,

Dixie L. Henry
Preservation Officer
Maryland Historical Trust

DLH/200800442

cc: Kathleen Hutson (NSA)
Bob Rosenbush (MDP)

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NATIONAL SECURITY AGENCY
FORT GEORGE G. MEADE, MARYLAND 20755-6000

June 6, 2008
ME6-08-E29

Ms. Dixie L. Henry
Maryland Historical Trust
100 Community Place
Crownsville, MD 21032-2023

**Reference: Section 106 Responsibilities for the Utilities Upgrade Project at Fort Meade,
Maryland**


Dear Ms. Henry:

Thank you for your 25 February 2008 letter in response to our Notice of Intent to prepare an Environmental Impact Statement (EIS) for the Utilities Upgrade Project at Fort Meade, Maryland. You requested additional clarification information, and the NSA intends to fulfill its responsibilities under preservation law insofar as possible to ensure a smooth Section 106 review of the undertaking by your agency.

Following completion of an archival and site file search, NSA submitted a letter to MHT dated 13 November 2007, requesting concurrence that there would be no adverse effect to historic properties; MHT concurred on 5 December 2007 (enclosed). However, the EIS process is in the preliminary stages of preparation at this time, and alternatives and thus locations of proposed facilities have not yet been finalized. We do not envision impacts on buildings but will consult with MHT to determine the appropriate path forward should any potentially historic buildings become an issue. Please note that some aspects and details of the study may be classified, such as certain maps and photographs. The EIS will present the Proposed Action and Alternatives in enough detail to describe the types and magnitudes of environmental impacts while also ensuring that sensitive information is safeguarded under the requirements of the National Security Act of 1947 (50 U.S.C. Section 401) and EO 12333, *United States Intelligence Activities*, as amended by EO 13355, *Strengthened Management of the Intelligence Community*.

We look forward to continuing coordination as project planning proceeds.

Sincerely,


Jeffrey Williams
Senior Environmental Engineer

Attachment: Letter to MHT dated 13 November 2007, with concurrence on 5 December 2007

NATIONAL SECURITY AGENCY
CENTRAL SECURITY SERVICE
FIVE SEVENTH & PENNSYLVANIA AVENUES
WASHINGTON, DC 20521-0001
November 13, 2007



Mr. J. Rodney Libs, SHPO
Maryland Historical Trust
100 Constitution Plaza, 3rd Floor
Crownsville, MD 21032-2022

000704046

NSA
BLH

Dear Mr. Libs,

AM Co.

The National Security Agency (NSA) wishes to procure an Environmental Impact Statement (EIS) for the modernization of various utility systems on the NSA campus at Fort Meade, Maryland. The Proposed Action would include construction or replacement of utility plants, installation of parking, and relocation and installation of underground and overhead utility lines. The range of reasonable alternatives for the siting new plants, utility lines, and parking is still being defined, but it is anticipated that ground-disturbing activities would be limited to the NSA campus on Fort Meade and would not require extensive alterations or demolition of existing buildings.

On 20 September 2007, a representative of our consulting firm, engineering-architectural-landscape Management, Inc. (EM), visited the Maryland Historical Trust (MHT) to conduct a site file and literature search for the NSA campus at Fort Meade. Research included the following:

- Review of the Laurel, Maryland 7.5-minute USGS topographic quadrangle maps on which the MHT records the locations of previous cultural resources surveys and identified cultural resources.
- Review of the MHT geographic information system (GIS) for data on the NSA-related parcels.
- Review of previous cultural resources survey reports.

Review of the topographic quadrangles and the MHT GIS found no previously recorded archaeological sites or archaeological resources within the boundaries of the NSA campus. One archaeological site (AM 814) had been previously recorded to the north of the NSA campus outside of Fort Meade and 40 sites have been recorded within Fort Meade to the east of the NSA campus. The Fort Meade Historic District lies to the east of the NSA campus. Cultural resources investigations conducted within, or inclusive of, the NSA campus included two Cultural Resources Management Plans (CRMP) (McAlone et al. 1994; Hunter 2007) and two archaeological surveys (Hornum et al. 1992; Hunter 1984).

The 1984 CRMP for Fort Meade (McAlone et al. 1984) included an archaeological predictive model completed for the entire installation, inclusive of the NSA campus. The model was based on the results of a pedestrian survey, review of cartographic and archival materials, and limited field testing (McAlone et al. 1984:95). Areas of previous disturbance were defined through a review of construction plans, map data, and master planning documents; the delineation of disturbance areas was then checked through pedestrian reconnaissance and vegetation studies (McAlone et al. 1984: Volume 3).

Maryland Historic Trust
November 13, 2007
Page 2

In this model, the NSA campus was categorized primarily as previously disturbed with no further archaeological potential. The exception to this was a narrow strip of land on the northwest edge of the NSA campus that was designated as "Disturbed High Potential" due to its location along a railroad track. This area was not suspected to be tested during the CRMP investigation (McAlone et al. 1984). However, subsequent surveys (Hornum et al. 1992; Hunter 1984) included levels of testing. Results of these later testing investigations were negative for archaeological resources.

Based on the findings of the 1984 predictive model completed by Fort Meade (McAlone et al. 1984) and the negative results of the subsequent survey efforts in the northwestern corner of the NSA campus, we have determined that the proposed project will have no effect on cultural resources. No testing within the NSA campus will be advised as part of the project. Accordingly, the proposed project also will have no effect on archaeological resources.

The proposed project constitutes an undertaking under Section 108 of the National Historic Preservation Act. The NSA has determined that the proposed undertaking will have no effect on historic properties, based on the rationale provided in the preceding paragraphs. The NSA invites the Maryland Historical Trust to concur or comment on this determination. Please provide a response to this letter by January 4, 2008. Thank you in advance for your attention to this matter.

Sincerely,

Jeffrey D. Williams

Special Environmental Engineer

The Maryland Historical Trust has determined that there are no historic properties affected by this undertaking.
J.D.W. Date: 12/13/07

Reference: Chief

McAlone, Wade B., John S. Mero, Martha P. Williams, William T. Dock, Kathleen E. Ciba, Lee P. Hurst, and Kathryn M. Koranda. 1984. Fort George G. Meade Cultural Resources Management Plan. Report prepared for the U.S. Army Corps of Engineers, Baltimore District by R. Christopher Goodwin & Associates, Inc.

Hornum, Melissa B., Kelley J. Sisk, and Thomas F. Majaron. 1992. Phase I Archaeological Survey of the NSA Campus at Fort George G. Meade, Anne Arundel County, Maryland (Technical Appendix to Fort Meade Cultural Resources Management Plan). Report prepared for the U.S. Army Corps of Engineers, Baltimore District by R. Christopher Goodwin & Associates, Inc.

Hunter, Richard. 1988. Supplementary Phase I Archaeological Investigation, Fort George G. Meade, Anne Arundel County, Maryland. Report prepared for the U.S. Army Corps of Engineers, Baltimore District, and Fort George G. Meade ANMRE-PWE by Hunter Research, Inc.



Maryland Department of Planning

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

Richard Eberhart Hall
Secretary
Matthew J. Power
Deputy Secretary

October 15, 2008

Mr. Jeffrey D. Williams
Senior Environmental Engineer, Office of Occupational Health, Environmental, and Safety Services
National Security Agency
Suite 6404
9800 Savage Road
Fort Meade, MD 20755

STATE CLEARINGHOUSE REVIEW PROCESS

State Application Identifier: MD20081015-1003

Reply Due Date: 11/28/2008

Project Description: Draft Environmental Impact Statement: Proposed Utilities Upgrade Project at Fort George G. Meade:
proposed construction of infrastructure to provide redundancy of electrical power: consider six (6) alternatives

Project Location: County of Anne Arundel

Clearinghouse Contact: Bob Rosenbush

Dear Mr. Williams:

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

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

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

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

Sincerely,

Linda C. Janey, J.D., Assistant Secretary
for Clearinghouse and Communications

LCJ:BR

08-1003_NRR.NEW.doc

301 West Preston Street • Suite 1101 • Baltimore, Maryland 21201-2305
Telephone: 410.767.4500 • Fax: 410.767.4480 • Toll Free: 1.877.767.6272 • TTY Users: Maryland Relay
Internet: www.MDP.state.md.us

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

November 18, 2008

Mr. Jeffrey D. Williams
Utilities Upgrades EIS
c/o e2m, Suite 200
2751 Prosperity Avenue
Fairfax, VA 22031

Re: Fort George G. Meade Utilities Upgrade Project, Proposes to Construct and Operate (1) North Utility Plant (2) South Generator Facility and (3) Central Boiler Plant, Fort George M. Meade, MD (CEQ 20080421)

Dear Mr. Williams:

In accordance with the National Environmental Policy Act (NEPA) of 1969 and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement for the Fort George G. Meade Utilities Upgrade Project. As a result of this review, EPA has assigned this Draft Environmental Impact Statement (DEIS) a rating of EC-2 (Environmental Concerns/Insufficient Information), which indicates that we have environmental concerns regarding the proposal and that there is insufficient information in the document to fully assess the environmental impacts of this project. A copy of the EPA's rating system is enclosed for your information.

The purpose of the proposed action is to upgrade and modernize aging utilities infrastructure through renovation, modernization, and replacement on the National Security Agency (NSA) campus at Fort George G. Meade to support the capabilities of the existing NSA campus for current and future missions. The proposed action would include the construction and operation of a North Utility Plant, a South Generator Facility, a Central Boiler Plant, and associated infrastructure.

The North Utility Plant is proposed to provide electrical power with redundancy, and would consist of a North Electrical Substation, a North Generator Facility, transmission lines, and distribution lines. The North Electrical Substation would provide 50 megavolt-amperes (MVA) of power to the NSA campus. The North Generator Facility would provide 60 to 65 megawatts (MW) of emergency electrical power generated by diesel engine/generator sets. The proposed generator sets would have a selective catalytic reduction (SCR) system to control air pollutant emissions, and each generator would be equipped with an exhaust stack no taller than 35 feet above ground level. The North Generator Facility would also include aboveground storage tanks (ASTs) for diesel fuel, waste oil, and urea. The total building footprint for the North Utility Plant would be approximately 105,000 square feet (2.4 acres). Installation of electrical distribution lines would disturb up to 90,000 square feet of area. Installation of transmissions lines, which could be either overhead or underground, could disturb up to 53,000 square feet of area. It is assumed that all internal campus utility lines would be installed in

previously disturbed areas. The Department of Defense (DOD) has identified an undeveloped wooded area (Site 4) as the preferred location of this facility. Three other location alternatives are also considered (Sites 1, 2, and 3).

The proposed South Generator Facility is intended to provide emergency electrical power to supplement an existing South Utility Plant. As part of this project, an emergency generator facility currently capable of generating 17.6 MW of electrical power would be replaced with a larger generator facility that is capable of generating 47 to 52 MW of emergency electrical power using diesel engine/generator sets. The proposed generator sets would have an SCR system to control air pollutant emissions, and each generator would be equipped with an exhaust stack no taller than 35 feet above ground level. The South Generator Facility would also include ASTs for diesel fuel, waste oil, and urea. The total building footprint would be 60,000 square feet (1.4 acres). For the proposed South Generator Facility, DOD identified the existing site (Site 5) as the preferred site. Two other location alternatives were identified (Sites 6 and 7).

The Central Boiler Plant would replace an existing outdated boiler plant. Four vintage boilers would be replaced with four comparably sized modern dual-fuel boilers with a total heat input rating of 392 million British thermal units per hour (MMBtu/hr). Similar to the existing boiler plant, the proposed Central Boiler Plant would operate primarily using natural gas with No. 2 fuel oil backup. Two modern ASTs for No. 2 fuel oil, with associated spill containment storage, are proposed to replace the existing ASTs. The footprint for the Central Boiler Plant would be approximately 18,000 square feet (0.4 acres). For the new Central Boiler Plant, DOD has identified the existing site of the boiler plant and ASTs as the preferred alternative (Site 8) and one alternative location (Site 7).

Because the NSA campus has limited land that can be developed, construction of new facilities could result in the displacement of some campus parking, depending on the facility alternative selected. Preliminary screening resulted in two primary parking alternatives: construction of one or more surface lots or construction of a parking garage. The alternatives evaluated as representative of the range of alternatives include the construction of surface parking lots at undeveloped sites (Sites 4 and 6), construction of a parking garage at Site 3, construction of a parking garage at Site 9, and construction of a parking garage at Site 10.

In general, EPA supports the purpose and need for the proposed action in the Draft EIS. EPA understands the need to upgrade utilities necessary to support the existing campus and the mission going forward. However, based on our review of the DEIS, EPA has environmental concerns with the impact to the loss of forested areas on the Forest Conservation Area if Site 4 and Site 6 were selected to meet facility/parking needs. EPA offers the following specific comments for your consideration in development of the Final EIS for this project.

Alternatives

North Utility Plant: DOD's preferred alternative for the North Utility Plant is Site 4. Site 4 is an undeveloped parcel of land, approximately 6.1 acres, within a Forest Conservation Area. Development of the of the North Utility Plant would result in the removal of approximately 4 acres of trees and require a new access road which would most likely cross a perennial stream. DOD is aware that Site 4 would have a greater potential for environmental impacts if the North Utility Plant were constructed there; however, there would be no loss of parking.

Some discrepancies may need to be clarified. In particular, the actual space needed for the North Utility Plant is determined to be approximately 2.4 acres. However, development for the plant at Site 4 would result in the removal of 4 acres of trees. It is not clear why more trees are designated for removal than what is needed for the plant. Is it the need for the access road that would require additional tree removal? To have a better understanding, this should be addressed in the FEIS.

As noted on page 2-15, Site 4 is "outside of the NSA-controlled perimeter." Thus, Site 4, the preferred alternative, does not meet the first of DOD's evaluation criteria for the facility alternatives as listed on page 2-11. The first criteria listed states that the site be "within the NSA campus." The boundary for the NSA campus should be depicted on a map.

Also, when comparing alternatives, the other sites appear to be less environmentally intrusive and can possibly provide opportunities to meet both facility and parking needs. For instance, the current use of Site 1 is a parking lot which consists of approximately 7.3 acres. If the North Utility Plant requires approximately 2.4 acres, then a portion of the parking lot can be preserved or redesigned. It is stated on page 2-12 that, "If Site 1 were selected as the location for the North Utility Plant, it is likely that the site design and engineering would be able to minimize the amount of actual parking area lost so that some parking could still be used." "However, for the purposes of this EIS, it is assumed that construction of the North Utility Plant would result in the loss of 7.3 acres of parking." The latter statement contradicts the previous statement as only some parking would be lost. Also, it seems that there is a possibility that through efficient design, the total parking spaces currently available may not be completely lost or if there is a loss it may not be too significant.

The other alternative site for the North Utility Plant is Site 3. Site 3 is approximately 5.6 acres and is currently used as an overflow parking lot. It is not certain whether this site is inside or outside of the NSA-controlled perimeter; it is alongside of Site 4 (southwest). Thus, it is unclear whether this site meets DOD's evaluation criteria for the facility. Again, it is inaccurate to state that if this site is selected it would then mean a loss of 4.1 acres of parking. The North Utility Plant requires approximately 2.4 acres which would enable the retention of some parking.

Parking Alternative: It is EPA's understanding, that if Site 4 is used for the North Utility Plant, then there would be no parking loss. It is the assumption of DOD that, if an alternate site is selected, then there would be a loss of parking. However, without a design plan the number of parking spaces lost cannot be determined and the opportunity for a more efficient design that would alleviate the potential loss cannot be assessed.

DOD designates Sites 4 and 6 as potential surface parking lot alternatives. These areas are undeveloped forested areas. The loss of 8.7 acres would remove potential wildlife habitat and could degrade some remaining and scenic and natural qualities of the NSA campus. Increased impervious surface could impact storm water velocity as well as water quality and groundwater recharge. The impact to this resource appears to be far greater than the other proposed sites (Sites 3, 9 and 10).

Wetlands

As stated on page 3-19, "An unnamed perennial stream of natural origin flows along the southeastern boundary of Site 4 and the forest stand; this stream also traverses past the southern boundary of Site 3 and continues on to the southwest." Page 4-33 states, "A stream-crossing for the site access and transmissions lines would likely be required to access the North Utility Plant at Site 4." DOD states, "If Site 4 is chosen as the location, jurisdictional wetland delineation would be required to determine if there are wetlands associated with the stream that flows along the southeastern boundary of the forest stand." To more accurately determine the degree of environmental impact, wetlands should be identified and delineated to determine impacts from the proposed action prior to the selection of a site. Wetlands present on, or immediately surrounding the site should be delineated according to the 1989 Federal Manual for Identifying and Delineating Jurisdictional Wetlands. Impacts to wetlands should be avoided or minimized whenever possible. The total size of the wetlands should be provided, in addition to the size of the wetland in the study area and size of the direct impact. The size and functional value of all impacted wetlands should be analyzed and a mitigation plan should be developed and included in the FEIS.

Vegetation

Development of the Proposed Action occurring in the forested areas (Site 4 and 6) would result in the loss of several acres of pine and deciduous hardwood forest. The DEIS states on page 4-40 that, "Under the Forest Conservation Act, 20 percent of the forest should be preserved as a Forest Conservation Mitigation Area to mitigate project impacts." With a loss of 80 percent of the Forest Conservation Area, retaining 20 percent doesn't seem to adequately mitigate for the significant loss. DOD states that, "A Forest Conservation Plan would be developed and implemented if currently forested sites were developed under the Proposed Action." A Forest Conservation Plan that would provide alternative ways to mitigate for forest loss and promote the growth of vegetation would be recommended for the protection of this valued resource.

Thank you for providing EPA with the opportunity to review this project. If you have questions regarding these comments, the staff contact for this project is Karen DelGrosso; she can be reached at 215-814-2765.

Sincerely,



William Arguto
NEPA Team Leader
Office of Environmental programs

Enclosure (1)

SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION*

Environmental Impact of the Action

LO--Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC--Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO--Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU--Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1--Adequate

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2--Insufficient Information

The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3--Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment

Lauri R. Watson

From: Ronald E. Lamb
Sent: Friday, November 21, 2008 1:20 PM
To: Lauri R. Watson
Subject: FW: Viewshed Analysis - Baltimore-Washington Parkway

-----Original Message-----

From: Williams, Jeffrey
Sent: Friday, November 21, 2008 1:07 PM
To: Ronald E. Lamb; Don H. Beckham
Cc: Vice, Michael L
Subject: FW: Viewshed Analysis - Baltimore-Washington Parkway

-----Original Message-----

From: Joe_Cook@nps.gov
Sent: Friday, November 21, 2008 12:44 PM
To: Williams, Jeffrey; Gayle_Hazelwood
Cc: Stephen_Syphax; James_Rosenstock
Subject: Viewshed Analysis - Baltimore-Washington Parkway

Good morning Jeff:

It was a pleasure speaking with you on Wednesday regarding NSA's utility upgrade project and the potential impacts to the Parkway viewshed.

You had asked for some additional information on the type of visual analysis we had in mind. The following info. is provided to define what we believe would adequately evaluate the potential impacts.

This past March and April we conducted balloon tests on a property adjacent to the Parkway at MD 198. The balloons were 36-inch diameter weather balloons, 100 mils thick and helium filled.

A series of balloons were raised from known points on the ground identified as topographically prominent in that if anything was going to be visible from the Parkway it would be from these locations. The balloons were raised at a range of heights simulating proposed building heights. A photographic log was kept to record which balloons were visible, or not, from each of the vantage points. We would like to adopt the same format at Fort Meade.

The log and photos were the basis for identifying any requisite mitigation.

The consultant that conducted the balloon tests was Cultural Resources, Inc. (CRI). They have considerable experience in this endeavor

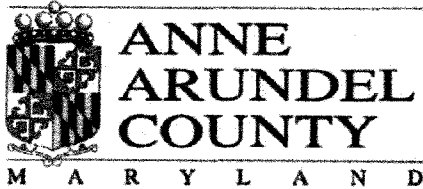
The point of contact for CRI is:

Ellen M. Brady, Vice President
Cultural Resources, Inc.
2200 Colonial Avenue, Suite 26
Norfolk, VA 23517

If you have any questions or need any additional information please feel free to contact me.

Thanks,

Joe
Chief, Land Resources Program Center
National Capital Region
National Park Service
1100 Ohio Drive, SW
Wash., D.C. 20242
(202) 619-70340



Office of Planning and Zoning

P.O. Box 6675
2664 Riva Road
Annapolis, Maryland 21401

December 2, 2008

Utilities Upgrades Environmental Impact Statement

C/O e2M

2751 Prosperity Avenue, Suite 200

Fairfax, Virginia 22031

Sir:

Thank you for providing Anne Arundel County, Maryland with the opportunity to offer comments regarding the *Environmental Impact Statement for the Proposed Utilities Upgrade Project at Fort George G. Meade, Maryland*, dated October 2008 and prepared by e2M. The County understands the importance of the availability of sufficient electricity to sustain the mission of the National Security Agency.

We do note that all proposed facility improvements are located on lands owned by the Federal Government and therefore are not subject to any local permits. Therefore the comments offered by the County are proposed to support the build proposal and to reduce costs in providing the facilities deemed to be necessary.

We also note that in each instance there will be an impact to available parking provided on site to support the travel demand associated with activities at NSA. Travel associated with NSA does result in impacts to off-site highway facilities such as the Baltimore-Washington Parkway which is owned by the National Park Service (NPS), MD 32 (Patuxent Freeway) which is a limited access facility operated by the Maryland State Highway Administration (SHA) and MD 175 (Annapolis Road), a principle arterial also operated by the SHA and currently being evaluated in a National Environmental Policy Act (NEPA) decision document.

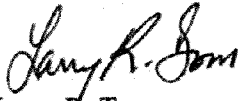
Costs associated with replacing the parking spaces that would be lost by using the land for the proposed facilities would be substantial, especially in instances where structured parking is being considered. Since the Department of Defense does not typically charge for parking either at grade or in structures, both the capital and long term operating costs would need to be borne by NSA.

Therefore, the County does recommend that NSA increase its efforts to promote and sustain rideshare, car and van pool, and transit alternatives which if successful will reduce demand for currently strained highway capacity, increase the viability of transit in the area, and serve as a model for helping to mitigate future travel demand associated with the Base Realignment and Closure (BRAC) 2005 Recommendations and the Enhanced Use Lease (EUL) development which will substantially impact travel in the vicinity beginning in 2010.

The County is eager to work with NSA and tenants at Fort Meade to advance ridesharing, car and van pooling and transit use proposals and recommends that the Final Environmental Impact Statement for this utilities upgrade also endorses and recommends greater use of vehicle trip reduction strategies as means to address the costs associated with replacing the parking.

Should you have any questions, regarding our comments, please contact George Cardwell, Planning Administrator via e-mail at pzcard44@aacounty.org or via phone at (410) 222-7440.

Sincerely,



Larry R. Tom
Planning & Zoning Officer

cc: Catherine Hill, Director, Local Government Relations, NSA
Robert Leib, Special Assistant to the County Executive/BRAC
Carole Sanner, Assistant Planning & Zoning Officer, OPZ
George Cardwell, Planning Administrator, OPZ



MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Baltimore MD 21230

410-537-3000 • 1-800-633-6101

Martin O'Malley
Governor

Shari T. Wilson
Secretary

Anthony G. Brown
Lieutenant Governor

Robert M. Summers, Ph.D.
Deputy Secretary

December 10, 2008

Mr. Jeffrey D. Williams
Senior Environmental Engineer
National Security Agency
Fort George Meade
Maryland 21401-1925

Dear Mr. Williams:

Thank you for your letter to Governor Martin O'Malley regarding the Draft Environmental Impact Statement (EIS) for the upgrade of aging utilities infrastructure at Fort Meade, Maryland. The Governor has received your letter and asked that I respond on his behalf.

It is important to consider the air quality impacts of any large project in Maryland, especially the Fort Meade area which is located on both an ozone and fine particle non-attainment area. The notice identifies the construction of an emergency generator facility. The Maryland Department of the Environment (MDE) has proposed a new regulation under COMAR 26.11.09 Control of Fuel-Burning Equipment titled "Stationary Internal Combustion Engines and Certain Fuel-Burning Installations for Emergency Generators" on October 24, 2008. The regulation establishes emission requirements for new emergency generators and for those that choose to participate in load shaving programs. National security agencies have special exceptions under this regulation so please review this regulation to ensure compliance. The notice also identifies the construction of a boiler and an electrical substation. Please be aware permits are required for specific equipment installation in Maryland and you should be in contact with MDE's air permitting program to ensure compliance with any permitting requirement.

Lastly, the Federal general conformity rule applies to Federal projects located in air quality nonattainment areas. For more information on general conformity, please refer to the following Federal Register notices: 40 CFR Parts 6, 51, and 93, November 30, 1993; 40 CFR Part 52, April 19, 1995; and 40 CFR Parts 51 and 93, July 17, 2006. General conformity must be addressed in the environmental impact statement for this project.



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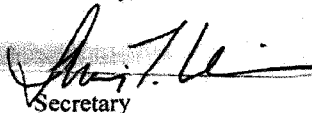
www.mde.state.md.us

TTY Users 1-800-735-2258
Via Maryland Relay Service

Mr. Jeffrey D Williams
Page Two

Thank you again for your letter. The Governor appreciates hearing from you and, on his behalf, I thank you for your interest in this very important issue. If I may be of further assistance, please contact me or Mr. George (Tad) S. Aburn, Jr., Director of the Air and Radiation Management Administration at 410-537-3255 or by e-mail at gaburn@mde.state.md.us.

Sincerely,



Secretary

cc: George (Tad) Aburn, Jr., Director of Air and Radiation Management Administration



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Via Maryland Relay Service



NATIONAL SECURITY AGENCY
FORT GEORGE G. MEADE, MARYLAND 20755-6000

January 14, 2009

Mr. Stephen Syphax
Chief, Resource Management Division
National Capital Parks East
National Park Service
1900 Anacostia Drive, SE
Washington, D.C. 20020

RE: Viewshed Analysis – Baltimore Washington Parkway
Environmental Impact Statement for the Proposed Utilities Upgrade Project
Fort Meade, Maryland

Dear Mr. Syphax:

As a follow-up to our letter to you, dated September 23, 2008 and in response to electronic correspondence, received November 21, 2008, from Mr. Joe Cook, Chief, Land Resources Program Center, please find enclosed a report describing the results of balloon tests that were conducted on December 2, 2008. The tests, suggested by Mr. Cook, were conducted as a supplement to the visual impact assessment conducted through the Environmental Impact Statement (EIS) for the Proposed Utilities Upgrade Project at Fort George G. Meade, Maryland. During the test we used the suggested contractor with NPS experience, and conducted the tests after vegetative cover was down. Six-foot diameter balloons were positioned at the corners of the proposed sites for the North and South Generator Stations and were raised to a height of 35 feet, the proposed maximum stack height. Photographs were taken from the Baltimore Washington Parkway at the same positions used in the computer simulation that was presented in the Draft EIS. At no point were the balloons at either the proposed Northern Site or the proposed Southern Site visible from the Baltimore Washington Parkway. These results are consistent with the visual assessment included in the Draft EIS.

We appreciate your concerns over possible impacts to the viewshed of the Baltimore Washington Parkway. We believe that the original computer simulation and the attached field test results demonstrate that there is no visual impact from the projects described in the EIS. As the execution of the Utilities Upgrade Project progresses, we will continue to coordinate and advise your office of any proposed modifications that differ significantly from the current proposal. We thank you for your comments.

Sincerely,

Jeffrey D. Williams
Senior Environmental Engineer

Enclosure: Visual Impact Assessment, Ft. Meade Campus

cc: Mr. Joe Cook, Chief, Land Resources Program Center, National Park Service

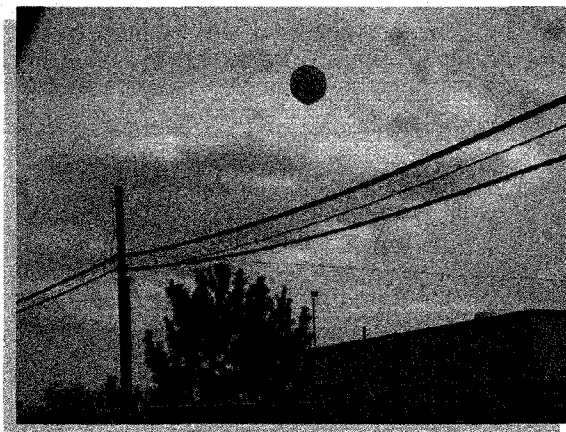
VISUAL IMPACT ASSESSMENT FT. GEORGE G. MEADE NSA CAMPUS

On October 17, 2008 the National Security Agency (NSA) published a Draft Environmental Impact Statement (DEIS) on the Utility Upgrades Program at Ft. George G. Meade, Maryland for public comment. Included in the DEIS was an assessment of the potential impacts to the viewshed of the Baltimore-Washington Parkway (BW Parkway), which is listed in the National Register of Historic Places (NRHP). The DEIS included a simulation of the visibility of the major components from the BW Parkway (see Section 4.1 of the DEIS). In comments on the DEIS dated November 21, 2008, the National Park Service (NPS) requested an additional assessment to ensure that the Proposed Action would not impact the BW Parkway viewshed. Specifically, NPS requested that balloons be raised from the locations proposed for the electric generator exhaust stacks and that visual observations be made and documented to determine the extent to which the balloons would be visible from the BW Parkway.

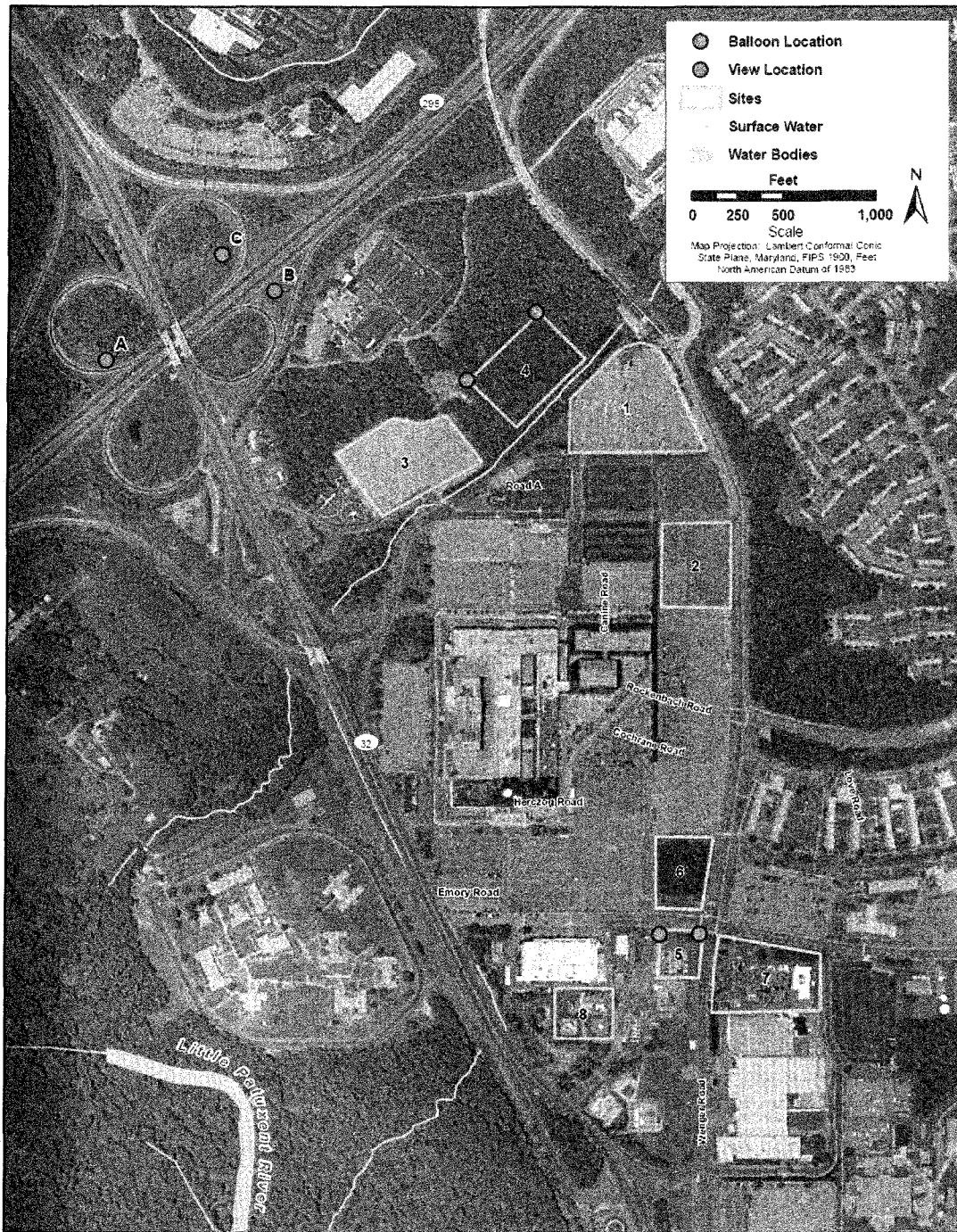
On December 2, 2008, personnel from Cultural Resources, Inc. (a contractor engaged to conduct the test), e²M (the contractor that prepared the DEIS), and NSA raised balloons at the proposed locations of the North and South Generator Stations. The balloon positions were located using a Thales Mobile Mapper CE GPS unit. Four 6-foot diameter balloons were raised to a height of 35 feet, the proposed maximum stack height. One balloon was positioned at the corners of the 2 proposed project locations. The balloon locations and the viewing locations are marked on the accompanying figure. The sites are both level, so the balloon positions corresponded with the most prominent topological features of each site.

Photographs were taken from the BW Parkway at the same position used in the computer simulation that was presented in the DEIS. Additional photographs were taken at alternate positions to ensure that the visual impacts were assessed from alternate locations. The observer's positions are marked on the figure. At no point were the balloons at either the proposed Northern Site or the proposed Southern Site visible from the BW Parkway.

A photo of one of the balloons in position and photos of the proposed sites from the BW Parkway are presented below. The red arrows on the photographs indicate the locations of the balloons. From the photos, it is clear that the Proposed Action will not impact the viewshed from the BW Parkway, and therefore will have no effect on the NRHP-listed BW Parkway.

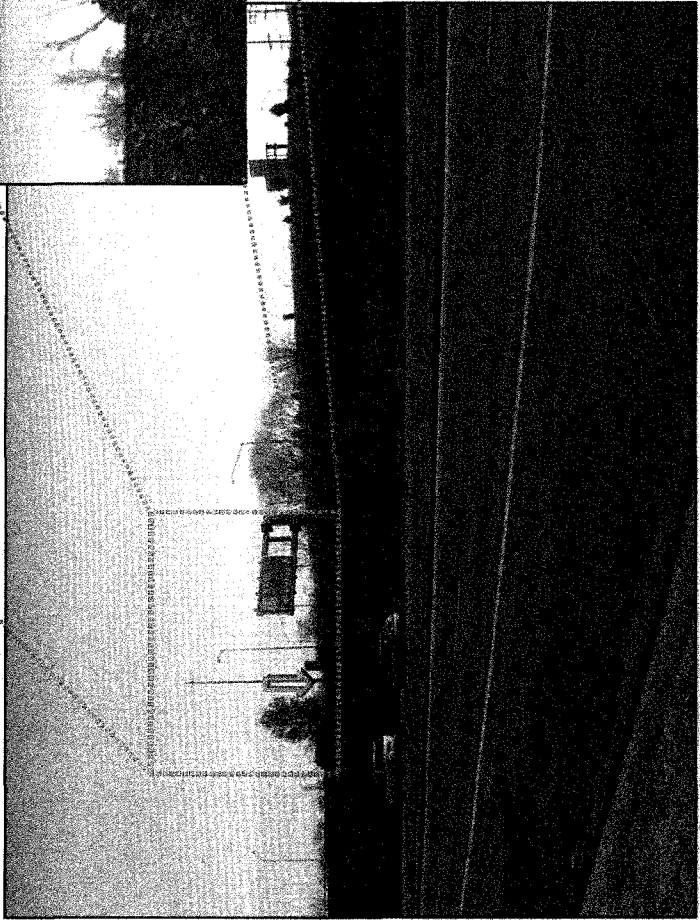
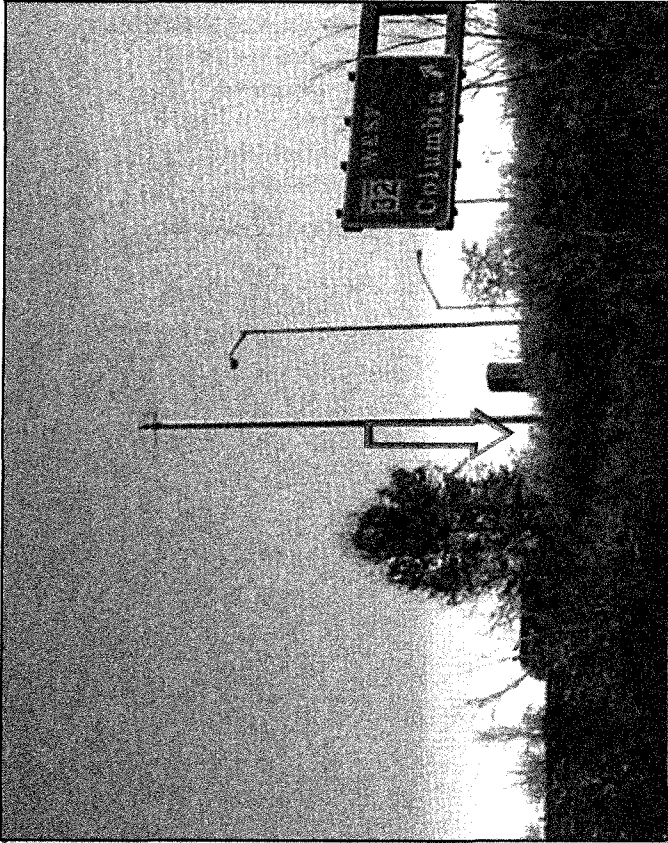


Balloon Position at Site 5

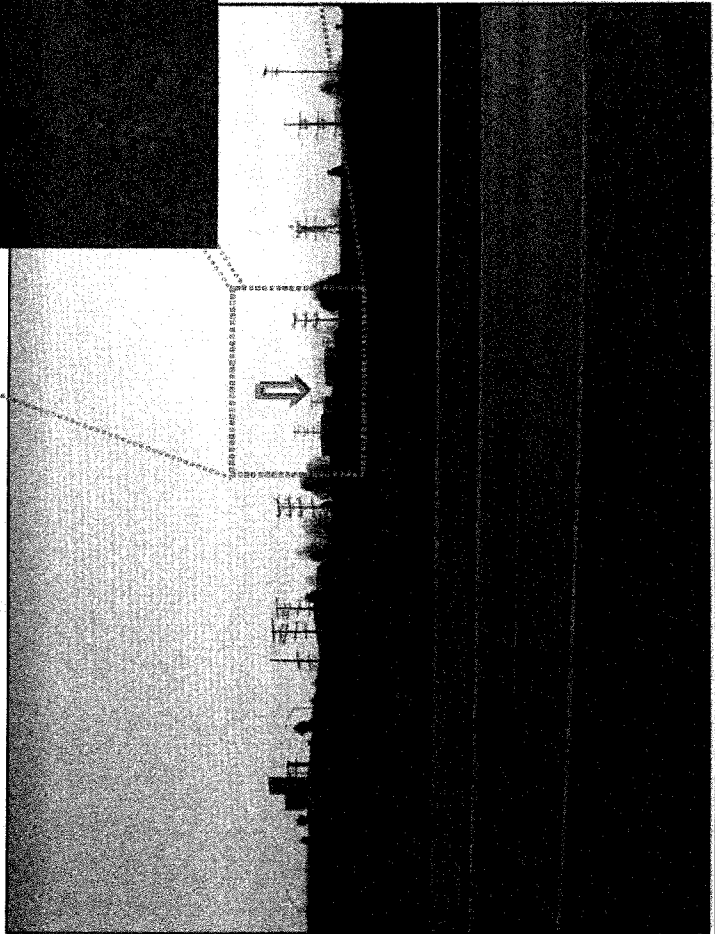
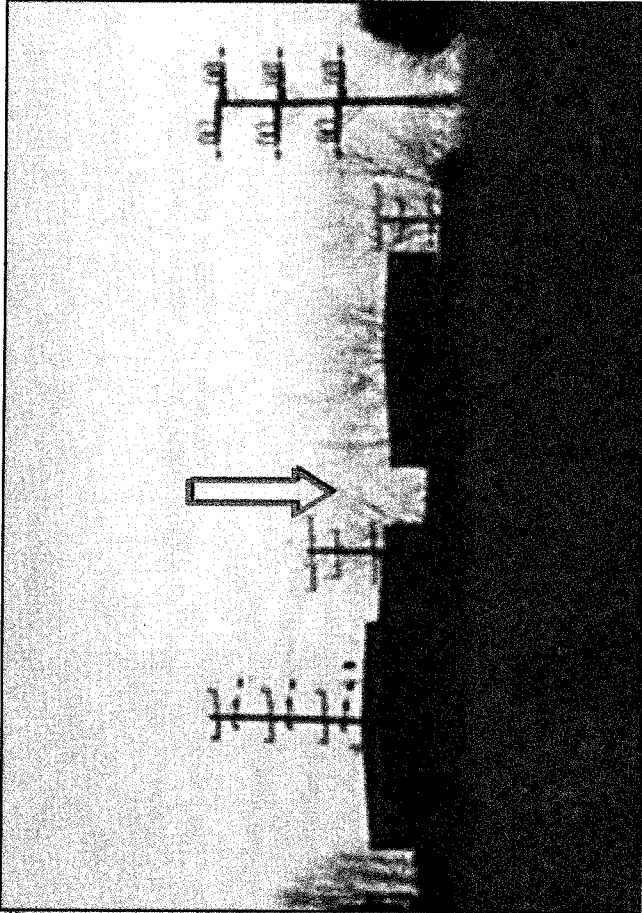


Source of Aerial Photography: NAIP 2007; Location Alternatives: eM Inc 2007; Water and Wetland Features: Fort Meade 2007

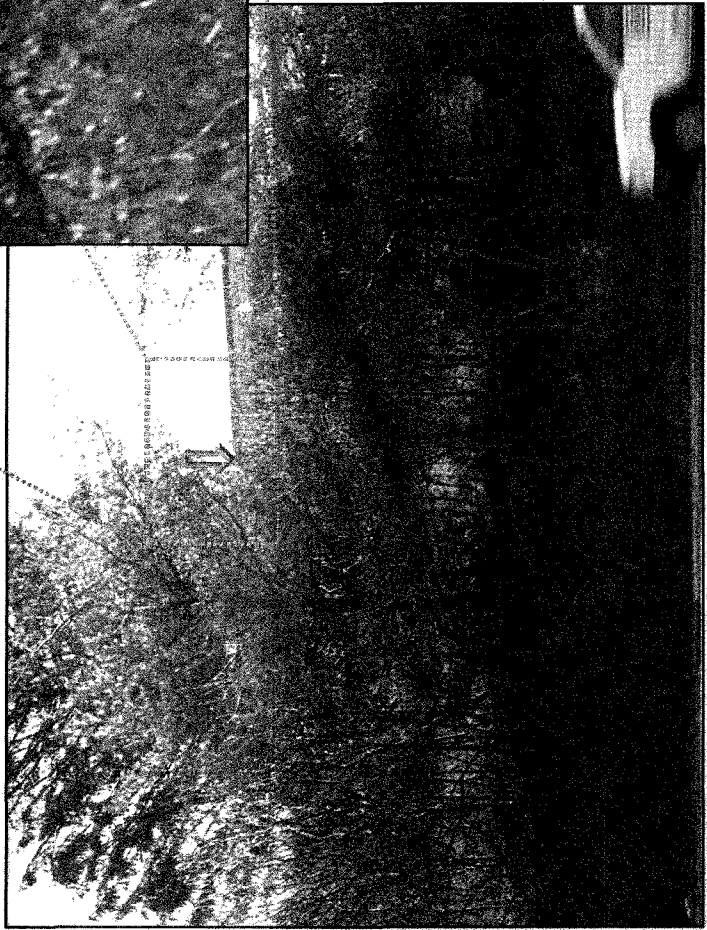
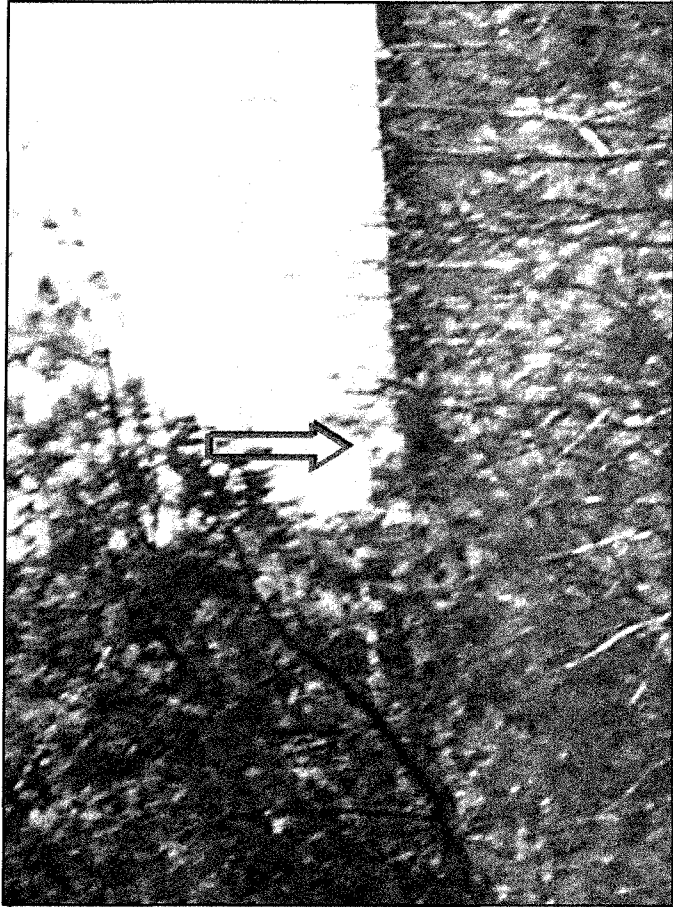
Balloon Positions and Viewing Locations, Ft. Meade, Maryland



Location A – View of Site 4



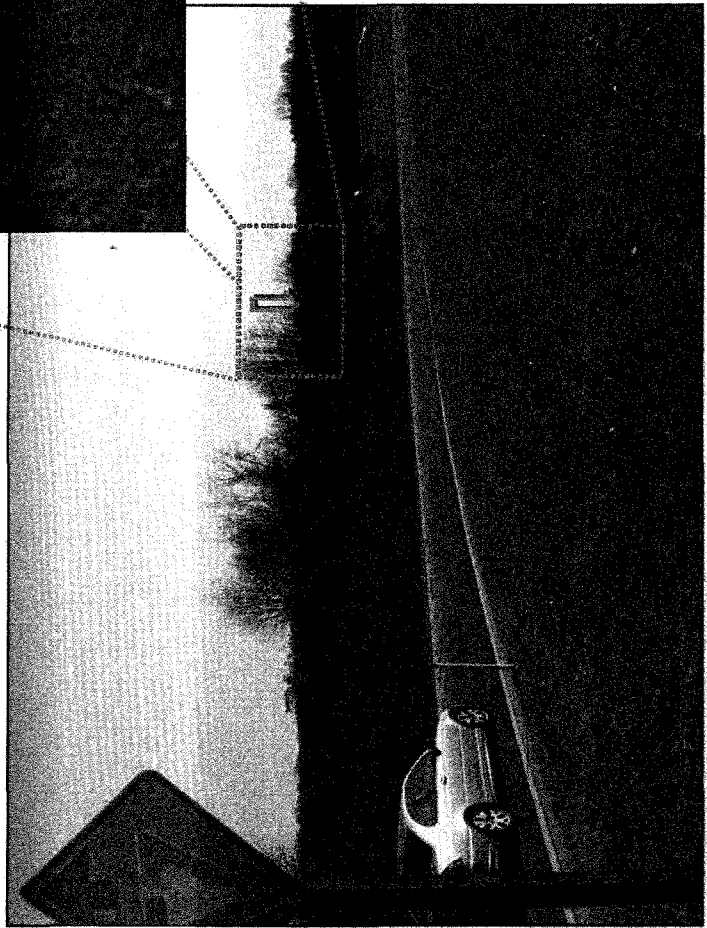
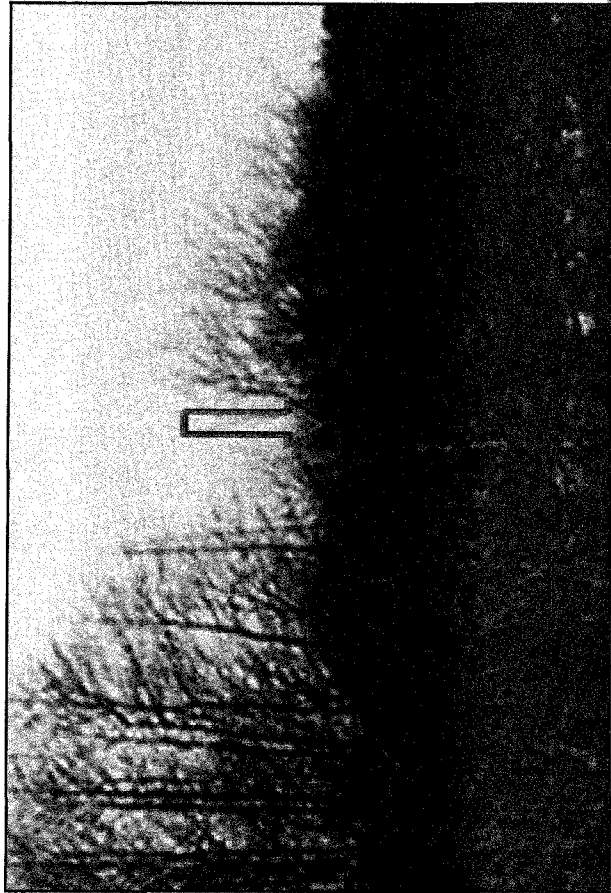
Location A – View of Site 5



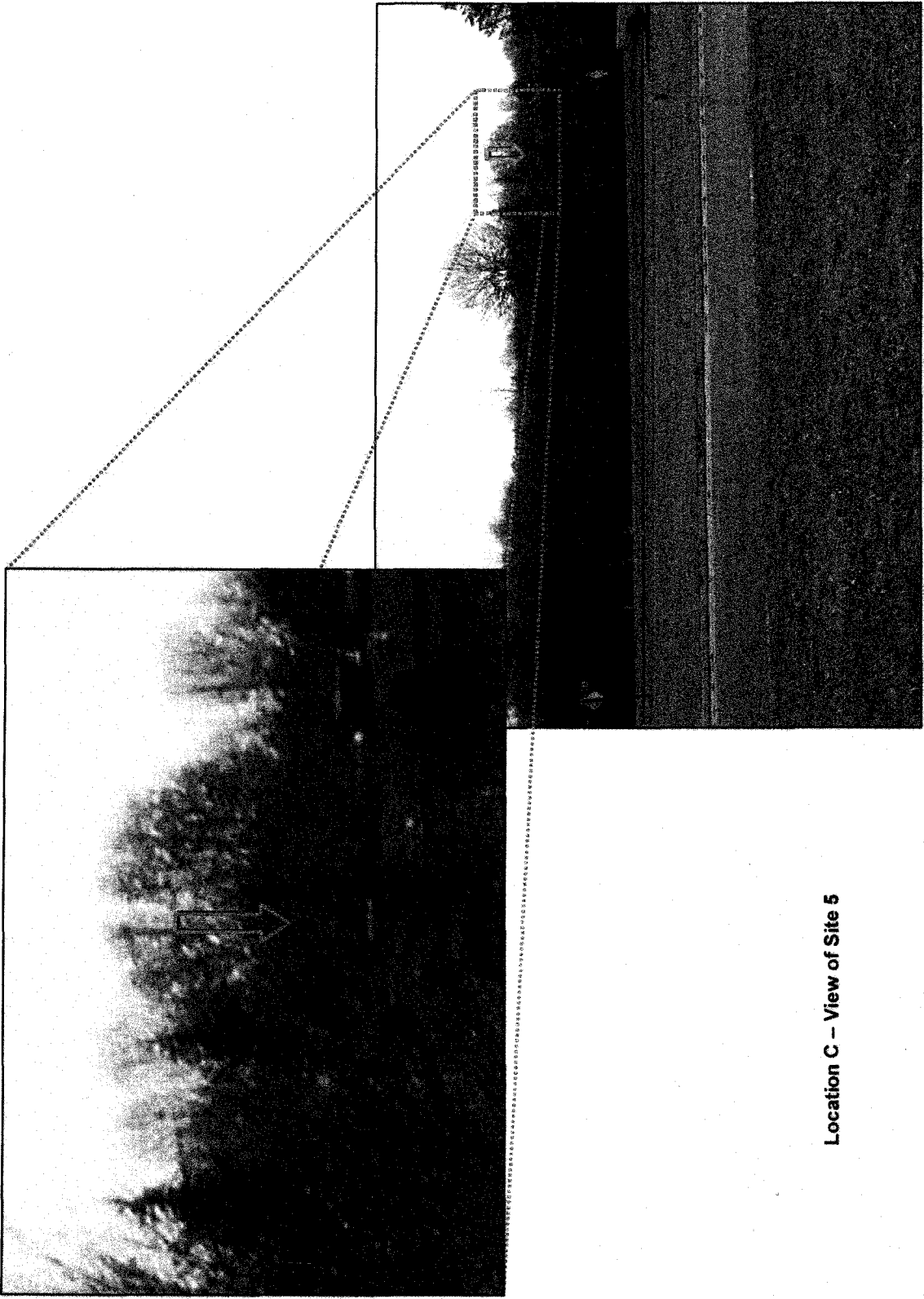
**Location B – View of Site 4
(National Cryptologic Museum in foreground)**



Location B - View of Site 5



Location C – View of Site 4



Location C – View of Site 5

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