

**DRAFT ENVIRONMENTAL ASSESSMENT
FOR THE
US ARMY GARRISON
ADELPHI LABORATORY CENTER
REAL PROPERTY MASTER PLAN**

**US ARMY GARRISON
ADELPHI LABORATORY CENTER,
MARYLAND**



NOVEMBER 2009

Cover Sheet

**DRAFT ENVIRONMENTAL ASSESSMENT FOR THE
UNITED STATES ARMY GARRISON ADELPHI LABORATORY CENTER
REAL PROPERTY MASTER PLAN**

- a. **Responsible Agency:** United States Army (Army)
- b. **Cooperating Agency:** None
- c. **Proposals and Actions:** This Environmental Assessment (EA) analyzes the potential environmental consequences of projects and components presented in the United States Army Garrison (USAG) Adelphi Laboratory Center (ALC) and Blossom Point Research Facility (BPRF) Real Property Master Plan.
- d. **For Additional Information:** Contact the Conservation Specialist, Directorate of Public Works, US Army Garrison, Adelphi Laboratory Center, MD, 301-394-3595
- e. **Designation:** Draft Environmental Assessment
- f. **Abstract:** This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969. Potentially affected environmental resources were identified through scoping; communication with local, state, and federal agencies; and review of past environmental documentation. Specific environmental resources with the potential for environmental consequences include: Land Use, Geology, Soils, and Topography, Air Quality, Visual Resources, Noise, Water Resources, Infrastructure and Utilities, Hazardous Materials and Waste Management, Socioeconomics and Environmental Justice, Biological Resources, Cultural Resources, and Safety.

The Proposed Action will not have a disproportionate impact on minority or low-income populations. There will be no impact upon children. No known cultural resources are expected to be impacted by construction. Best Management Practices (BMPs) will be used to ensure no impacts to Natural and Physical Resources. Emissions are not expected to surpass any significant threshold and will not result in any significant air quality impacts to the National Capital Interstate Air Quality Control Region. There will be no significant cumulative impacts from the proposed project when considered with past, present, and reasonably foreseeable future projects.

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FINDING OF NO SIGNIFICANT IMPACT (FONSI)
FOR THE
DRAFT ENVIRONMENTAL ASSESSMENT FOR THE
UNITED STATES ARMY GARRISON ADELPHI LABORATORY CENTER
REAL PROPERTY MASTER PLAN

US ARMY GARRISON ADELPHI LABORATORY CENTER, MARYLAND

INTRODUCTION

The United States Army Garrison (USAG) Adelphi Laboratory Center (ALC) updated its Real Property Master Plan (RPMP) for the ALC and the Blossom Point Research Facility (BPRF). This Environmental Assessment (EA) analyzes the potential for environmental consequences on the human and natural environments that may result from the Proposed Action, which is implementation of the updated Real Property Master Plan, and the No-Action Alternative.

PURPOSE AND NEED

The purpose of the Proposed Action is to implement the updated RPMP at the ALC and BPRF to provide overall support for certain infrastructure improvements (e.g., maintenance, repair, upgrades to facilities, demolition, and construction) that need to be completed. These improvements are needed to address issues such as maintenance of aging infrastructure, deficit of space, semi-permanent facilities, and shoreline erosion. The Proposed Action is needed to minimize or resolve existing inefficiencies and incompatibilities. Implementing the RPMP is necessary to remain on the cutting edge of science and technology and to provide the USAG ALC an efficient, sound framework to evaluate future development projects.

SELECTED ACTION

The selected action is the Proposed Action analyzed in the EA. The Proposed Action is the implementation of the updated RPMP. The RPMP includes the Long Range Component (LRC) and Short Range Component (SRC) Plans, which provide proposed improvement projects and area development plans in support of multiple facility missions. The SRC Plans include short-range projects to be implemented and funded within the five- to seven-year Future Years Defense Plan (FYDP) time frame. The LRC Plans include long-range projects, typically between 10 to 20 years. These plans include projects that minimize or resolve existing inefficiencies and incompatibilities. Projects in the RPMP include (but are not limited to) upgrades to access control points and security; maintenance and improvements to facilities and infrastructure; demolition of existing facilities; construction of new facilities, roads, storage etc.; and shoreline erosion protection.

NO-ACTION ALTERNATIVE

Under the No-Action Alternative, no development, maintenance, or renovation would occur. Construction activities proposed in the RPMP would not occur. Continued use of existing facilities would be necessary. Infrastructure and utilities would remain substandard and in need of necessary repairs. There would be no change to the existing storage, handling, generation, or use of hazardous and toxic materials/wastes or in the way solid waste is handled on either site.

The No-Action Alternative would result in individual ad hoc decisions being made concerning needed new facilities and infrastructure upgrades. The No-Action Alternative would preclude the use of long-range planning to prioritize, program, fund, and construct needed projects. The No-Action Alternative would result in a continuation of existing mission and growth patterns at both facilities. The No-Action Alternative does not address routine construction activities on either installation and does not include updated component plans to assess them.

SUMMARY OF FINDINGS

Environmental resources that could potentially be affected were identified through scoping, communications with local, state, and federal agencies, and review of past environmental documentation. Specific environmental resources with the potential for environmental consequences include: Land Use, Geology, Soils, and Topography, Air Quality, Visual Resources, Noise, Water Resources, Infrastructure and Utilities, Hazardous Materials and Waste Management, Socioeconomics and Environmental Justice, Biological Resources, Cultural Resources, and Safety. Potential impacts to these resources were analyzed in the EA.

No impacts to the overall transportation system are expected to occur as a result of the Proposed (Selected) Action. The Selected Action also will not result in adverse impacts to any other resources analyzed in the EA.

The Proposed Action will not have a disproportionate impact on minority or low-income populations. There will be no impact upon children. No known cultural resources are expected to be impacted by construction. Best Management Practices (BMPs) will be used to ensure no impacts to Natural and Physical Resources. Emissions are not expected to surpass any significant threshold and will not result in any significant air quality impacts to the National Capital Interstate Air Quality Control Region. There are no significant cumulative impacts from proposed projects when considered with past, present, and reasonably foreseeable future projects.

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

Based on my review of the facts and analysis in the EA, I conclude that the Proposed Action will not have a significant impact either by itself or considering cumulative impacts. Accordingly, the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ), and 32 Code of Federal Regulations (CFR) Part 989 et seq. have been fulfilled, and an Environmental Impact Statement (EIS) is not necessary and will not be prepared.

Mr. Ronald E. Schmidt
Garrison Manager
USAG, ALC, Maryland

Date

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MARYLAND

NOVEMBER 2009

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MARYLAND

November 2009

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1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION AND ALTERNATIVES

The United States Army Garrison (USAG) Adelphi Laboratory Center (ALC) proposes to implement the new installation Real Property Master Plan at the ALC and the Blossom Point Research Facility (BPRF). The Master Plan includes the Long Range Component (LRC) and Short Range Component (SRC) Plans, which provide proposed improvement projects and area development plans in support of multiple facility missions. This Environmental Assessment (EA) analyzes a Proposed Action that considers environmental siting criteria and operational requirements. A No-Action Alternative is also analyzed.

All Army installations are required to develop and maintain a Real Property Master Plan (RPMP) in accordance with Army Regulation AR 210-20, *Master Planning for Army Installations*. The RPMP is the installation commander's plan for the orderly management and development of the real property assets of the installation, including land, facilities, and infrastructure. It documents the real property master planning process.

The ALC is located approximately 10 miles north of Washington, D.C., and approximately 26 miles southwest of Baltimore, Maryland. The ALC is within one mile of both the Interstate 495 (I-495), also known as the Capital Beltway, and Interstate 95 (I-95). The installation consists of approximately 206 acres and is located adjacent to the Hillandale Community, a commercial and residential suburb approximately five miles from the D.C. - Maryland border. The ALC is located in Montgomery and Prince George's Counties (Figure 1), with the majority of the facilities residing in Montgomery County.

The BPRF is located 22 miles south of Washington, D.C. in southern Charles County, Maryland (Figure 2). The installation is situated on Cedar Point Neck on the north side of the Potomac River and is bounded on three sides by water. The campus includes 70,000 square feet of enclosed area in 46 buildings over the 1,600 acre site. Charles County is located in southern Maryland between the Patuxent and Potomac Rivers. To the north is Prince George's County while St. Mary's County is to the southeast.

1.1 PURPOSE AND NEED FOR THE PROPOSED ACTION

The mission of the USAG ALC is to support innovative science and technology by providing service and infrastructure while optimizing resources, sustaining the environment, and enhancing the well-being of the Army's workforce and community.

The U.S. Army Research Laboratory (ARL) provides America's Soldiers a technological edge through scientific research, technology development, and analysis (U.S. Army, 2004). The Laboratory also provides critical analysis on existing developmental weapon systems, with emphasis on factors such as survivability, lethality, man-machine interface, and battlefield environmental effects. The ARL is unique because it serves as one of the few Army Laboratories that provides highly advanced, specialized, and one-of-a-kind research facilities. The laboratory works in a variety of technical disciplines, through direct in-house laboratory efforts and joint programs with government, industry, and academia.

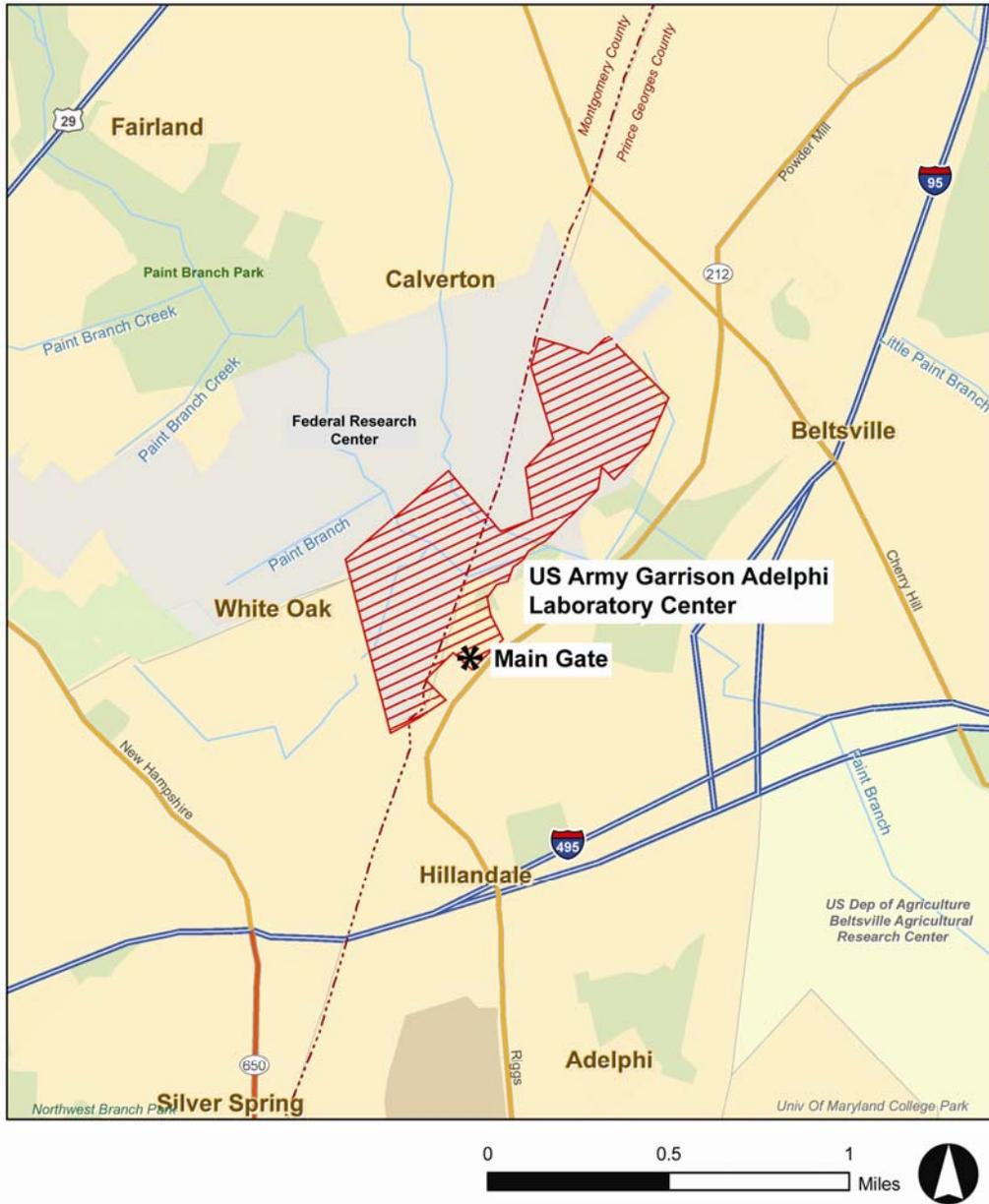


FIGURE 1: USAG ALC AND VICINITY



FIGURE 2: USAG BPRF AND VICINITY

The Proposed Action, which includes upgrades to facility resources, is necessary to remain on the cutting edge of science and technology. The component plans provide the ALC an efficient, sound framework to evaluate future development projects.

The purpose of the Proposed Action is to provide overall support for certain infrastructure improvements (e.g., maintenance, repair, upgrades, demolition, and construction) that are in need of implementation. These infrastructure improvements are needed to support USAG the ALC and the BPRF as well as other current and reasonably foreseeable mission requirements. This environmental analysis uses a comprehensive framework to evaluate the consequences of these projects and consider their broader cumulative effects. This EA is intended to meet the following goals:

- Evaluate baseline conditions of the ALC and the BPRF;
- Evaluate the environmental consequences of infrastructure changes; and
- Provide the Army an efficient, sound framework to evaluate future development projects.

The facilities and infrastructure improvements considered under the Proposed Action would support the ALC and the BPRF in becoming increasingly well-suited to mission requirements, function more efficiently, and respond to mission requirements.

1.2 PUBLIC AND AGENCY COORDINATION

The Army notified concerned federal, state, and local agencies through the Interagency and Intergovernmental Coordination on Environmental Planning (IICEP) process. This involved providing a letter (Appendix A) and allowing sufficient time to evaluate the potential environmental impacts of the proposed action during the scoping period. A second letter was sent with the Draft EA to those on the distribution list announcing the public review period for the Draft EA. Executive Order (EO) 12372, Intergovernmental review of Federal Programs, requires intergovernmental notification prior to making any detailed statement of environmental impacts.

Agency consultations were undertaken with regard to cultural resources for compliance with the National Historic Preservation Act (NHPA). Compliance with the Endangered Species Act (ESA) requires communication with the U.S. Fish and Wildlife Service (USFWS) in cases where a federal action could affect listed threatened or endangered species, species proposed for listing, or candidates for listing. If any of these species is present, a determination is made of any potential adverse effects on the species. Should no species protected by the ESA be affected by the Proposed Action, no additional action is required. Letters were sent to the appropriate USFWS office, informing them of the proposal and requesting data regarding applicable protected species. Appendix A includes the comment letter, a sample IICEP letter, and the distribution list.

To facilitate public involvement, the Army prepared and published newspaper advertisements notifying the public of their intention to prepare a Draft EA; of the availability of the Draft EA for review and comment; and of the availability of the Final EA. These advertisements were published in *The Washington Post* newspaper. The announcements solicited input on the project from the public and agencies, as well as their involvement. IICEP letters were sent to the distribution list included in Appendix A.

1.3 RELATED LAWS, POLICIES, AND OTHER MANAGEMENT DOCUMENTS

The following sections identify federal, state, and local statutes, regulations, and planning documents which are relevant to the proposed project.

1.3.1 RELATED PLANNING DOCUMENTS

2007 Adelphi Laboratory Center Real Property Master Plan (RPMP) Long Range Component: This is the most recent RPMP for the installation. This plan includes short range projects and long range comprehensive planning.

2009 Adelphi Laboratory Center Real Property Master Plan (RPMP) Short Range Component: The SRC includes tables and maps of short range projects in the 5-7 year planning horizon.

2007 Blossom Point Real Property Master Plan (RPMP) Long Range Component: This is the most recent RPMP for the installation. This plan includes short range projects and long range comprehensive planning.

2009 Blossom Point Real Property Master Plan (RPMP) Short Range Component: The SRC includes tables and maps of short range projects in the 5-7 year planning horizon.

1.3.2 OTHER RELATED LAWS, POLICIES, AND REGULATIONS

The *National Environmental Policy Act* (NEPA) of 1969 establishes national policy, sets goals, and provides the means to prevent or eliminate damage to the environment. The NEPA procedures ensure that information about environmental impacts is available to public officials and citizens before decisions are made on major federal actions that may significantly affect the environment. The Council on Environmental Quality (CEQ) regulations implements the procedural provisions of NEPA.

The *Clean Air Act* (CAA) of 1970 (42 USC 7401 et seq.; 42 USC 1857h-7 et seq; PL 91-604) establishes federal policy to protect and enhance the quality of the nation's air resources to protect human health and the environment. The CAA sets national primary and secondary ambient air quality standards as a framework for air pollution control.

The *Clean Water Act* (CWA) (33 USC 1251 - 1376) establishes federal limits, through the National Pollutant Discharge Elimination System (NPDES), on the amounts of specific pollutants that are discharged to surface waters in order to restore and maintain the chemical, physical, and biological integrity of the water as established by ambient water quality standards.

The *Floodplain Management* (EO 11988) sets the policy for directing the federal government to avoid, to the extent possible, any long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative.

The *Protection of Wetlands* (EO 11990) sets the policy for directing the federal government to avoid, to the extent possible, any adverse impacts associated with the destruction or modification of wetlands, and to avoid support of new construction in wetlands wherever there is a practicable alternative.

The *Endangered Species Act* (ESA) of 1973 (16 USC 1531 et seq; PL 93-205) requires federal agencies that authorize, fund, or carry out actions to avoid jeopardizing the continued existence of endangered or threatened species, and to avoid destroying or adversely modifying their critical habitat. Federal agencies must evaluate the effects of their actions on endangered or threatened species of fish, wildlife, and plants, and their critical habitats, and take steps to conserve and protect these species. All potentially adverse impacts to endangered and threatened species must be avoided or mitigated.

The *Migratory Bird Treaty Act* (MBTA) of 1918, as amended [16 USC 703 et. seq.], provides for the protection of migratory birds and prohibits their unlawful take or possession. In addition, EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, was signed by President Clinton in 2001. This EO directs federal agencies to include impacts to migratory birds in their NEPA analyses.

The *National Historic Preservation Act* (NHPA) of 1966, as amended, (16 USC 470a et seq. 80 Stat. 915; PL 89-665) requires federal agencies to take into account the effects of their undertakings on historic properties, and to afford the Advisory Council on Historic Preservation an opportunity to comment with regard to such undertaking . Implementing regulations for Section 106 of the NHPA are found at 36 CFR 800 and outline the process agencies are to follow when evaluating the effects of their undertakings on historic properties and when resolving effects to such properties. Historic properties are defined in the *Protection of Historic Properties Act* of 1986 (36 CFR 800.16[1][1]) as "... any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places...."

The *Archaeological Resources Protection Act* of 1979, as amended, (16 USC 470aa-470mm. 93 Stat. 721; 43 CFR 7; PL 96-65) and its implementing regulations establish a procedure for permitting the recovery of information from archaeological sites, and authorize and establish civil and criminal penalties for intentionally or inadvertently damaging an archaeological site without a permit.

The *Noise Control Act* of 1972 (42 USC 4901; PL 92-574) establishes a policy to promote an environment free from noise that is harmful to the health or welfare of people. Federal agencies comply with state and local requirements for the control and abatement of environmental noise, where applicable.

The *Protection and Enhancement of Environmental Quality* (EO 11514) sets the policy for directing the federal government in providing leadership in protecting and enhancing the quality of the nation's environment.

The *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (EO 12898) directs federal agencies to determine whether their programs, policies, and activities have disproportionately high and adverse human health or environmental effects on minority and low-income populations.

The *Protection of Children from Environmental Health Risks and Safety Risks* (EO 13045) directs federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children.

The *Intergovernmental review of Federal Programs* (EO 12372) requires intergovernmental notification prior to making any detailed statement of environmental impacts.

The *Code of Maryland Regulations, Title 26* is the official compilation of the Department of the Environment regulations issued by the state of Maryland.

There is a brief description of the following laws within this EA:

- Army Regulation 200-2, *Environmental Analysis of Army Actions*
- Fish and Wildlife Coordination Act
- Sikes Act
- Maryland Tidal Wetland Act
- Non-tidal Wetlands Protection Act
- Chesapeake Bay Critical Areas Act
- Coastal Zone Management Act
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Occupational Safety and Health Administration (OSHA)
- Emergency Planning and Community Right-to-Know Act (EPCRA).
- AFI 32-7086, *Hazardous Materials Management*
- Resource Conservation and Recovery Act (RCRA)

1.3.3 PERMIT REQUIREMENTS

A list of the ALC permits was reviewed during the EA process. Table 1 provides a summary of permits and approvals that may be required for this project. Best Management Practices (BMPs) and the conditions and requirements of these permits will be followed.

TABLE 1: ALC AND BPRF PERMIT REQUIREMENTS

Permit Name	Permit Number	Permit Type	Agency	Issue Date	Expiration Date
Controlled Hazardous Substances Facility Permit (RCRA Part B)*	A-269	RCRA-C	MDE	06/15/2004	06/14/2009
MS4 Storm Water General Permit (NPDES)	05-SF-5501	CWA	MDE	11/12/2004	11/12/2009
WSSC Industrial Discharge Authorization Permit	00166	CWA	WSSC	05/22/2008	05/21/2012
Oil Operations Permit	2008-OPT-3192	OTHER	MDE	03/12/2008	03/12/2013
Permit to Construct and Operate two natural gas/fuel oil-fired boilers at B.106	16-5-0817 & 0818N	CAA	MDE	08/07/1995	None
Permit to Construct and Operate one emergency diesel generator at B. 500	033-9-1155N	CAA	MDE	06/03/2004	None
Permit to Construct and Operate two emergency diesel generators at B. 207	16-9-1059 & 1060 N	CAA	MDE	08/04/1995	None

* Awaiting updated renewal permit from MDE. Current permit is still valid until the updated permit is received.

1.4 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

This EA was written in accordance with the provisions of the National Environmental Policy Act of 1969 (NEPA) (PL 91-190, 42 USC 4321-4347). Detailed procedures for developing this document comply with the CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508) and with Army Regulation 200-2, *Environmental Analysis of Army Actions* (December, 2001). An important consideration regarding this EA is that it addresses a planning document as opposed to a specific construction project. As such, this EA is programmatic in nature and does NOT fully document or authorize construction of any of the projects listed under the Proposed Action. Individual NEPA documents (which could be tiered from this EA) would need to be developed for each project listed in the Proposed Action to insure full and complete compliance with NEPA and all other regulatory requirements.

Early coordination was conducted with state, local, and federal agencies to obtain their input on Proposed Action in accordance with 40 CFR 1501.6 (see Appendix A). Every effort was made to maintain the focus of impacts in keeping with the guidance of 40 CFR 1500.4(a) through (g) and (q) as well as 40 CFR 1502.2(a) emphasizing an analytic rather than encyclopedic approach to impact analysis.

1.4.1 IMPACT ISSUES IDENTIFIED FOR FURTHER ANALYSIS

The following resources are analyzed in this EA:

- Land Use
- Geology, Soils, and Topography
- Air Quality
- Visual Resources
- Noise
- Water Resources
- Infrastructure and Utilities
- Hazardous Materials and Waste Management
- Socioeconomics and Environmental Justice
- Biological Resources
- Cultural Resources
- Safety
- Coastal Zone Management

1.4.2 IMPACT TOPICS DISMISSED FROM ANALYSIS

The following topics were dismissed from further analysis since they are not located within the proposed project area. Therefore, there would be no potential impacts to these resources.

- Prime and Unique Farmland
- Natural Areas
- Wild and Scenic Rivers
- Special Aquatic Sites
- Recreation

1.5 ORGANIZATION OF THIS EA

This EA includes seven chapters. Chapter 1.0 introduces the purpose and need for the component plans. Chapter 2.0 characterizes the Proposed Action and No-Action Alternative. Chapter 3.0 describes the current baseline conditions of the affected environment. Chapter 4.0 assesses the potential environmental consequences to the affected environment from the Proposed Action and No-Action Alternative. Chapter 5.0 explains cumulative effects and irreversible and irretrievable commitment of resources. Chapter 6.0 includes references and document contacts made during the environmental impact analysis process (EIAP). Resources and issues analyzed in this EA include Land Use, Geology, Soils, and Topography, Air Quality, Visual Resources, Noise, Water Resources, Infrastructure and Utilities, Hazardous Materials and Waste Management, Socioeconomics and Environmental Justice, Biological Resources, Cultural Resources, Safety, and Coastal Zone Management. Appendix A, Agency Coordination, includes an example Planning IICEP letter and scoping comments.

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

The NEPA requires the consideration and evaluation of other reasonable ways to meet proposal objectives while minimizing or avoiding environmental impacts. Therefore, the evaluations of a No-Action Alternative and a practical range of other “reasonable” action alternatives are required. These alternatives should represent other means of satisfying the stated purpose and need for the Proposed Action, which is to implement infrastructure improvements within the ALC and the BPRF. Reasonable alternatives are those that are practical or economically and technically feasible to implement. An alternative that conflicts with federal law does not necessarily make it unreasonable but such conflicts must be considered.

This EA analyzes the Proposed Action and No-Action Alternative. This chapter also briefly outlines alternatives previously considered and eliminated from further analysis. The alternatives provide the basis for analyzing existing conditions, potential environmental consequences of the alternatives, and mitigation measures relative to each element of the environment. The No-Action Alternative is required by NEPA to provide a baseline for comparison of the impacts of other alternatives included in the analysis, even when the No-Action Alternative may not be implemented based on legal, regulatory, or other considerations, including a legislative command to act. The analysis of alternatives provides decision makers and the public with information to support selection of an action that avoids or mitigates environmental impacts while meeting the purpose and need for the proposal.

The USAG ALC proposes to implement infrastructure improvements to provide enhanced facilities in support of its ongoing mission needs within the ALC and the BPRF. It is essential that this infrastructure also be increasingly effective at supporting future mission needs. This EA provides a framework to planning and environmental documentation to support these infrastructure improvements. Infrastructure improvement projects include those described in the LRC and SRC documents.

In preparing the Proposed Action, planners considered overall development goals that respond to mission needs and historical, natural, and man-made constraints at the installations while complying with federal, state, and local regulations. Goals focused on the following:

- Growth and optimal utilization of installation capacity
- Changing mission requirements
- Changing technology
- Improving resource stewardship
- Improving quality of life

2.1 ALTERNATIVES CONSIDERED AND ELIMINATED FROM FURTHER ANALYSIS

Partial implementation of the Real Property Master Plan was eliminated from analysis in this EA because such partial implementation cannot be defined. The intent of including the various projects in the Real Property Master Plan is that there are documented requirements for all of them in light of the current and future mission and that they will all eventually be funded, designed, and constructed. There is no way to predict which individual projects in the Real Property Master Plan may or may not be dismissed or otherwise not completed as a result of future changes in requirements, funding, etc. Partial implementation would fall short of fully supporting the needs of Installation personnel and the required facilities to accomplish the mission as currently envisioned. Therefore, an examination of impacts from the perspective of full implementation of the Real Property Master Plan and from the No-Action Alternative provides a look at the full potential impact spectrum for both the natural and built environments at the ALC and the BPRF.

2.2 PROPOSED ACTION

The USAG ALC and the BPRF SRC's and LRC's propose planning actions to progress the future development of the installation at the BPRF and the ALC. There is only one action alternative being considered, which is to implement the Real Property Master Plan in its entirety. Short range projects to be implemented and funded within the five- to seven-year Future Years Defense Plan (FYDP) window, were developed and included in the SRC. Long range projects, typically between 10 to 20 years, were included in the LRC. The plans propose land use patterns that minimize or resolve existing inefficiencies and incompatibilities in order for the installation to evolve into a highly efficient and pleasant workplace.

Expansion capabilities based on current or future missions are identified. The rationale and potential impacts are analyzed considering the site specific locations of proposed facilities. For detailed maps and information regarding individual projects please consult the *2007 Adelphi Laboratory Center RPMP Long Range Component*, the *2007 Adelphi Laboratory Center RPMP Short Range Component*, the *2007 Blossom Point RPMP Long Range Component*, and the *2007 Blossom Point RPMP Short Range Component*.

2.2.1 ALC AND BPRF

The Proposed Action includes additional or upgraded facilities to ensure the current and reasonably foreseeable mission requirements of the USAG ALC. These renovated and new facilities would provide for and protect the scientific and research capabilities noted in Chapter 1.0.

Issues at the ALC include maintenance of an aging infrastructure and a deficit of space, particularly in Administration General Purpose facilities. The primary issues at the BPRF include maintenance of an aging infrastructure and semi-permanent facilities, as well as shoreline erosion. Table 2 summarizes the planned/programmed improvements components of the proposed action at the ALC. Table 3 summarizes the planned/programmed improvements components of the proposed action at the BPRF.

TABLE 2: MASTER PLAN PROJECTS AT ALC

Implementation Item	Proposed Action Components
Facility Maintenance and Improvements	<ul style="list-style-type: none"> • Design/Install Elevator Bldg 103 • Replace Electrical Distribution Switchgear (Substation) • Replace Deluge Fire Protection System Bldg 107 • Replace Chiller #3 (Central Plant Bldg 106) • Replace Breakers Heating/Cooling Plant, Bldg 106 • Repair/Replace Breakers, Bldg 205 • Install Additional Fire Sprinklers, Bldg 500 • Replace Cooling Towers #4, #6 & #7 Bldg 106 • Replace Cooling Towers #1, #2 & #3 Bldg 106 • Implement Smart Bldg System, Bldg 207 • Install Variable Speed Drives on Return Fans, Bldg 204 • Retrofit Mixing Boxes, Bldg 205 • Replace Room Air Handlers, Bldg 504 • Upgrade HVAC System - Bldg 403 • Replace Failing Cooling Tower Bldg 500 • Repair/Renew/Renovate Bldg 204 3rd Floor Hallways • Renew/Renovate Bldg 205 5th Floor • Replace Intrusion Detection System (Site-wide) • Replace Fire Alarm System - ALC Wide (Includes A-E Design) • Roof Inspections • Centralization of Emergency Power for 200 Area • Execute Interior Bldg Upgrades (200 Area) • Feeder # 7 - Redundant 15 KV Feeder to the 400/500/600 Areas
Access Control Points and Security	<ul style="list-style-type: none"> • Construct main gate access control point • Reopen Dahlgren Gate / redesign ACP • Construction of a new visitor's center • Bridge reconstruction • Stormwater improvement projects

Table 2 Continued: Master Plan Projects at ALC

Implementation Item	Proposed Action Components
Buffer Maintenance	<ul style="list-style-type: none"> • Maintain boundary buffer, providing 150-foot separation • Upgrade stream protective buffer adjacent to Paint Branch Creek and its tributaries
Demolition	<ul style="list-style-type: none"> • Demolish facilities: 406, 407, and 408 • Demolish facilities: Bldg 504 and 505 • Demolish facilities: Bldg 602, 603, 604, and 605 • Remove semi-permanent facilities: Bldg 108 and adjacent trailers
Infrastructure Improvement Projects	<ul style="list-style-type: none"> • Renovate bridges • Build/pave new roads • Construct parking lots and structures • Replace and repair HTW lines • Replace underground storage tanks (UST's) • Repair sewer lines • Construct salt storage facility
New Construction	<ul style="list-style-type: none"> • Construct a new facility replacing Buildings 602, 603, 604, and 605. • Construct ALC Conference Center • Construct new car wash • Construct 166,000 GSF of lab space • Construct 88,000 GSF office building with a parking structure • Construct 162,000 GSF of laboratory space with interconnected building series • Construct dedicated fence-line with controlled entry point for 400 area • Construct a limited use visual flight rules helipad
Renovation	<ul style="list-style-type: none"> • Add additional floors to Buildings 202, 203, and 204

TABLE 3: MASTER PLAN PROJECTS AT BPRF

Implementation Item	Proposed Action Components
Access Control Points and Security	<ul style="list-style-type: none"> • Alternatives for improvements to the security gate at the single access point to Blossom Point are currently under study. Similar analysis is necessary at the gate entry to NRL
Joint Land Use Study	<ul style="list-style-type: none"> • Demolition includes complete dismantling and removal of facility structures • Renovation and construction of new facilities
Maintenance	<ul style="list-style-type: none"> • Install explosion-proof light fixtures in Building 504 • Replace Blossom Point Electrical Distribution System
New Construction	<ul style="list-style-type: none"> • A travel camp is required for outdoor recreational activities and the overall improvement in morale • Expand administration facility on Blossom Point by 2,400 SF
Naval Research Laboratory Leased Land	<ul style="list-style-type: none"> • Lease 15 additional acres for 4 antenna pads
Research and Development	<ul style="list-style-type: none"> • Construct a new 10- lane, 1,000 yard small arms research range in the 300 Area • Construct boat dock in the area of Kings Creek Road on the Nanjemoy River • Repair Range Safety Control Tower and Observation Building • Replace fire lines • Replace Building S-510 with a fire station • Unmanned Aerial Vehicle testing runway
Roads	<ul style="list-style-type: none"> • Pave 2 miles of Blossom Point Road and maintained to a minimum width of 20 feet to the general vicinity of Blossom Point
Security Fencing	<ul style="list-style-type: none"> • Install perimeter fencing • Install shoreline fencing • Install cameras
Shoreline Erosion	<ul style="list-style-type: none"> • Coordinate with multiple agencies on submerged aquatic vegetation research • Construct approximately 800 feet of stone revetment and 8 stone offshore breakwaters along one-mile of Nanjemoy Creek
Storage and Supply	<ul style="list-style-type: none"> • Construct Materials Transfer Facility to receive and handle hazardous and explosive materials • Construct storage facility for propel ejection seat storage • Relocation of Building 504

Joint Land Use Study

The ALC proposes to acquire 1,768 acres on the north and east side of the BPRF. This additional acreage would improve noise buffer zones, sustain safety fans and acres, minimize electromagnetic interference, allow for compliance with DoD (Department of Defense) directives 3200-15 and 4715-11, increase security for low visibility programs, and increase availability for larger project footprints.

Demolition Activities

Prior to renovation or demolition of a facility, the Army would contract to have any asbestos-containing materials and lead-based paint removed and properly disposed of in accordance with federal and state regulations. Site preparation would include establishing a buffer zone around the involved facilities. The proposed demolition would include complete dismantling and removal of all facility structures, equipment and machinery, in accordance with applicable regulatory requirements to ensure proper handling and disposal of waste. All utilities would be capped or disconnected. Materials from all facilities proposed for demolition would be recycled to the greatest extent practicable. The demolition contractor would dispose of the remaining materials in an approved landfill in accordance with state and federal regulations and utilize an established haul route for equipment delivery and debris removal. Demolition would involve minimal ground disturbance and any areas that may be disturbed by demolition would be restored to prevent any long-term soil erosion. Frequent spraying of water on exposed soil during ground disturbance and demolition activities, proper soil stockpiling methods, and prompt replacement of ground cover or pavement are standard construction procedures that would be used to minimize the amount of dust generated during demolition.

Renovation and Construction Activities

Prior to renovation, construction, or demolition at any site, a construction lay down area and haul route would be established. Appropriate erosion and siltation controls would be implemented and maintained in effective operating condition prior to and throughout all construction and demolition activities.

With the start of building construction, each building site would be graded and sediment and erosion controls would be installed. These standard construction practices would include the installation of a silt fence, storm drain inlet protection, temporary sediment traps, and diversion dikes within project limits prior to commencement of any on-site work. All development activities would be performed in accordance with current security and force protection requirements.

Fugitive dust would be controlled by the use of standard construction practices. In all cases where construction disturbs the existing vegetation or other ground surface, the contractor would revegetate the area as approved by the installation or restore the surface as directed by the installation.

2.3 NO-ACTION ALTERNATIVE

The No-Action Alternative represents what would occur if the Army were not to carry out its Proposed Action of adopting a new Master Plan and implementation of the component plans. As a result, this alternative would result in individual ad hoc decisions being made concerning needed new facilities and infrastructure upgrades. The No-Action Alternative would preclude the use of long-range planning to prioritize, program, fund, and construct needed projects. The No-Action Alternative would result in a continuation of existing mission and growth patterns at both facilities. The No-Action Alternative addresses no routine construction activities on either installation and no updated component plans to assess them.

Under the No-Action Alternative, specific construction or demolition projects would not be implemented. Selection of the No-Action Alternative would result in continued use of existing facilities. Without implementation of the Proposed Action, the ALC and the BPRF would not adequately meet future mission requirements or changes due to aging facilities and underutilized capacity and would have increasing difficulty in supporting current and future mission goals.

- Future growth would be hampered.
- Some resource stewardship responsibilities would not be realized.
- Land use compatibilities and the functionality of the installations could decrease.
- Aging facilities would continue to deteriorate.
- Safety may be compromised.

2.4 ENVIRONMENTAL COMPARISON OF THE PROPOSED ACTION AND NO-ACTION ALTERNATIVE

Table 4 summarizes the potential environmental consequences of the Proposed Action and No-Action Alternative, based on the impact analyses presented in Chapter 3.0.

TABLE 4: SUMMARY OF POTENTIAL ENVIRONMENTAL CONSEQUENCES

Resource	Adelphi Laboratory Center		Blossom Point Research Facility	
	<i>Proposed Action</i>	<i>No-Action</i>	<i>Proposed Action</i>	<i>No-Action</i>
Land Use	The Proposed Action would result in modest land use changes at the ALC.	The No-Action Alternative would not impact land use within the Installation or in adjacent off-Post areas.	The proposed action would result in modest land use changes at BPRF, specifically from Ranges/Training to Community for the construction of a travel camp.	The No-Action Alternative would not impact land use within the Installation or in adjacent off-Post areas.
Geology, Soils, and Topography	The Proposed Action would require grading and other site preparation for new structures and pavement, and would require erosion, sedimentation, and stormwater control measures. Best Management Practices (BMPs) would be incorporated.	Under the No-Action Alternative, impacts to physical resources would continue under baseline conditions.	The Proposed Action would require grading and other site preparation for new structures and pavement, and would require erosion, sedimentation, and stormwater control measures. Best Management Practices (BMPs) would be incorporated.	Impacts to physical resources would continue under baseline conditions. In the long-term, the natural erosion processes along Nanjemoy Creek could cause increased sedimentation and have adverse impacts on soils in the vicinity.
Air Quality	Emissions generated by construction are temporary in nature and would end when construction is complete. Emissions would not result in any significant air quality impacts to the National Capital Interstate Air Quality Control Region.	No construction; no change from current emissions.	New facilities or operations would not negatively impact local or regional air quality in the long-term. Emissions generated by construction are temporary in nature and would end when construction is complete.	No construction; no change from current emissions.
Visual Resources	The removal of semi-permanent facilities and trailers and construction of a new visitor's center and the introduction of landscape plantings will positively contribute to the welcoming appearance of the ALC.	The No-Action Alternative would not affect existing conditions.	Shoreline erosion control will positively impact the visual appearance of the eroding shoreline bluffs with the introduction of plantings and materials that will blend into the existing shoreline.	The No-Action Alternative would not affect existing conditions.
Noise	Noise associated with construction would be intermittent and short-term in nature.	Under the No-Action Alternative noise would remain at baseline conditions with no construction.	Construction projects are expected to temporarily increase the noise levels on the Installation. A 10-lane 1,000 yard small arms range would be used for testing.	The No-Action Alternative would not change existing noise levels on the Installation.

Table 4 Continued: Summary of Potential Environmental Consequences

Resource	Adelphi Laboratory Center		Blossom Point Research Facility	
	<i>Proposed Action</i>	<i>No-Action</i>	<i>Proposed Action</i>	<i>No-Action</i>
Water Resources	New construction projects have the potential to increase impervious areas, which may result in an increase of stormwater runoff. The Installation's Stormwater Permit requirements include minimum control measures for new construction as well as for post construction.	Under the No-Action Alternative there would be no change in impervious surface area from construction of new facilities, expansion of existing facilities, or addition of impervious roadway surfaces.	A number of the projects would occur within the Critical Area Boundary/Buffer associated with the Chesapeake Bay Protection Act. All projects would need to be evaluated by the State of Maryland for consistency with coastal zone management regulations.	The No-Action Alternative would allow shoreline erosion to continue along portions of Nanjemoy Creek and the Potomac River. There would be no change in impervious surface area.
Infrastructure and Utilities	Includes maintenance and infrastructure improvements to bridges, HVAC systems, electrical distribution systems, sewer and stormwater lines, underground storage tanks, fire and security protection systems, and HTW.	Baseline conditions would remain unchanged. Infrastructure and utilities would remain substandard and in need of necessary repairs.	The Proposed Action would replace the electrical distribution system at the BPRF, construct a new ACP, construct a dock to launch small craft, renovate the Range Safety Control Tower and Observation Building, and pave roads.	Baseline conditions would remain unchanged. Infrastructure and utilities would remain substandard and in need of necessary repairs.
Hazardous Materials and Waste Management	Construction projects would more than likely result in special-wastes from construction, demolition, and renovation from asbestos-containing materials (ACM) and lead-based paint (LBP).	The No-Action Alternative would not change the existing storage, handling, generation, or use of hazardous or toxic materials/wastes on the ALC. There would be no change in the way solid waste is handled on-site.	A new Materials Transfer Facility for receiving and handling hazardous and explosive materials would replace Building 504.	Building 504 would still be in danger of falling into the Potomac River and boaters would be in danger since the existing Explosive Safety Quantity Distance (ESQD) arc extends over the water.
Socioeconomics and Environmental Justice	Construction would have a short-term impact by employing local construction companies. In the long term, an increase in employees will help maintain the long-term viability of the ALC. No impacts to populations of concern would occur.	Under the No-Action Alternative, no development, maintenance, or renovation would occur. No impacts to populations of concern would occur.	Construction projects would have a short-term beneficial impact on the local economy by employing local construction companies. No impacts to populations of concern would occur.	Under the No-Action Alternative, no development, maintenance, or renovation would occur. No impacts to populations of concern would occur.

Table 4 Continued: Summary of Potential Environmental Consequences

Resource	Adelphi Laboratory Center		Blossom Point Research Facility	
	<i>Proposed Action</i>	<i>No-Action</i>	<i>Proposed Action</i>	<i>No-Action</i>
Biological Resources	No federally listed species occur on the installation and no rare species occur in the proposed project area.	The No-Action Alternative would be the same as baseline conditions.	It's likely that proposed projects would impact some trees/forest areas within the Critical Area on the BPRF. Paving on Blossom Point Road will need to be coordinated with MDNR to protect a Bald Eagle nest.	The No-Action Alternative would be the same as baseline conditions.
Cultural Resources	No proposed construction projects or operations interfere with archaeological site (18PR466). Impacts to cultural resources would be expected to be negligible.	Impacts to cultural resources would not occur. Cultural resources would continue to be managed in compliance with federal law and Army regulations.	If archaeological resources were encountered during construction, work would stop at the site until the area was evaluated by a qualified professional archaeologist. The small arms range contains archaeological site 18CH156 which is eligible for the National Register of Historic Places.	Impacts to cultural resources would not occur. Cultural resources would continue to be managed in compliance with federal law and Army regulations.
Safety	Standard construction procedures and BMPs would be followed. Strict adherence to all applicable occupational safety requirements would minimize the relatively low risk associated with these construction activities.	Baseline conditions will continue under a No-Action Alternative.	The Proposed Action includes the installation of perimeter fencing, shoreline fencing, and security cameras at the BPRF. A new fire station would be constructed to provide rapid response on the BPRF. Materials and explosives of concern and munitions constituents would be cleared for the construction of a travel camp.	Baseline conditions will continue under a No-Action Alternative. Fencing and security cameras would not be installed and a new fire station would not be built.

3.0 AFFECTED ENVIRONMENT

This chapter contains the existing conditions of the affected environment necessary for the analysis of the potential environmental consequences of the Proposed Action and No-Action Alternative. The NEPA requires that the analysis address those areas and components of the environment with the potential to be affected; locations and resources with no potential to be affected need not be analyzed.

Each resource discussion begins with a definition including resource attributes and any applicable regulations. The expected geographic scope of any potential consequences is identified as the region of influence (ROI). For most resources in this chapter, the ROI is defined as the boundaries of USAG ALC and the BPRF. For some resources (such as Safety) the ROI extends over a larger jurisdiction unique to the resource.

The Existing Condition of each relevant environmental resource is described to give decision-makers a baseline from which they can compare potential future effects.

3.1 LAND USE

Land uses addressed for the ALC and the BPRF in this analysis include general land use patterns, relevant plans and ordinances, and land ownership. General land use patterns refer to the general character of a particular area on the installation.

3.1.1 ALC

The ALC is located adjacent to Hillandale, MD approximately 10 miles north of Washington, D.C. and 26 miles southwest of Baltimore, MD. The installation occupies approximately 207 acres and is located within one mile of the Capital Beltway (Interstate 495) and Interstate 95 (I-95). Figure 3 depicts the six existing land use categories at the ALC. The primary land use at the ALC is research and development with smaller land uses consisting of administration, storage and supply, maintenance, and operations.

The land adjacent to the installation has a variety of land use designations. The GSA owns a large business complex adjacent to the ALC to the north and slightly west slated as the headquarters for the U.S. Food and Drug Administration (USFDA). Areas to the east and south of the Installation are primarily rural and suburban residential in nature.

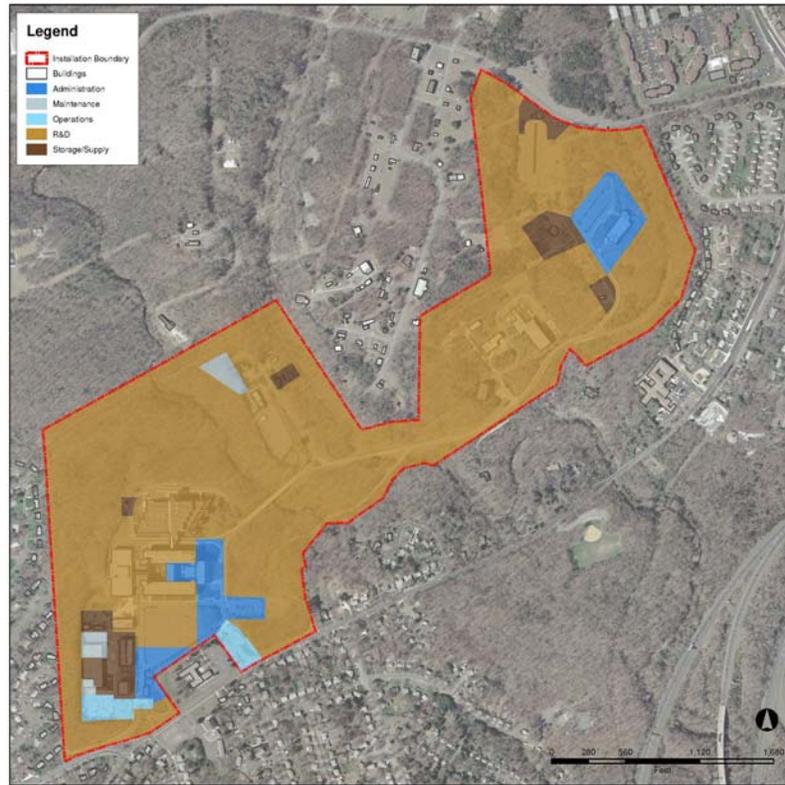


FIGURE 3: USAG ALC EXISTING LAND USE

3.1.2 BPRF

The BPRF is located in Charles County, MD approximately 50 miles south of Washington, D.C. The installation occupies approximately 1,600 acres on Cedar Point Neck, a peninsula on the north side of the Potomac. Figure 4 depicts the four land use categories at the BPRF. The primary land use is research and development with significantly smaller land uses consisting of administration, storage and supply, and maintenance.

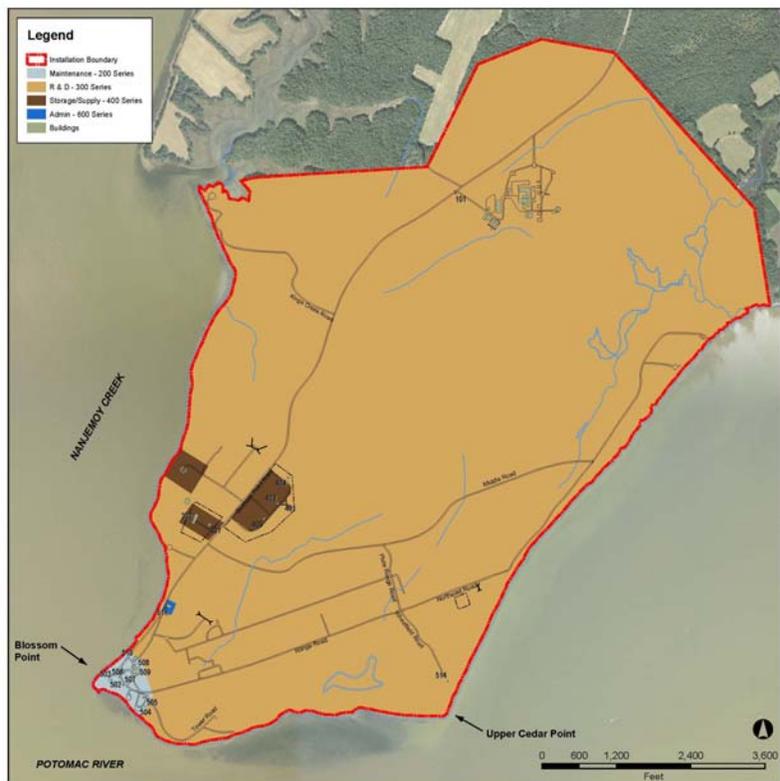


FIGURE 4: USAG BPRF EXISTING LAND USE

3.2 GEOLOGY, SOILS, AND TOPOGRAPHY

Geologic resources include subsurface and exposed rock. The inherent properties of local bedrock affect soil formation and properties, groundwater sources and availability, and terrain. Soils include particulate, unconsolidated materials formed from in place underlying bedrock or other parent material or transported from distant sources via glacial transport, water, and wind. Soils play a critical role in the natural and human environment, affecting vegetation and habitat, water and air quality, and the success of the construction and stability of roads, buildings, and shallow excavations.

3.2.1 GEOLOGY

3.2.1.1 ALC

The ALC is located at the fall line of the Piedmont Plateau and Atlantic Coastal Plain. The rolling hills and steep-sided narrow valleys characteristic of the Piedmont Plateau change at the fall line to more gently sloping hills and broad open streams. Terraces of dirty sand and gravels cover much of the gneiss and schist rock along the fall line. These terrace deposits are transported soils which were laid down as valley fill and eroded into terrace-like structures by streams rejuvenated in response to a drop in sea level.

3.2.1.2 BPRF

The BPRF lies within the Atlantic Coastal Plain physiographic province (U.S. Army Corps of Engineers, 2003). The surficial deposits are of both Recent and Pleistocene Age and are derived in large measure from erosion and redeposition of older surfaces to the west and north. Recent deposits are evident in sand bars and beach deposits that now close off earlier eroded drainage areas on the south side of the installation. Late Pleistocene deposits of Talbot Age are found beneath the recent deposits. The older Talbot sediments were laid down as terraces during a period of subsidence. An interval of elevation and erosion intervened during which the existing drainage pattern developed.

Bluffs along the shore are up to 25 feet above Mean Sea Level (MSL). Tidal fluctuations are undercutting bluffs causing erosion and slumping which poses a threat to several landfill sites and other structures. The rate of erosion due to subsurface seepage and wave action along some of the shoreline area has been estimated at between one to three feet per year based on historic trends (Wardwell, 2001).

3.2.2 SOILS

3.2.2.1 ALC

U.S. Department of Agriculture soil surveys are available for Montgomery and Prince George's Counties Maryland. Soils at the ALC consist of five series – Beltsville, Sassafras, Croom, Manor, and Hatboro. The moderately well-drained Beltsville and well-drained Sassafras series occur on nearly level land. Perched water tables may occur in the Beltsville series. The excessively well-drained Croom and well-drained Manor series occur on moderate to steep slopes, while Hatboro soils are poorly drained, silty loams occurring in stream beds.

3.2.2.2 BPRF

Surface soils are classified as part of the Elkton-Othello-Keyport association. These soils occur on level to sloping terrain and are characterized as poorly to moderately drained loamy soils (some of which have clay-like subsoil). Texture ranges from fine sand to silty loams and silty clays to coarse sands. The Elkton silt loam is the predominant soil series. The USDA lists the Elkton and Othello soil series as hydric soils.

Soil borings are required in the design stage to preclude the possibility of construction on isolated areas of low bearing strength soils.

3.2.3 TOPOGRAPHY

3.2.3.1 ALC

The topography at the ALC is characterized by rolling hills, rock outcroppings, and the Paint Branch stream valley. Elevations range from 138 to 276 feet above Mean Sea Level. Slopes on Post vary from a low of two percent to a high of forty percent in stream valleys.

3.2.3.2 BPRF

Topography at Blossom Point is characterized by rolling hills with narrow ridge tops and valleys drained by nontidal and tidal tributaries to Nanjemoy Creek and the Potomac River. Elevations range from Mean Sea Level (MSL) along the Potomac River and Nanjemoy Creek to 25 feet above MSL at Upper Cedar Point. The 4.5-mile shoreline has an average bluff height of about 20 feet above MSL. The slopes are very steep and eroding from the affects of wind and

waves. There are beaches along the bluff line where sandspits have formed across drowned valleys.

3.3 AIR QUALITY

Federal Air Quality Standards

Air quality is determined by the type and concentration of pollutants in the atmosphere, the size and topography of the air basin, and local and regional meteorological influences. The significance of a pollutant concentration in a region or geographical area is determined by comparing it to federal and/or state ambient air quality standards. Under the authority of the CAA, the U.S. Environmental Protection Agency (USEPA) has established nationwide air quality standards to protect public health and welfare, with an adequate margin of safety.

These federal standards, known as the National Ambient Air Quality Standards (NAAQS), represent the maximum allowable atmospheric concentrations and were developed for six "criteria" pollutants: ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), respirable particulate matter less than or equal to 10 micrometers in diameter (PM₁₀), sulfur dioxide (SO₂), and lead (Pb). The NAAQS are defined in terms of concentration (e.g., parts per million [ppm] or micrograms per cubic meter [$\mu\text{g}/\text{m}^3$]) determined over various periods of time (averaging periods). Short-term standards (1-hour, 8-hour, or 24-hour periods) were established for pollutants with acute health effects and may not be exceeded more than once a year. Long-term standards (annual periods) were established for pollutants with chronic health effects and may never be exceeded.

Based on measured ambient criteria pollutant data, the USEPA designates areas of the US as having air quality equal to or better than the NAAQS (attainment) or worse than the NAAQS (non-attainment). Upon achieving attainment, areas are considered to be in maintenance status for a period of 10 or more years. Areas are designated as unclassifiable for a pollutant when there is insufficient ambient air quality data for the USEPA to form a basis of attainment status. For the purpose of applying air quality regulations, unclassifiable areas are treated similar to areas that are in attainment of the NAAQS.

The USEPA promulgated attainment designations for the newly established 8-hour O₃ standard effective as of June 15, 2004. Meanwhile, states must continue to implement existing plans developed under the 1-hour standard during the transition to the new 8-hour standard. On December 17, 2004, the USEPA designated areas as attainment or non-attainment for the newly developed standard for particulates less than 2.5 micrometers in diameter (PM_{2.5}), which are fine particulates that have not been previously regulated (USEPA, 2005).

State Air Quality Standards

Under the CAA, state and local agencies may establish ambient air quality standards and regulations of their own, provided that these are at least as stringent as the federal requirements.

3.3.1 ALC

The ALC is located within the National Capital Interstate Air Quality Control Region, which includes Washington, D.C. and several surrounding counties of Maryland and Virginia. The region currently meets National Ambient Air Quality Standards for all criteria except ozone. The Metropolitan Washington region was designated as within moderate non-attainment of the 8-hour ozone standard and has a deadline of June 2010 to meet the new ozone standard.

The ALC calculates air emissions based on fuel usage and emissions factors of registered boilers. If the emissions are found to be less than 50 percent of the 25 tons per year emissions limit for nitrogen oxides, no action is required. If emissions exceed the 50 percent limit, A Title V Permit is required. The ALC's emissions fall below the 50 percent requirement. They are treated by the State of Maryland as a synthetic minor, an air pollution source that has the potential to emit air pollutants in quantities at or above the major source threshold levels, but has accepted federally enforceable limitations to keep the emissions below such levels. The ALC operates and is required to report annual emissions on seven registered boilers. Boilers #6 and #7 require quarterly fuel use reports. Because there are fewer than 12 boilers, a Title V permit is not required. There are two emergency generators located outside Building 207. These are monitored for fuel usage and duration of operation which averages approximately 10 hours per year. Operations at the ALC create no significant impacts on ambient air quality.

3.3.2 BPRF

The USEPA and the State of Maryland have established Ambient Air Quality Standards for six pollutants. They are carbon monoxide, nitrogen oxides, ozone, sulfur, lead, VOCs (Volatile Organic Compound), and PM-10 (Particulate Matter up to 10 micrometers in size). The BPRF is located in the State of Maryland's Air Quality Control Area V. All six pollutants are designated for attainment. The BPRF and the adjacent area appear to be in conformance with applicable standards. There are no manufacturing or processing activities contributing to air pollution. Vehicular traffic from the ALC activities is minimal. As a non-commercial facility with no manufacturing or processing activities, the State of Maryland does not require a permit for operations. The BPRF impact on air quality is negligible.

3.4 VISUAL RESOURCES

Visual resources consist of elements in both the natural environment and human made structures. Natural environment features include water bodies, vegetation, and mountains. Human made structures include buildings and support infrastructure. These resources impact view planes and influence the general appearance and aesthetic feel of the immediate and surrounding environments. Visual resources are analyzed to determine land use compatibility for new construction projects and the protection of important vistas and view planes.

3.4.1 ALC

Much of the ALC was built in the 1970's with Buildings 601, 112, and 207 built during the 1990's. The installation is well landscaped and maintained, having the appearance of one of the most pleasant office park environments found in the region. No particularly distinguishing

features or landmarks are located on the installation or in the nearby community. Wooded buffers screen most of the complex from the community except for the view from the main entrance along Powder Mill Road.

3.4.2 BPRF

The surrounding area on Cedar Point Neck is sparsely populated with a distinctly rural character. The BPRF has several unobstructed panoramic views of the Potomac River. The facility also includes some large tracts of gently sloping, relatively undisturbed land consisting primarily of mixed hardwood, evergreen forest, and marshland.

3.5 NOISE

Noise is defined as any undesirable sound which interferes with communication, is intense enough to damage hearing, or is otherwise annoying (Federal Interagency Committee on Noise [FICON], 1992).

3.5.1 ALC

The State of Maryland has established environmental noise standards based on land use type. For a receiving residential land use, such as the Hillandale community adjacent to the ALC, the maximum noise levels at the property line are:

- Daytime - 65 decibels (dBA)
- Nighttime - 55 dBA

The regulations define day as the period between 7a.m. and 10 p.m. (0700-2200 hours) Noise sources at the ALC include the carpenter shop in Building 103, the metal shop in Building 203, periodic testing of emergency electrical generators in Buildings 106, 202, 203, 204, 205, and 500, and outside generators servicing Buildings 207, 403, 500. Additional noise is generated by air gun testing at the Acoustics and Special Sensors Branch.

3.5.2 BPRF

According to the *Pre-Final Environmental Assessment for the Master Plan Update* (U.S. Army Corps of Engineers, 2003), the State of Maryland sets maximum allowable noise levels by zoning category for a receiving land use. The State Department of Environmental Health Administration administers these regulations. For a receiving residential land use, the noise levels at the property line are: (dBA = A weighted decibels)

- Daytime - 65 decibels (dBA)
- Nighttime - 55 dBA

Besides noise related to vehicular traffic and mowing and other ground maintenance activities, the major noise generator on the base is firing operations. These operations are performed from 8a.m. to 4p.m. (0800 to 1600 hours). Firing is intermittent and includes various numbers of rounds. Some projects require firing high-explosive projectiles.

The nearest noise-sensitive receptors are isolated individual farm residences near the shoreline of Cedar Point Neck at distances over 1.5 miles. There are no schools or churches in the immediate vicinity that the BPRF activities would impact.

Noise contours have been developed for existing detonation activities. All unacceptable noise levels (Zone III) are confined to the test area. Only a small portion of levels considered normally unacceptable (Zone II) extend outside the installation boundary, and then only into the edge of the Potomac River. All off-Post noise-sensitive receptors are located in Zone I where blast noise from the BPRF should be considered acceptable.

Acoustical testing could generate noise levels up to 155 dB at 200 Hz one meter in front of the sound generation source. When operating at full power and during enhanced propagation conditions, the higher frequencies, 10 Hz and greater, may be heard by the residents of Mathias Point Neck area. However, the sound generation system is not normally operated at full power under enhanced propagation conditions.

3.6 WATER RESOURCES

Proposed development activities within Waters of the United States (WUS), including jurisdictional wetlands, are regulated under Section 404 of the Clean Water Act. Executive Order 11990 of the Federal Register (FR) (42 FR 26961, 1977), entitled *Protection of Wetlands*, was enacted in order to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands, and to avoid direct or indirect support of new construction in wetlands, wherever there is a practicable alternative, and to ensure that proposed construction incorporates all possible measures to limit harm to the wetland.

WUS include all waters used, past or present, or susceptible to use, in interstate or foreign commerce, including tidal waters. They also include all interstate and intrastate waters, and tributaries to such waters, the sea, and wetlands adjacent to these waters as defined by the Code of Federal Regulations (CFR) (40 CFR 230.3, 2002). Wetlands are jointly defined by the USEPA and the US Army Corps of Engineers (USACE) as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances, do support a prevalence of vegetation typically adapted to life in saturated soil conditions” (40 CFR 230.3, 2002 and 33 CFR 328.3, 2002). The USACE is responsible for implementing the Section 404 regulatory program, while the USEPA has final authority over the CWA.

3.6.1 SURFACE WATER

3.6.1.1 ALC

The dominant hydrologic features on the installation are Paint Branch and its tributary, Hillendale Run. Paint Branch originates approximately six miles north of the installation, cuts in a southeasterly direction through the interior of the ALC, then flows another four miles south to its confluence with the Northeast Branch of the Anacostia River. Ultimately, the Anacostia River empties into the Potomac River, which discharges in Chesapeake Bay. Hillendale Run flows west to east across the ALC, and empties into Paint Branch in the north central portion of the installation.

A second tributary of Paint Branch is located primarily outside of the eastern boundary of the installation. This stream, parallel to Kuester Road, receives drainage from the 400 Area. Erosion and sediment control are problems along the streams within the ALC. Erosion problems occur at, but are not limited to, the Patrol Bridge crossing of the Paint Branch and the intersection at Hillendale Run and the Paint Branch. Hillendale Run brings a large quantity of water on Post.

3.6.1.2 BPRF

The BPRF is located on the north side of the Potomac River at its junction with the Nanjemoy Creek. The Nanjemoy Creek bounds the facility on the west while the Potomac River bounds the facility on the south and east.

Short streams and drainage ways dissect the research facility. There are truncated ravine heads around the marshland and large shoal areas with weakly developed channels along the shoreline.

The high tide elevation is one foot above MSL. The average tidal variation is 20 to 40 inches daily. The 100-year tidal flood elevation, established by the U.S. Army Engineer District, Baltimore, is nine feet above MSL. The facility is subject to tidal flooding. Approximately one third of the installation is located within the 100- year floodplain.

The BPRF is located within the Chesapeake Bay watershed and has been identified as a federal facility that has the potential to significantly impact the bay. Activities at the site are governed by a cooperative agreement between the U.S Environmental Protection Agency, the State of Maryland, and the Department of Defense to restore water quality within the bay. Activities must be consistent with the Maryland Tidal Wetland Act, the Non-tidal Wetlands Protection Act, and Chesapeake Bay Critical Areas Act.

3.6.2 FLOODPLAINS

3.6.2.1 ALC

Executive Order 11988 requires all federal Agencies to evaluate the potential effects of any actions it may take in a floodplain to ensure that planning programs and budget requests reflect consideration of floodplain management and provides opportunity for early public review of any plans or proposals for actions in floodplains. The 100-year flood elevation at the ALC is approximately 155 feet above mean sea level along Paint Branch. This floodplain, which occupies approximately eight acres of land, is generally within the protective stream clearances.

3.6.2.2 BPRF

The BPRF is located on the north side of the Potomac River at its junction with Nanjemoy Creek. Nanjemoy Creek bounds the facility on the west while the Potomac River bounds the facility on the south and east. Short streams and drainageways dissect the research facility. There are truncated ravine heads around the marshland, as well as large shoal areas with weakly developed channels along the shoreline.

Executive Order 11988 requires all Federal Agencies to evaluate the potential effects of any action they may take in a floodplain to ensure that their planning programs and budget requests reflect consideration of floodplain management and provide opportunity for early public review of any plans or proposals for actions in floodplains. The 100-year tidal flood elevation, established by the U.S. Army Engineer District, Baltimore, is 9.0 feet above MSL. Approximately one-third of the installation (500 acres +/-) occurs within the 100-year floodplain.

3.6.3 GROUNDWATER

3.6.3.1 ALC

Groundwater depth is dependent on the surface elevation and ranges from approximately 15 feet to more than 50 feet below ground surface. The water table is near the base of the terrace deposits where they occur. Groundwater bulges in the terraces should be expected for several days following a heavy rain, as these materials are significantly more permeable than the residual soils and saprolite.

According to the *RCRA Facility Assessment Update* (Adelphi Laboratory Center, 1998), installation restoration programs conducted by both the Army and the Navy identified two sites as significantly contaminated. The more serious environmental issue at the ALC is the groundwater and surface water contamination. The first site is located in the general vicinity of Building 500. A second site was identified which detected chlorinated solvents in the groundwater originating from an abandoned chemical disposal pit on the former Navy property adjacent to the northwest corner of the ALC. However, concentrations of contaminants were far smaller than those seen at the Building 500 site.

Contaminated groundwater may be a potential issue to address in future development of Department of Army (DA) property where contamination plumes exist from the former Navy site. The most serious consequence of the groundwater contamination is its effect on former drinking water wells south of the installation's boundary. The Navy has mitigated this issue by providing the two affected families access to the Washington Suburban Sanitary Commission's sewage and drinking water services.

3.6.3.2 BPRF

Groundwater is the source of potable water supply for the BPRF. The BPRF drinking water well is screened in the Raritan and Patpsco sands at a depth of approximately 300 feet below MSL with a static water level of 60 feet below MSL. The BPRF well is located beneath Building 509. Two wells, one active, potable well and one inactive, capped well, are present at Blossom Point; there is no groundwater contamination and the water is safe to drink. The Naval Research Laboratory (NRL) facility on the BPRF maintains a separate well and water supply system.

3.7 INFRASTRUCTURE AND UTILITIES

The infrastructure elements at the ALC and the BPRF include transportation and utility systems that service each installation. Transportation refers to roadway and street systems. Utilities include electrical distribution, heating systems, water, and wastewater systems.

3.7.1 POTABLE AND NON-POTABLE WATER SUPPLY SYSTEM

3.7.1.1 ALC

The Washington Suburban Sanitary Commission (WSSC) provides water and sewerage services to the ALC. All collection systems are Government owned and maintained. Water consumption levels for FY 09 were 32.5 million gallons. This consumption includes water for laboratory, domestic lawn irrigation, and cooling tower operations. An emergency backup 10-inch water main, connected to the GSA 10-inch line at the intersection of Isherwood Road and Browne Road on the former Naval Surface Warfare Center (NSWC) property, connects the former NSWC facility to the ALC Buildings 500 and 504, creating a loop. The GSA maintains and operates the metering equipment and a WSSC approved back-flow prevention device at the connection. This line, however, has fallen into disrepair, was shut off, and is no longer in service. GSA owns an eight-inch water line crossing the ALC.

3.7.1.2 BPRF

Potable water at the BPRF is obtained from a well (302 feet deep) located under the Well House, Building 509. The well water is treated with a liquid calcium hypochlorite solution as the water is pumped from the well through a 1½-inch line. The water is stored in a 50 gallon storage tank located in the Well House. Another 40 gallon storage tank is located at Building 511. Water is discharged into the distribution system from the storage tank. The Army uses a reverse osmosis system in three buildings for drinking water with an operational capacity of 10 gallons per minute. A contractor visits every 6 months to change the filters and monitor the system.

The NRL Blossom Point Tracking and Command Facility has a separate well and distribution system. They use a combination of bottled water and well water for drinking.

3.7.2 WASTEWATER SYSTEMS

3.7.2.1 ALC

The Washington Suburban Sanitary Commission (WSSC) sewerage system serves the ALC. The WSSC Paint Branch Outfall Sewer runs through the central portion of the ALC along Paint Branch from the research and service complexes. Approximately 22 million gallons of wastewater was treated in FY 09. The rate of flow used to be controlled by the pumping rate from a 35,000-gallon sewage holding tank. A 10- inch bypass around this tank permits flow directly to the meter. The line to the holding tank has been blocked with brick and grout. Flow monitoring of the wastewater from the 400 and 500 Areas is not conducted as it flows directly to the WSSC. Instead, the wastewater flows for those areas are estimated based on water consumption. The ALC follows the WSSC Discharge Authorization specifying what may be discharged into WSSC's Sewerage system. The sewage is treated at the Blue Plains Sewage Treatment Plant.

3.7.2.2 BPRF

Wastewater from the BPRF latrine (Building 511) is treated by a mound system that uses evaporation, rather than a filtration system, with an existing capacity for about 65 people. Solids are collected in a tank and removed every year by a private contractor. The solid tank is 1500 gallons and the gray water tank is 2500 gallons. The NRL facility operates and maintains a septic tank with tile field disposal and several aboveground sand mound disposal systems. The BPRF's collection lines and septic tank are adequate to serve existing flow conditions and with proper maintenance, the system should continue to provide the required service. An NPDES permit is not required since there are no point source discharges at the facility.

3.7.3 POWER DISTRIBUTION AND HEAT PLANT

3.7.3.1 ALC

Electrical power is provided by the Potomac Electric Power Company (PEPCO). Service is provided by two 69 kV three phase feeders that originate at one PEPCO substation, Metzert-East. Near the south gate exit to the ALC, the overhead feeders are taken underground and run in conduit and duct to the ALC's substation, Building 107. The transformers, substation, underground duct bank system, and all lines on the installation are owned and maintained by the ALC. PEPCO owns the two 69 kV feeders.

The ALC has a central Heating and Cooling Plant, Building 106, which serves Areas 100 and 200 (with the exception of Buildings 104, 105, 107, S108, and Trailer Groups I and II) and has dual-fuel boilers. ALC uses more natural gas than fuel oil. High temperature water (HTW) is distributed through underground lines at a maximum of 400° F and 375 psig. There is an overall design 150°-system temperature drop. Expansion loops are provided in the pipeline. Each building that is heated has an automatic HTW differential pressure valve in the supply line and a series of heat exchangers. HTW generators are dual-fueled. Oil storage consists of 30,000-gallon underground tanks with a high level capacity of 27,500 gallons each. The ALC has 3 tanks, for a combined capacity of 82,500 gallons. These tanks were installed and designed to hold approximately a 16-day supply of heating oil. Building S-108 and facilities in the 400, 500, and 600 Areas utilize their own individual heating systems.

3.7.3.2 BPRF

Electrical power is provided by Southern Maryland Electric Cooperative (SMECO). Overhead primary conductors enter from Blossom Point Road then are brought to the transformer where it steps down. From there they are brought overhead to 19 active transformers, and underground to two pad mounted transformers for the Acoustic/Electro-Optics Propagation Site range.

Of three connections, only the service at the gate is normally energized. The main service extends from the platform metering station throughout the site through a government owned two-wire, overhead, 2,400 volt radial distribution system. Secondary service where required at the facility, is provided at 120/240 volt, single phase, three wire and is derived by tapping the existing overhead primary conductors and feeding government owned pole-mounted transformers.

Emergency generators used for research are mobile. They use 60kVAs. Streetlamps use 200-watt high pressure sodium lamps. Security lighting at the bunkers is 200 mercury vapor lamps. The

BPRF's existing electrical distribution system consisting of 7 miles of lines is adequate to serve current requirements. The upgrading of service to three-phase is under consideration. The NRL Blossom Point Tracking and Command Facility are supplied with three phase 7,200 kV service from the SMECO overhead conductors along Blossom Point Road.

Heated buildings include 301, 501, 503, 504, 506, 507, 509, 511, 512, and 514. Buildings 301, 501, 503, 509, 512, and 514 are heated by electricity. Building 504 is heated by hot water. Building 507 is oil fired. And Buildings 501A, 506, and 511 are heated by electricity and propane. Buildings 301, 506, 511, 512, and 513 are cooled using electricity.

3.7.4 TRANSPORTATION

3.7.4.1 ALC

I-495 (the Capital Beltway) provides regional access to the ALC vicinity. It is an eight-lane divided interstate highway and carries between 197,950 and 205,400 vehicles per day.

Powder Mill Road (Maryland Route 212) provides direct access to the ALC main entrance at Floral Drive. In the vicinity of the ALC, Powder Mill Road is a two-lane roadway running east west. East of Cherry Hill Road it becomes a four-lane roadway and has an interchange with I-95. Average daily traffic along Powder Mill Road in the vicinity of the ALC's front gate is 23,963 vehicles per day.

Cherry Hill Road, also classified as an arterial, runs north-south and intersects with Powder Mill Road at the east side of the base near the back gate (currently closed). In the vicinity of the ALC Cherry Hill Road consist of four lanes and carries an average daily traffic flow 27,168 vehicles per day.

The existing road network on the installation is adequately located and sized to serve existing, interim and future conditions. The installation is served by six internal roadways: Floral Drive, North Avenue, South Avenue, Glenmore Drive, Kuester Road, and Chance Road.

Floral Drive is the primary road on the installation and is classified as a Collector. It traverses the entire installation from the main entrance at Powder Mill Road to the back gate (currently closed) at Dahlgren Road. At the main gate, Floral Drive is a four-lane divided roadway and maintains an Average Daily Traffic (ADT) of 3,362 vehicles per day. At North Avenue and throughout the rest of the installation, Floral Drive narrows to two-lanes and drops to an ADT of 638 vehicles per day. Along Floral Drive, a bridge of 470 feet crosses Paint Branch.

North Avenue, South Avenue, and Glenmore Drive are two-lane, two-way secondary roads that provide vehicular access to the main administrative/laboratory complex in the 200 Area. The remaining roads, Kuester Road, Diamond Road, Aurora Drive, and Chance Road, are classified as tertiary. A gravel patrol road, 10 feet in width, follows the installation's southern perimeter from the former NSWC boundary at the western end of the installation to its intersection with Floral Drive, approximately 750 feet east of Kuester Road. The patrol road bridge is currently impassable and needs repairs. There is also a gravel patrol road on the western boundary of the installation.

3.7.4.2 BPRF

U.S. Route 301 is the only principal arterial highway in Charles County. This road carries a high volume of traffic for interstate and intrastate travel. In 2000 the total average daily traffic on this route exiting the County into Prince George's County exceeded 62,000 vehicles per day. These volumes reflect the importance of this route as a major connector to Prince George's County, and a commuter route in Washington, D.C. and Northern Virginia.

Access to the BPRF from U.S. Route 301 at La Plata is through Maryland Route 6, the primary east-west road in the area designated as a major collector. From the Maryland Route 6 intersection, Cedar Point Road and Blossom Point Road provide access to the installation. Blossom Point Road provides the only access to the installation. There is only one Access Control Point (ACP) at the BPRF.

All roads at Blossom Point are classified as local roads. Blossom Point Road provides the main (and only vehicular) access to the site. From this location it continues within the installation to its termination at Blossom Point as a 14 to 16 foot gravel road.

3.8 HAZARDOUS MATERIALS AND WASTE MANAGEMENT

Hazardous materials are identified and regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Occupational Safety and Health Administration (OSHA); and the Emergency Planning and Community Right-to-Know Act (EPCRA). Hazardous materials have been defined in AFI 32-7086, *Hazardous Materials Management*, to include any substance with special characteristics which could harm people, plants, or animals. Hazardous waste is defined in the Resource Conservation and Recovery Act (RCRA) as any solid, liquid, contained gaseous or semisolid waste, or any combination of wastes that could or do pose a substantial hazard to human health or the environment. Waste may be classified as hazardous due to its toxicity, reactivity, ignitibility, or corrosivity.

3.8.1 ALC

Hazardous waste regulated by the RCRA and State of Maryland is stored in Building 104 when held for greater than 90 days. The Hazardous Waste Storage Facility Permit is currently in the renewal process. Biannual reporting of hazardous waste generation is made to the State of Maryland.

Laboratory use of chemicals is determined by current projects. Chemical storage is in the basement of the Zahl Building (Building 207), in the Central Chemical Storeroom. The DPW Environmental Division is responsible for operating the Central Chemical Storeroom/Pharmacy.

Building 103 has pesticide storage and a mixing area operated by an Army certified pest controller. Chemicals are mixed and used in accordance with the requirements contained in Technical Manual 5-632 and Senate Bill 3-40. All chemicals used are listed in federally approved chemical lists. Each month a report is prepared stating what and how chemicals are used.

The ALC Pest Management Plan includes a detailed listing of routine chemicals procured and stored at the installation and quantities used.

Solid waste generation has been decreasing at the installation while diversion of solid waste to recycling is increasing. In FY08, solid waste generation was 341.14 tons. Of this, 89.24 tons (26.16%) was diverted to recycling. In FY09, solid waste generation was 275.56 tons. Of this, 98.62 tons (35.79%) was diverted to recycling. Solid waste generation and recycling is identified as a significant aspect in the installation Environmental Management System. A target to divert 40% of solid waste generated to recycling by the end of CY10 has been established. With the new Executive Order 13514 requiring 50% diversion by 2015, the ALC will continue to work on decreasing solid waste generation and increasing diversion to recycling.

3.8.2 BPRF

The BPRF is not used for weapon storage or stockpiling. However, minimal amounts of ammunition may be temporarily stored on site prior to scheduled test activities. The majority of ordnance required for a test event is transported to the BPRF from Aberdeen Proving Ground. The ammunition is stored in bunkers in the designated explosive storage area (Buildings 403, 404, 405, and 409). A 900-ft fragment distance is designated around this storage area to allow the temporary storage of high explosives. Operations and personnel restrictions apply in this area while high explosives are being temporarily stored. There is a 670-foot Explosive Safety Quantity Distance (ESQD) arc surrounding the Ordnance Loading Building (Building 504).

Scrap debris generated by research activities is transported to the US Army Aberdeen Proving Grounds for disposal. Ordnance research personnel render safe explosives in the vicinity of firing range impact areas. Some of these explosives are detonated in place.

Unexploded ordnance from over 40 years of testing at the BPRF contaminates a considerable portion of the installation with heaviest contamination south of Middle Road and along Nanjemoy Creek. High explosives were used in past testing and the small function indicator charges could be lethal within 50 feet of detonation. The BPRF ranges operate under USEPA's "munitions rule," 40 CFR 260 et. seq. 3.8.5

Electromagnetic and Radiation Safety at BPRF operates a standard pole research facility to determine electromagnetic radiation patterns of fuzes and to measure fuze sensitivity. Radar and radio frequency energy sources used in this testing generally involve safety hazards only at relatively close distances to the sources, and Standard Operating Procedures insure safety during these tests. The Navy's NRL antenna requires a one-half mile diameter buffer zone for -100 dBm acoustical isolation and a vertical clearance from a 500-foot diameter horizontal plane of 1.3 degrees to the horizon.

3.9 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

Socioeconomic factors are defined by the interaction or combination of social and economic factors. The relevant factors related to the Adelphi Laboratory Center and Blossom Point Research Facility includes population and housing, economic development, and quality of life/health and safety issues.

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs federal agencies to address environmental and human health conditions in minority and low-income communities. In addition to environmental justice

issues are concerns pursuant to EO 13045, Protection of Children from Environmental Health Risks and Safety Risks, which directs federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children.

For the purposes of this analysis, minority, low-income and youth populations are defined as follows:

- **Minority Populations:** Persons of Hispanic origin of any race, Blacks, Asians, Native Americans
- **Low-Income Population:** Persons living below the poverty level
- **Youth Population:** Children under the age of 18 years

3.9.1 POPULATION AND HOUSING

3.9.1.1 ALC

The ALC is located in northeastern Montgomery County, Maryland with a portion of the installation crossing into Prince George's County, Maryland. In 2007 Montgomery County had a population of 930,813 and Prince George's County had a population of 828,770 (*U.S. Census Bureau, 2005-2007*). White Oak and Fairland are the two closest neighboring communities.

In 2007 White Oak had a total population of 20,665. The typical White Oak area household is a college educated, married couple between the ages of 25 and 54. The 2007 median household income was \$67,959 (*U.S. Census Bureau, 2005-2007*).

The White Oak area has a total of 8,107 housing units offering a variety of housing types. Of the 8,107 housing units offered in White Oak in 2007 single-unit detached homes accounted for 38.8 percent, single-unit detached homes accounted for 6.3 percent, multi-units accounted for 54.7 percent, and other accounted for 0.3 percent (*U.S. Census Bureau, 2005-2007*).

In 2007, the community of Fairland, located approximately three miles north of Adelphi, had a total population of 21,312. This population primarily consists of college educated, married couples between 25 and 54 years of age. The 2007 the median household income was \$70,059 (*U.S. Census Bureau, 2005-2007*).

The Fairland area has total of 9,305 housing units offering a variety of housing types. Multi-units made up the majority of housing types with 48.7 percent in the Fairland area in 2007. Single-unit detached housing accounted for 23.1 percent of the housing stock and single-unit attached made up 28.3 percent of households (*U.S. Census Bureau, 2005-2007*).

3.9.1.2 BPRF

The BPRF resides in Charles County, MD and had a 2007 population of 140,444 (*U.S. Census Bureau, 2005-2007*). The nearest population center is the town of La Plata, MD with a total 2007 population of 8,787. The typical La Plata household is high school educated, those with some college, and married couples between 25 and 54 years of age. The 2007 median household income was \$56,490 (*U.S. Census Bureau, 2005-2007*). La Plata has a total of 2,324 housing units consisting of primarily attached and detached single-unit homes. Single-unit detached housing accounted for 52.5 percent of the housing stock and single-unit attached made up 29 percent of

households (*U.S. Census Bureau, 2005-2007*). Multi-units made up 18.6 percent of the La Plata housing stock in 2007 (*U.S. Census Bureau, 2005-2007*).

3.9.2 ECONOMIC ACTIVITY

3.9.2.1 ALC

Employment in the area is strong. The number of employed residents in the Washington Metropolitan Area grew by 7.7 percent between 2001 and 2004. The number of employed residents grew by 9 percent in the suburbs. Service sector jobs led this increase followed by big gains in the retail and wholesale trade and construction jobs. During this same period, the number of full and part-time jobs in Montgomery County increased by 1.9 percent and decreased by a mere 0.1 percent in Prince George's County.

There are approximately 12,028 jobs in the White Oak area today. The types of jobs range from office, retail, and industrial to home occupations. The employment forecast anticipated that there would be an influx of approximately 3,000 jobs to the federal facilities of NSWC and the ALC. However, the 1995 Base Realignment and Closure (BRAC) recommended closure of the NSWC, which eliminated approximately 1,200 jobs. In the autumn of 2005, the FDA reintroduced 1,700 jobs to the area as it assumed residence at the former NSWC site. It is expected this number will rise to 8,889 as the FDA consolidates its headquarters at the renovated site and approves a Master Plan Update.

As of 2005, Fairland jobs were estimated at 16,327, an increase of 10,500 jobs since 1980, with no major road upgrades. Fairland offers a wide variety of employment opportunities, which largely fall into the categories of office, retail, and industrial.

3.9.2.2 BPRF

The County's natural resources have played an important role in its economy. For most of its history, tobacco and other agricultural crops, as well as the seafood industry, have dominated the Charles County economy.

However, in the past 20 years, the importance of services, trades, and other sectors of the economy has increased substantially as the area has become more suburban.

The increase in residential growth within Charles County has allowed retail and commercial services to thrive. Industrial and business park developments are also being built along the U.S. Route 301 corridor in Waldorf and St. Charles City. The extent to which the market can absorb the planned commercial and industrial development will have a profound effect on the future economic structure of the county.

Cedar Point Neck is mainly farmland with several marinas located along the Potomac River. According to Charles County planners, there are no plans for additional development on Cedar Point Neck, which is located in an area known as the Agricultural Preservation District. The County is instead encouraging development in other areas with better access to the established utility system service.

3.9.3 ENVIRONMENTAL JUSTICE

3.9.3.1 ALC

To comply with EO 12898, ethnicity status in the vicinity of the ALC was examined and compared to state data. White Oak and Fairland have significant minority populations; in fact minorities are the majority ethnic group in these two communities. White Oak with a minority population of 62.5 percent and Fairland with a minority population of 67.6 percent are significantly higher than the state minority population of 37.7 percent (U.S. Census Bureau, 2005-2007). In Fairland, blacks account for 44.4 percent of the total population and 66.6 percent of the minority population. In White Oak, blacks account for 41.9 percent of the total population and 64.4 percent of the minority population.

To comply with EO 12898, poverty status in the vicinity of the ALC was examined and compared to state data. The incidence of persons and families in White Oak with incomes below the poverty level at 8.9 percent was comparable to the state level of 8.2 percent. In Fairland 4.9 percent of the population are low-income families, significantly less than the state percentage of 8.2 percent (U.S. Census Bureau, 2005-2007). Both communities have significantly lower than average percentage of low income families in comparison to U.S. percentages.

To comply with EO 13045, the number of children under age 18 was determined for the vicinity of the ALC and compared to state levels. In 2007, there were 5,014 children age 17 and under residing in Fairland, comprising 23.5 percent of the population. In 2007, there were 5,411 children age 17 and under residing in White Oak, comprising 26.2 percent of the population. In comparison, children age 17 and under comprised 24.4 percent of the population of Maryland and 24.7 percent for the nation. The populations of Fairland and White Oak, Maryland, and the U.S. have comparable populations of children under 18 years of age.

Table 5 identifies the demographics of White Oak, Fairland, Maryland, and the United States.

TABLE 5: ALC DEMOGRAPHICS BY AREA COMMUNITY

	<i>Total Population</i>	<i>Percent Minority</i>	<i>Percent Low-Income Families</i>	<i>Percent Youth (Under 18)</i>
White Oak	20,665	62.5%	8.9%	26.2%
Fairland	21,312	67.6%	4.9%	23.5%
Maryland	5,597,843	37.7%	8.2%	24.4%
United States	298,757,310	24.3%	13.3%	24.7%

(U.S. Census Bureau 2005-2007)

3.9.3.2 BPRF

Blacks are the primary minority population in La Plata, MD, accounting for 12.3 percent of the population. The overall percentage of minorities in La Plata is slightly greater than the US and less than the state of Maryland. The youth population is slightly greater than the US and Maryland percentages.

Table 6 identifies the demographics of La Plata, Maryland, and the United States.

TABLE 6: BPRF DEMOGRAPHICS BY AREA COMMUNITY.

	<i>Total Population</i>	<i>Percent Minority</i>	<i>Percent Low-Income Families</i>	<i>Percent Youth (Under 18)</i>
La Plata	8,787	27.5%	8.3%	25.7%
Maryland	5,597,843	37.7%	8.2%	24.4%
United States	298,757,310	24.3%	13.3%	24.7%

(U.S. Census Bureau 2005-2007)

3.10 BIOLOGICAL RESOURCES

Biological Resources refers to non-domestic organisms that may be found within and potentially affected by project elements associated with the Proposed Action. The biological resources category includes all native and introduced plant and animal species and the habitats, including wetlands, within which they occur. Functional groups of species that are linked by ecological processes within a defined area are referred to as ecological communities. These communities may be either terrestrial or aquatic. Federal and state laws and regulations that apply to biological resources include: Fish and Wildlife Coordination Act, Migratory Bird Treaty Act, Clean Water Act (CWA), NEPA, Endangered Species Act (ESA), Sikes Act, and state laws protecting plants and nongame wildlife.

3.10.1 TERRESTRIAL COMMUNITIES AND WILDLIFE

3.10.1.1 ALC

The ALC is generally considered to be in a residential-urban to rural-suburban area. Undeveloped forest lands are contiguous with undeveloped forest land associated with the former NSWC. Collectively, this forest is a locally important wildlife resource as it is surrounded by developed or managed land uses. Its availability for use by wildlife having a forest preference is important; as such forest lands are regionally decreasing in acreage as development occurs. There is currently no wildlife management (e.g. hunting or trapping) or fishing program at the ALC due to the urban nature of the environment. White-tailed deer occur at populations above the biological carrying capacity and consequently a deer management task force has been formed. For non-game wildlife, blue bird boxes have been erected onsite.

3.10.1.2 BPRF

The installation is suitable for many species of wildlife because of the diversity of habitats. Approximately 9,000 feet of 7 foot chain link fencing has been installed from the road to the water's edge (Port Tobacco Creek and Nanjemoy Creek) on each side of the road. Deer can still pass relatively freely through the area. The most common game species is the white-tailed deer. Other wildlife includes gray squirrel, eastern cottontail, woodchuck, bob white, mourning dove, black duck and wood duck. Fur bearing species include opossum, mink, muskrat, striped skunk, beaver, raccoon, and gray fox.

Hunting is permitted in designated areas of BPRF. The hunting program, part of the Natural Resources Program at BPRF and established in cooperation with the State of Maryland, is permitted from established stands.

Due to reintroduction efforts between 1992 and 1995, a resident population of wild turkeys exists on the installation, but is not open to harvest. Non-game species management, as with forest-interior and grassland birds, is also conducted with assistance from federal and state wildlife agencies. Natural resource personnel maintain osprey nesting platforms at the BPRF.

3.10.2 FISHERIES AND AQUATIC RESOURCES

3.10.2.1 ALC

Spawning areas for brown trout, an important sport fish, are found upstream of the ALC in the upper part of Paint Branch (the area upstream of Fairland Road). The Montgomery County Council has designated this area as a Special Protection Area based on its trout spawning capability, high water quality, and the threat posed by the intensity of existing and future development in the watershed.

3.10.2.2 BPRF

The fishing program at the BPRF is open to the public by permit. Fishing is allowed along the shoreline of Nanjemoy Creek only. No docks, piers or boat launch facilities exist at the site. The research facility also has a Fish and Wildlife Management Plan that regulates both land management and fish and wildlife management.

3.10.3 WETLANDS AND OTHER WATERS OF THE U.S.

3.10.3.1 ALC

A 1999 survey conducted by the Baltimore District Corps of Engineers documented 14 acres of wetlands at the ALC along the flood plains of Paint Branch and the Hillandale Run.

Paint Branch's 20,160-acre watershed, a sub-basin of the larger Anacostia River Basin, extends from Spencerville Road through the White Oak Planning Area and into Prince George's County where it meets the Northeast Branch of the Anacostia River. Paint Branch is one of the least intensively developed sub watersheds of the Anacostia. It is designated by the State of Maryland as a Use III watershed upstream of the Capital Beltway, since it supports a naturally reproducing brown trout population. This category has the highest water quality of any of the states designated uses, and as such, Paint Branch maintains a diverse ecological community, especially in the upper reaches. Small areas of the ALC are subject to flooding. Approximately

eight acres of the installation are within the 100-year floodplain, which is less than 155 feet above mean sea level.

3.10.3.2 BPRF

Wetlands are extensive at the BPRF. A 1994 wetland survey documented a total of 229 acres of wetlands, or 14 percent of the installation. The BPRF contains 92 acres of palustrine emergent marsh, 87 acres of estuarine marsh, 37 acres of palustrine forested wetland, and 13 acres of palustrine scrub-shrub wetland. Dominant wetland vegetation includes common cattail (*Typha latifolia*), sedges (*Carex* spp. and *Cyperus* spp.), and common reed (*Phragmites australis*) in marshes, while high bush blueberry (*Vaccinium corymbosum*), red maple (*Acer rubrum*), and sweet gum (*Liquidambar styraciflua*) are dominant in forested wetlands. The estuarine marsh and emergent marsh wetlands represent important feeding, resting, and cover areas for migratory and resident birds and waterfowl. A State of Maryland waterfowl management program is currently in place at the BPRF. Activities on the BPRF must also be determined as consistent with the Maryland Tidal Wetland Act, Non-tidal Wetlands Protection Act, and Chesapeake Bay Critical Areas Act. Activities within 25 feet of non-tidal wetlands must be coordinated with the Maryland, Non-tidal Wetlands and Waterways Division. Also, the BPRF has several ponds in its tidal marsh areas with water depths less than two feet.

3.10.4 THREATENED AND ENDANGERED SPECIES AND SPECIAL STATUS SPECIES

3.10.4.1 ALC

No Federally Threatened, Endangered, or Special Status species occur on the ALC. Rare species have been documented by the Maryland Department of Natural Resources in the Powder Mill Bog adjacent to Paint Branch Stream Valley Park west of Powder Mill Road, on the ALC (Table 7).

TABLE 7: SPECIAL STATUS SPECIES ON USAG ALC

Scientific Name	Common Name	Status	Location
<i>Eriocaulon decangulare</i>	Ten-angled Pipewort	G5, S2	Montgomery & Prince George's Counties
<i>Juncus longii</i>	Long's Rush Fern	G3Q, S1, E	Montgomery County
<i>Pogonia ophioglossoides</i>	Snakemouth Orchid	N/A	N/A
<i>Rhynchospora cephalantha</i>	Bunched Beaksedge	N/A	N/A
<i>Solidago uliginosa</i>	Bog Goldenrod	G4G5, S2, T	Montgomery County

Source: Maryland Department of Natural Resources Wildlife and Heritage Service 2007

3.10.4.2 BPRF

The BPRF conducted an Endangered Species survey in 1999. Of the four species targeted in the survey the only species located on-site was the Bald Eagle (*Haliaeetus leucocephalus*). There are currently five active nesting pair of Bald Eagles at the BPRF and two protected nest sites which are currently inactive, but which have been active within the last five years. No nest reconstruction of the two inactive sites has been observed. The location of the nests are documented and mapped. In July 2007, the Bald Eagle was removed from the Federal List of Endangered and Threatened Wildlife and Plants. Bald Eagles will continue to be protected by the Bald and Golden Protection Act and the Migratory Bird Treaty Act.

3.10.5 VEGETATION

3.10.5.1 ALC

Vegetation at the ALC is a mix of oak-hickory-pine forest and Appalachian oak forest. Species found on the installation include the following:

- Oak-Hickory-Pine Forest:
 - Dominant Species - Hickories, loblolly pine, and white and post oaks
 - Subdominant Species - Blackgum, tulip poplar, sweetgum, persimmon, flowering dogwood, sourwood, Virginia pine, and a variety of oak species.
- Appalachian Oak Forest:
 - Dominant Species - White and northern red oaks.
 - Subdominant Species - Red and sugar maple, yellow birch, hickories, tulip poplar, sweetgum, beech, and several oak species.

The ALC does not contain 100 or more acres of commercial forest land and therefore does not require the development of a Forest Management Plan. A firewood sales program is managed at the site in order to provide for the most effective use of the forest resource. Gypsy moth infestations are a continuing threat to the hardwoods and could produce significant damage to the ALC's forest resources. The moth is found throughout the State of Maryland in its preferred oak forest habitat. Annual aerial surveys for gypsy moth defoliation are conducted by the U.S. Department of Agriculture's Forest Service.

Two buffers need to be maintained at the installation: the boundary buffer and the stream protective buffer. The boundary buffer provides the 150-foot separation along the installation boundary between the ALC and the adjacent community. This boundary was established as part of the Master Plan for the Harry Diamond Laboratory in 1968 and approved by the NCPC in 1971. Changes to this policy must be approved prior to any changes being made.

A stream protective buffer must be maintained adjacent to Paint Branch and its tributaries. The State of Maryland designates these waterways as Class III - Natural Trout Waters. Montgomery County, Maryland guidelines for environmental management of development recommend a minimum buffer width of 200 feet from the stream bank when slope ranges are 25 percent or

greater. This 200-foot buffer is applicable to Paint Branch. A 150-foot buffer is to be maintained on the Paint Branch tributaries within the boundaries of the ALC. In addition, the aluminum-grid and chain link fence barriers along the northernmost and southernmost Paint Branch boundaries are the two single greatest sources of environmental contamination to the Paint Branch from Army property (Survey, URS Corp, 13 Nov 03). These stream barriers, which should be replaced with a material more environmentally friendly; need to be manually cleaned following every storm event. At a minimum, any rebuild of the Patrol Road Bridge must incorporate a mechanism for the smooth release of floating debris during storm events.

3.10.5.2 BPRF

Before being cleared for development and agriculture, the BPRF was originally classified as an oak-hickory-pine forest. Medium to tall forestland of broadleaf deciduous and needleleaf evergreen trees were characteristic of the area.

Currently, vegetation types within the installation include approximately 5 acres of maintained lawn, 900 acres of forestland, 550 acres of flat, grassy land, and 148 acres of tidal marsh. Tree cover consists of natural stands of mixed maples, oaks, black locust (*Robinia pseudoacacia*), black walnut (*Juglans nigra*), sweetgum, blackgum (*Nyssa sylvatica*), ash (*Fraxinus* spp.), willow (*Salix* spp.), tuliptree, Virginia pine (*Pinus virginiana*), red cedar (*Juniperus virginiana*), and American holly. There are scattered sumac (*Rhus* sp.), poplar (*Populus* sp.), and sycamore (*Platanus occidentalis*) along the streams and swamps. Shrubs and small trees include elderberry (*Sambucus canadensis*), bayberry (*Myrica heterophylla*), autumn-olive (*Elaeagnus* sp.), dogwood (*Cornus* spp.), magnolia (*Magnolia* spp.), and redbud (*Cercis canadensis*).

Although the BPRF does not currently harvest timber, there are nine designated timber compartments on the installation. U.S. Army Corps of Engineers Water Experiment Station forestry personnel performed a timber cruise and vegetation survey of the facility in 1996. Recommendations from the survey included reducing Virginia pine stands and gradually replacing them with loblolly pine. Prescribed burning in pine stands was also recommended. Control of American holly in hardwood stands and some thinning of hardwoods were also recommended.

Range management practices have changed over the years. Ranges were once fully cleared. Current practices allow ranges to revert to grassy vegetation. Appropriate areas are maintained and cleared as firebreaks. Firebreaks, at least 50-foot wide, are required around each aboveground magazine.

3.11 CULTURAL RESOURCES

Cultural resources are any prehistoric or historic, site, building, structure, or object considered important to a culture for scientific, traditional, religious, or other purposes.

Archaeological resources are sites with artifacts, structures, remains, and monuments of prehistoric and historic peoples. These sites typically require excavation in order to uncover remains and artifacts from earth that has been considerably altered by past human activities.

Historic properties (as defined in 36 CFR 60.4) are significant archaeological, architectural, or traditional resources that are either eligible for listing, or listed in, the National Register of Historic Places (NRHP). Buildings generally must be 50 years or older in order to qualify for NRHP designation, although there are exceptions for properties with historical significance that are less than 50 years old.

3.11.1 ARCHAEOLOGICAL RESOURCES

3.11.1.1 ALC

Nine archeological sites have been recorded at the ALC and included in the Integrated Cultural Resources Management Plan (ICRMP). The sources used to identify recorded sites at the ALC were previous survey and testing reports and the 1993 ICRMP. Evaluations of all nine archeological sites have been reviewed by the State Historic Preservation Office (SHPO), and SHPO has concurred that only one of the recorded sites (18PR466) is National Register of Historic Places (NRHP) -eligible. No further management or protection is warranted for these eight sites.

There are no known additional potential NHRP sites at the ALC. There are no known cemeteries at the ALC. No Native American sacred places are currently known to exist at the ALC. Prehistoric sites may exist in undisturbed areas on the installation, though they are not likely to be significant.

3.11.1.2 BPRF

The general region of the BPRF has been the focus of numerous archeological studies. There are several prehistoric sites that may date back to the late Archaic Period (2500-1000 BC). These sites are identified in the ICRMP (USARL, 2002).

The BPRF is located within the known historical range of the Piscataway Indians. Site 18CH156, eligible for the National Register, has been identified by the SHPO as containing Native American artifacts and shell middens dating from the late Archaic through the late Woodland Periods. Descendants of these people have expressed interest in items recovered from sites including skeletal remains. No Native American sacred places are currently known to exist at the BPRF.

The BPRF has the potential for containing many undiscovered pre-historic archeological sites from varied time periods, including one suspected Native American Burial site located in the woods behind Building S-302, and a Colonial burial site located on the west side of Wheatfield Road near Upper Cedar Point. The headstones were large unmarked stones and were buried during past bulldozer clearing operations. The most likely areas where as-yet-unidentified historic sites might be found are within the interior of the BPRF, where little archeological effort has been expended to date.

3.11.2 HISTORIC RESOURCES

3.11.2.1 ALC

A 1984 architectural inventory and assessment was conducted for the entirety of both the ALC and the BPRF. In addition, a project-specific undertaking at the ALC has resulted in the identification of a Cold War associated property. The 1984 historic properties report indicated

that no National Register of Historic Places (NRHP) eligible properties were identified at the ALC. Over twenty-five years have now passed since the last Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER) inventory. As a result of the passage of time, it would be prudent to revisit the 1984 HABS/HAER inventory.

3.11.2.2 BPRF

Currently, no architectural properties at the BPRF are listed on the NRHP. Thirty-three cultural sites have been identified at Blossom Point (See Table 4-1). One site has been assessed as being eligible for inclusion on the National Register of Historic Places (NRHP), and the State Historic Preservation Office (SHPO) has concurred with this recommendation. A complete Phase II study is required for this site. Two sites have been assessed as being ineligible for inclusion; the SHPO has concurred with these recommendations; no further management or protection is warranted for these two sites. One site has been listed as ineligible, pending completion of a Phase II study, and the determination for five sites is not yet available, also pending completion of a Phase II study. There has been no NRHP or SHPO determination for the remaining 24 sites.

3.12 SAFETY

3.12.1 ALC

Buildings 407 and 408 are used to store explosives. They are nonstandard magazines with a one-foot thick reinforced concrete walls and a flat roof. They are not earth-covered. Inside the magazines there are 14 cubes, each with one-foot thick reinforced concrete walls for explosives storage. Each cube will hold four pounds of explosives. The magazine front is not barricaded. The installation stores Class 1.1 through 1.4 explosives. No loose powders are handled. There are no liquid propellants.

Buildings 404 and 406 are Loading Rooms. Explosive experiments are conducted in Building 406. The safety distance from the explosives storage area is 50 feet from Buildings 404, 406, 407, and 408. Building 404 is currently being renovated to accommodate an explosives laboratory for open storage of explosives and classified material. All explosive safety arcs are contained within the boundary of the ALC.

The ALC has its own police force on the installation. However, should a crime be committed on the installation, the police force within the county in which the crime has been committed is notified. The ALC is augmented by the Prince George's County Police, Beltsville 6th District and the Montgomery County Police, 3rd District, should assistance be required. Fire and rescue services are provided by the counties. Mutual aid agreements between Montgomery and Prince George's Counties provide for cooperative fire response assistance for much of the land near the county line upon communication from the 911 Public Safety Answering Point (PSAP) dispatcher. Calverton Station 41 and Hillandale Company 12 are within two miles of the ALC and can respond to an emergency call within three to four minutes.

3.12.2 BPRF

Charles County provides fire and police protection services (specifically the Nanjemoy Volunteer Fire Department). There is a fire-fighting vehicle on-Post for emergencies and the La Plata Police Station serves the BPRF if needed. There are no medical or dental facilities located on the installation.

3.13 COASTAL ZONE MANAGEMENT

3.13.1 BPRF

The BPRF is located within the parameters of Maryland's Coastal Zone Management Program (CZMP). Authorized by the National Coastal Zone Management Act, Maryland's CZMP is a network of state laws and policies designed to protect coastal and marine resources. The program strives to achieve a balance between development and protection in the coastal zone. Maryland's CZMP includes the Chesapeake Bay, coastal bays, and Atlantic Ocean, and involves the towns, cities and counties that contain and help govern the coastline.

The Army has initiated the Army Chesapeake Bay Strategy in order to address the major issues confronting the bay, including nutrient and sediment pollution, toxic chemical contaminants, habitat loss and over-harvesting of fish and shellfish. The five main goals of the strategy are to:

- Contribute to restoring and sustaining the water quality of the Chesapeake Bay and its tributaries.
- Restore and sustain living resources and healthy habitats on Army installations.
- Support the implementation of ecosystem-based fisheries management.
- Strengthen stormwater management practices and maintain healthy watersheds.
- Foster Chesapeake Bay stewardship.

Army Installations and the USACE continue to develop plans, designs, and construction projects related to ecosystem restoration, navigation, and flood risk management with support from non-federal sponsors in the Chesapeake Bay region (U.S. Army, 2009).

4.0 ENVIRONMENTAL CONSEQUENCES

The Environmental Consequences section for each resource considers the direct and indirect effects of the Proposed Action and Alternatives. Cumulative Effects are discussed in Chapter 5.0.

4.1 LAND USE

4.1.1 PROPOSED ACTION

ALC

The Proposed Action would result in modest land use changes at the ALC. Table 8 illustrates the change in land use acreages; the land use categories remain unchanged.

TABLE 8: ALC EXISTING AND PROPOSED LAND USE ACREAGES

Land Use	Adelphi Laboratory Center		
	<i>Existing Land Use Acreage</i>	<i>Proposed Land Use Acreage</i>	<i>Acreage Change</i>
Administration	13.31	13.19	-0.12 acres
Storage and Supply	9.55	4.9	-4.65 acres
Maintenance	2.34	3.21	+0.87 acres
Research & Development	175.24	179.59	+4.35 acres
Operations	3.42	7.26	+3.84 acres
Total	203.86	208.15	+4.29 acres

Source: Adelphi Laboratory Center Long Range Component, 2007

BPRF

The proposed action would result in modest land use changes at BPRF, specifically from Ranges/Training to Community for the construction of a travel camp. Table 9 identifies the existing and proposed land use categories and acreages at the BPRF. The Proposed Action includes a new travel camp in order to provide for the high demand for RV camp sites, and for those looking for cabin camping opportunities in a beautiful, isolated location along tributaries of the Chesapeake Bay only an hour from Washington, D.C. This project will enhance the morale of Soldiers, family members, retirees, and DoD civilians, especially those soldiers undergoing treatment at Walter Reed Army Medical Center.

TABLE 9: BPRF EXISTING AND PROPOSED LAND USE ACREAGES

Land Use	Blossom Point Research Facility		
	<i>Existing Land Use Acreage</i>	<i>Proposed Land Use Acreage</i>	<i>Acreage Change</i>
Administration	0.75	0.75	0 acres
Storage and Supply	22.32	22.32	0 acres
Research & Development	1,564.30	1,414.30	-150 acres
Maintenance	12.23	12.23	0 acres
Community	0	150	+150
Total	1,599.60	1,599.60	0 acres

Source: Blossom Point Research Facility Long Range Component, 2007

4.1.2 NO-ACTION ALTERNATIVE

ALC

The No-Action Alternative would not impact land use within the Installation or any adjacent off-Post areas.

BPRF

The No-Action Alternative would not impact existing land use within the Installation or in adjacent off-Post areas. A new Travel Camp and Fire Station would not be constructed. Necessary and planned land uses would not be implemented and thus would negatively impact the facilities' operations.

4.2 GEOLOGY, SOILS, AND TOPOGRAPHY

4.2.1 PROPOSED ACTION

ALC

The Proposed Action would require grading and other site preparation for new structures and pavement, and consequently would necessitate erosion and sedimentation control measures. BMPs such as silt fencing, straw bales, and hydro-mulching would be used at construction sites. Areas of steep slopes would be avoided in placement of the new facilities.

BPRF

The Proposed Action would require grading and other site preparation for new structures and pavement, and consequently would necessitate erosion and sedimentation control measures. BMPs such as silt fencing, straw bales, and hydro-mulching would be used at construction sites. Areas of steep slopes would be avoided in placement of the new facilities. The Proposed Action would address control of wave erosion along portions of the Nanjemoy Creek and Potomac River shorelines. Applicable regulations include provisions of Section 10 of the Rivers and Harbors Act, Sections 401 and 404 of the Clean Water Act, the Maryland Tidal Wetlands Act, Non-tidal Wetlands Protection Act and the Chesapeake Bay Critical Areas Act. Maximum use of low-impact, bioengineering approaches recommended by the State of Maryland and Charles County (Charles County, 2000) would be used to stabilize the shoreline areas.

4.2.2 NO-ACTION ALTERNATIVE

ALC

Under the No-Action Alternative, impacts to physical resources would continue under baseline conditions.

BPRF

Under the No-Action Alternative, impacts to physical resources would continue as under current conditions. In the long-term, the natural erosion processes along Nanjemoy Creek could cause increased sedimentation within the creek and have adverse impacts on soils in the vicinity.

4.3 AIR QUALITY

Air emissions resulting from the Proposed Action were evaluated in accordance with federal, state, and local air pollution standards and regulations. The air quality impacts from the Proposed Action would be significant if they increase ambient air pollution concentrations above any NAAQS; contribute to an existing violation of any NAAQS; or interfere with or delay timely attainment of NAAQS.

4.3.1 PROPOSED ACTION

ALC

Emissions during construction would result from engine exhaust (i.e., construction equipment and material handling) and fugitive dust (e.g., from ground disturbance). The project construction contractor would use BMPs to minimize fugitive dust emissions. Using efficient practices and avoiding long periods where engines are running at idle may reduce combustion emissions from construction equipment. Emissions generated by construction are temporary in nature and would end when construction is complete. In addition, the conditions of demolition or grading permits that may be required will be followed. Therefore, emissions are not expected to surpass any air quality thresholds and would not result in any adverse impacts to air quality.

BPRF

The Proposed Action would not include any new facilities or operations that would negatively impact local or regional air quality in the long-term. Emissions during construction would originate from engine exhaust (i.e., construction equipment and material handling) and fugitive dust (e.g., from ground disturbance). The project construction contractor would use BMPs to minimize fugitive dust emissions. Using efficient practices and avoiding long periods where engines are running at idle may reduce combustion emissions from construction equipment. Emissions generated by construction are temporary in nature and would end when construction is complete. Paving the gravel portions of Blossom Point Road would reduce fugitive dust on the roadway.

4.3.2 NO-ACTION ALTERNATIVE

ALC

The No-Action Alternative would not generate any new construction emissions. As a result, the No-Action Alternative would produce less than significant air quality impacts.

BPRF

The No-Action Alternative would not reduce airborne dust from vehicle use on the existing gravel portion of Blossom Point Road, but the impact on overall air quality would be minimal. The BPRF would remain in attainment for all criteria pollutants.

4.4 VISUAL RESOURCES

4.4.1 PROPOSED ACTION

ALC

The removal of semi-permanent facilities and trailers will help improve the aesthetic appearance of the ALC. Construction of a new visitor's center and the introduction of landscape plantings Installation wide would positively contribute to the welcoming appearance of the ALC to visitors and employees.

BPRF

Shoreline erosion control would positively impact the visual appearance of the eroding shoreline bluffs with the introduction of plantings and materials that would blend into the existing shoreline. Overall, viewsheds would remain unaffected by any new construction.

4.4.2 NO-ACTION ALTERNATIVE

ALC

Under the No-Action Alternative visual resources at the ALC would remain unchanged.

BPRF

The No-Action Alternative would not change the viewsheds associated with the BPRF either from the water or from locations on adjacent land areas. The shoreline bluffs would continue to erode sediment into Nanjemoy Creek and the Potomac River.

4.5 NOISE

This section discusses the potential impacts to noise from the Proposed Action and No-Action Alternative.

4.5.1 PROPOSED ACTION

ALC

Primary noise sources would include heavy vehicles and earth-moving equipment during demolition and construction activities. Construction noise from the installation is expected to be noticeable only in the immediate site vicinity. Noise associated with construction would also be intermittent, short-term in nature, and would only occur during the permissible daytime hours. Therefore, adverse impacts to noise are not expected to occur.

BPRF

Construction projects are expected to temporarily increase the noise levels on the Installation and potentially affect nearby residential neighborhoods without adverse impacts. Noise impacts would be mitigated by limiting construction to day time hours.

A new 10-lane 1,000 yard small arms range is expected to increase noise levels on the Installation through routine daily operations and testing.

4.5.2 NO-ACTION ALTERNATIVE

ALC

Under this alternative the proposed construction activities would not occur. Noise associated with the ALC would remain at baseline conditions.

BPRF

The No-Action alternative would not change existing noise levels on the Installation.

4.6 WATER RESOURCES

4.6.1 PROPOSED ACTION

ALC

New construction projects have the potential to increase impervious areas, which may result in an increase of stormwater runoff. The Installation's Stormwater Permit requirements include minimum control measures for new construction, as well as for post construction.

BPRF

A number of the projects identified in the BPRF Master Plan would occur within the 1000-ft Critical Area boundary and, in some cases, the 100-ft Critical Area Buffer associated with the Chesapeake Bay Protection Act. The projects potentially include shoreline erosion control, replacement of the small boat dock, the R&D small arms range, the administrative facility expansion, and the relocation of the ordnance loading facility. Final siting and design of these facilities must be coordinated with the Maryland Chesapeake Bay Critical Area Commission to insure compliance with all applicable regulations and mitigation requirements. Also, depending upon final siting and design, some of the projects may be within the 25-ft buffer for non-tidal wetlands or 100-year non-tidal floodplain. Should this be the case, Army personnel would need to complete a *Joint Federal/State Application for the Alternation of Any Floodplain, Waterway, Tidal, or Non-tidal Wetland in Maryland* for submission to the Maryland Department of Natural Resources.

The shoreline erosion control project and the replacement of the small boat dock would involve direct impacts to "other waters of the U.S." and would require coordination and permitting under Sections 404 and 401 of the Clean Water Act as well as permitting under Section 10 of the Rivers and Harbors Act. All projects would need to be evaluated by the State of Maryland for consistency with coastal zone management regulations. Although full implementation of all projects listed in the Master Plan would increase impervious surface area on the BPRF, this increase would not be substantial and would have little impact on overall storm water runoff quantity or quality. Implementation of shoreline erosion control along Nanjemoy Creek and the Potomac River using bioengineering approaches would have a long-term beneficial impact on near-shore water quality. Construction along the shoreline areas of the BPRF would be within the 100-year floodplain although no flooding has been historically recorded along these areas. The Proposed Action would not impact groundwater resources at the BPRF.

4.6.2 NO-ACTION ALTERNATIVE

ALC

Under the No-Action Alternative there would be no change in impervious surface area from construction of new facilities, expansion of existing facilities, or addition of impervious roadway surfaces. The No-Action Alternative would not impact floodplains or groundwater.

BPRF

This alternative would not impact any portion of the shoreline designated as a Critical Area within the Chesapeake Bay watershed. There would be no impact on tidal or non-tidal wetlands. The No-Action Alternative would allow shoreline erosion to continue along portions of Nanjemoy Creek and the Potomac River. There would be no change in impervious surface area from construction of new facilities, expansion of existing facilities, or addition of impervious roadway surfaces with the No-Action Alternative. The No-Action Alternative would not impact floodplains or groundwater.

4.7 INFRASTRUCTURE AND UTILITIES

4.7.1 PROPOSED ACTION

ALC

The Proposed Action would include maintenance and infrastructure improvements to bridges, HVAC systems, electrical distribution systems, sewer and stormwater lines, underground storage tanks, fire and security protection systems, and High Temperature Water (HTW) lines throughout the Installation. These systems would have a beneficial impact to the existing utilities by providing additional services required to meet the needs of the installation. Updated infrastructure would save energy, increase safety and protection of people at the installation, and prevent accidents or tragedies from occurring.

In addition a new main gate would be constructed in order to meet current Anti-terrorist Force Protection (AT/FP) standards. This would include the relocation of the guard booth and vehicle inspection facility. A new ACP would be constructed at the rear gate along Dalghren Road in order to alleviate traffic congestion and accommodate future Installation growth.

A salt storage facility would be constructed to store salt for the protection of Post roads and parking lots from ice and comply with requirements of the Maryland Department of the Environment. New roads, parking lots, and parking structures would be built as renovation, demolition, and construction of facilities occur on Post.

BPRF

The Proposed Action would replace the electrical distribution system at the BPRF which is currently disparate, out of date, and out of compliance with rural electrical standards. A revised ACP will bring the BPRF up to current AT/FP standards. In addition a dock would be constructed to launch small craft used to keep water areas clear during tests and for shoreline security/safety during research operations. The Range Safety Control Tower and Observation Building would be renovated to return it to structurally sound condition.

The Proposed Action would include paving the gravel portion of Blossom Point Road, as well as other interior roads, and replacement of the fire suction line. This action would reduce airborne dust resulting from vehicle use formerly on a gravel road, and would also improve travel time and safety (e.g. shorter breaking distances on pavement vs. gravel roadbed). There would be a very small increase in impervious surface area resulting from paving the gravel

portions of Blossom Point Road and additional construction projects. Despite the small addition of impervious surface area and use of Best Management Practices (BMPs), the BPRF would need to comply with the State of Maryland's "10% Rule." This rule states that BMPs should be capable of removing pollutant loads in storm water generated from a development site to a level at least 10 percent below the pre-development load. Any changes in demand on utilities such as potable water, wastewater, electric, gas, etc. would be minimal as a result of projects listed under the Proposed Action.

4.7.2 NO-ACTION ALTERNATIVE

ALC

Under the No-Action Alternative baseline conditions would remain unchanged. The main gate ACP would continue to require renovation in order to meet AT/FP requirements. Infrastructure including bridges, HVAC systems, electrical distribution systems, sewer and stormwater lines, underground storage tanks, fire and security protection systems, and HTW lines would remain substandard and in need of necessary repairs.

BPRF

A No-Action Alternative would have little or no impact on any aspect of the BPRF infrastructure or utilities including potable water, wastewater, solid waste, electrical and gas distribution, steam and chilled water, or storm water. The No-Action Alternative would result in the continued deterioration of the existing fire suction line, which could have long-term catastrophic consequences should the line fail during a structural fire. This alternative would not provide road improvements to Blossom Point Road and other interior roads within the Installation. The electrical distribution system at the BPRF would continue to be outdated and the ACP will not meet current AT/FP standards.

4.8 HAZARDOUS MATERIALS AND WASTE MANAGEMENT

4.8.1 PROPOSED ACTION

ALC

Construction projects under the Proposed Action would most likely result in special-wastes from construction, demolition, and renovation from asbestos-containing materials (ACM), and lead-based paint (LBP). Standard construction procedures and BMPs would be followed in order to mitigate environmental affects due to construction, demolition, and renovation.

BPRF

The Proposed Action would include a new Materials Transfer Facility for receiving and handling of hazardous and explosive materials before they are stored in the explosive storage bunker area. This new facility would replace Building 504 which is currently too close to the water's edge, posing a danger to boaters; and with the eroding shoreline there is danger of the structure falling into the Potomac River. Building 504 would be relocated. The construction of a 1,000 yard small arms range would allow the confinement and recovery of lead from target areas.

Construction projects under the Proposed Action would more than likely result in special-wastes from construction, demolition, and renovation from asbestos-containing materials (ACM), Polychlorinated biphenyls (PCB), and lead-based paint (LBP). Standard construction procedures and BMPs would be followed in order to mitigate environmental affects due to construction, demolition, and renovation.

4.8.2 NO-ACTION ALTERNATIVE

ALC

The No-Action Alternative would not change the existing storage, handling, generation, or use of hazardous or toxic materials/wastes on the ALC. There would be no change in the way solid waste is handled on-site. This alternative would also not result in special waste generation (asbestos-containing materials, lead-based paint, etc.) from facility demolition or renovation.

BPRF

The No-Action Alternative would not change the existing storage, handling, generation, or use of hazardous or toxic materials and wastes on the BPRF. There would be no change in the way solid waste is handled on-site and would not result in special waste generation from facility demolition or renovation. Building 504, the current Ordnance Loading Room, would still be at risk of falling into the Potomac River and boaters would be in danger since the existing ESQD arc extends over the water.

4.9 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

Potential socioeconomic consequences were assessed in terms of effects of the Proposed Action on the local economy. Construction activity often generates temporary economic benefits to the area in terms of income. Environmental justice analysis applies to potential disproportionate effects on minority or low-income populations. Environmental justice issues could occur if an adverse environmental consequence to the human population fell disproportionately upon minority or low-income populations.

4.9.1 PROPOSED ACTION

ALC

Construction projects would have a short-term beneficial impact on the local economy by employing local construction companies. In the long term, with the construction of new facilities, the number of employees at the ALC will increase. This will help maintain the long-term viability of the ALC as a highly-skilled science and technology employer. No impacts to populations of concern would occur.

BPRF

Construction projects would have a short-term beneficial impact on the local economy by employing local construction companies. No impacts to populations of concern would occur.

4.9.2 NO-ACTION ALTERNATIVE

ALC

Under the No-Action Alternative, no development, maintenance, or renovation would occur. No impacts to populations of concern would occur.

BPRF

Under the No-Action Alternative, no development, maintenance, or renovation would occur. No impacts to populations of concern would occur.

4.10 BIOLOGICAL RESOURCES

Potential to impact natural resources including plants, wildlife, and habitat is based on the importance of the resource; proportion of the resource that would be affected relative to its occurrence in the region; sensitivity of the resource to the proposed action's activities; and duration of ecological ramifications. Permanent habitat loss and temporary disturbance due to construction are specific issues and concerns for biological resources. Habitat degradation caused by post-construction promotion of weeds is also a consideration.

4.10.1 PROPOSED ACTION

ALC

No federally listed species occur on the installation and no rare species occur in the proposed project areas. Efforts will be made to minimize impacts to vegetation by only removing necessary trees and implementing BMPs during construction activities that would abate dust and prevent silt from entering stormwater systems. Permanent revegetation would be implemented as soon as possible after construction projects are completed.

BPRF

The total number of trees or acreage of trees that may need to be removed as part of the projects addressed in the Real Property Master Plan is not currently known. It's likely that the shoreline protection project, fencing extension, replacement of the ordnance loading facility, construction of the small arms range, construction of a travel camp, and construction of a materials transfer facility would all impact some trees/forest areas within the Critical Area on the BPRF. Projects that would require tree removal within the Chesapeake Bay Critical Area (which is much of the BPRF) would need to be coordinated with the Maryland Department of Natural Resources and comply with COMAR 27.01.02.04. Generally, on the BPRF, the mitigation requirements for tree removal within the Critical Area would be on a 1:1 basis. However, the replacement ratio could be higher if extensive clearing would be required for construction or other purposes. Clearing of mature trees would be held to a minimum and would be followed by landscaping with native species.

Projects listed as part of the Proposed Action would permanently remove some forested areas and other habitat for common species of wildlife. Other habitats could be temporarily disturbed and would result in displacement of other species during the construction phase of the projects.

There is, however, significant forested habitat adjacent to areas of impact, and consequently much wildlife would relocate to such habitats. Full implementation of all Master Plan projects would not substantially impact contiguous forested areas on the BPRF important for interior dwelling species of birds and other wildlife.

The construction of the small arms range, boat dock, and travel camp will occur in the vicinity of bald eagle nest sites (there are 5 active nests on BPRF) and should be coordinated with the Maryland Department of Natural Resources, and, depending on the actual proximity of the nest sites to construction activities, should be limited to the non-nesting period for eagles (June 15 to December 15). None of the other potential projects listed as part of the Real Property Master Plan would be in the vicinity of active bald eagle nests.

Several of the projects that could be implemented as part of the Proposed Action would potentially impact tidal and/or non-tidal wetlands as well as other waters of the U.S. found on the BPRF. The projects most likely to involve wetlands are the shoreline erosion control measures, boat dock construction, and extension of the security fencing. The impacts of each project on wetlands would need to be assessed individually as detailed siting and design is developed.

Compliance with Section 404 and 401 of the Clean Water Act including mitigating actions required for permitting would need to be determined at that time.

4.10.2 NO-ACTION ALTERNATIVE

ALC

The No-Action Alternative would be the same as baseline conditions.

BPRF

The No-Action Alternative would be the same as baseline conditions. This alternative would not impact any portion of the shoreline designated as a Critical Area within the Chesapeake Bay watershed. There would be no impact on tidal or non-tidal wetlands. The No-Action Alternative would allow shoreline erosion to continue along portions of Nanjemoy Creek and the Potomac River. Sedimentation resulting from this erosion would continue to impact near-shore water quality in both water bodies.

4.11 CULTURAL RESOURCES

Analysis of potential impacts to cultural resources considers both direct and indirect impacts. Direct impacts may occur by physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the resource; introducing visual or audible elements that are out of character with the element; or neglecting the resource. Direct impacts can be assessed by identifying the types and locations of proposed activity and determining the exact location of cultural resources that could be affected. Indirect impacts generally result from the effects of project-induced population increase and the need to develop to accommodate these increases. These activities and the subsequent use can impact cultural resources.

4.11.1 PROPOSED ACTION

ALC

No proposed construction projects or operations interfere with archaeological site (18PR466); the only site on the ALC that is eligible for NHRP listing. If archaeological resources were encountered during construction, work would stop at the site until the area was evaluated by a qualified professional archaeologist. Therefore, impacts to cultural resources would be negligible.

BPRF

If archaeological resources were encountered during construction, work would stop at the site until the area was evaluated by a qualified professional archaeologist. The area of potential effects for the small arms range contains archaeological sites 18CH156, 18CH214, 18CH219, and 18CH483. Site 18CH156 is eligible for the National Register of Historic Places. Consultation between the BPRF and the Maryland Department of Housing and Community Development Division of Historical and Cultural Programs would need to be arranged.

4.11.2 NO-ACTION ALTERNATIVE

ALC

Impacts to cultural resources are not expected under the No-Action Alternative. Cultural resources would continue to be managed in compliance with federal law and Army regulations.

BPRF

Impacts to cultural resources are not expected under the No-Action Alternative. Cultural resources would continue to be managed in compliance with federal law and Army regulations.

4.12 SAFETY

4.12.1 PROPOSED ACTION

ALC

Activities involved in the proposed construction are not unique. Standard construction procedures and BMPs would be followed. Ground activities may expose workers performing the required site preparations, grading, and construction to some risk. The U.S. Department of Labor, Bureau of Labor Statistics maintains data analyzing occupational injuries. Strict adherence to all applicable occupational safety requirements would minimize the relatively low risk associated with these construction activities.

BPRF

The Proposed Action includes the installation of perimeter fencing, shoreline fencing, and security cameras at the BPRF. A new fire station would be constructed to provide rapid response on the BPRF. Materials and explosives of concern and munitions constituents would

be cleared for the construction of a travel camp. The construction of a travel camp on the BPRF would most likely require additional NEPA actions in the form of an Environmental Impact Statement, due to the clearing of explosive materials.

4.12.2 NO-ACTION ALTERNATIVE

ALC

Baseline conditions would continue under a No-Action Alternative. Safety would not be impacted.

BPRF

Baseline conditions would continue under a No-Action Alternative. Fencing and security cameras would not be installed and a new fire station would not be built.

4.13 COASTAL ZONE MANAGEMENT

4.13.1 PROPOSED ACTION

BPRF

Under the Proposed Action approximately 800 feet of stone revetment and 8 stone offshore breakwaters would be placed along one-mile of Nanjemoy Creek. These coastal improvement activities would positively impact water quality in the Chesapeake Bay, by lessening beach erosion and limiting sediment loads introduced into the Nanjemoy Creek, Potomac River, and subsequently the Chesapeake Bay. These projects help the BPRF meet the guidelines and goals set out by the Maryland CZMP and the Army's Chesapeake Bay Strategy in order to protect the Bay's coastal and marine resources.

4.13.2 NO-ACTION ALTERNATIVE

BPRF

Under the No-Action Alternative no coastal management projects would be implemented and sediment would continue to accumulate in the Potomac River through shore erosion.

4.14 MITIGATION MEASURES

Measures that will be taken to minimize short- and long-term impacts from the Proposed Action include, but are not limited to:

- Preservation and/or planting new native species of trees where construction has occurred and/or mature trees have been taken.
- Choosing energy efficient equipment and utilities when upgrading or renovating current buildings to decrease energy use and minimize greenhouse gas emissions.
- Including appropriate erosion and sediment control plans in all contract specifications for site work.

- Encouraging the use of carpooling to minimize vehicular emissions.
- Using techniques to minimize short-term noise disturbances caused by construction, including notification of staff and nearby neighbors, scheduling work during normal business hours, and including noise minimization in all construction contract requirements.
- Use of BMPs regarding appropriate storm water management and erosion and sediment control plans. This could include small detention basins, additional catch basins, silt fencing, and vegetated swales.
- Use of authorized salvage personnel and/or specific deconstruction techniques to minimize solid waste generation during construction.
- Sale of timber, firewood, and mulch from downed trees to reduce the amount of wood vegetation in the solid waste stream.
- Maximum avoidance of all tidal and nontidal wetlands including designated buffers.
- Avoidance of bald eagle nest sites, especially during critical breeding periods.
- Use of bioengineering and other low-impact approaches to shoreline stabilization.
- Application of the “10% Rule” to development occurring within the Critical Area.
- Minimize fugitive dust from construction activities.
- Avoidance of cultural resource sites.
- Incorporation of the US Army Corps of Engineers SpiRiT rating system in the design of new facilities.

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5.0 CUMULATIVE EFFECTS AND OTHER ENVIRONMENTAL CONSIDERATIONS

The CEQ regulations and 32 CFR Part 989 stipulate that the cumulative effects analysis should consider the potential environmental impacts resulting from “the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR 1508.7). The first step in assessing cumulative effects involves identifying and defining the scope of other actions and their interrelationship with the Proposed Action or alternatives (CEQ 1997). The scope must consider other projects that coincide with the location and timetable of the Proposed Action and other actions. Cumulative effects analyses evaluate the interactions of multiple actions.

5.1 PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS

This chapter identifies relevant past, present, and reasonable foreseeable actions. These include military actions as well as federal actions. Non-federal actions are also considered and discussed in this chapter. An analysis of how the impacts of the identified actions might be affected by those actions resulting from the Proposed Action for each of the environmental resources is summarized. The chapter concludes with a discussion of the relationship between short-term uses of man’s environment, as well as the maintenance and enhancement of long-term productivity and irreversible and irretrievable commitment of resources.

As noted in Table 10, the cumulative actions that have the potential to interact with the proposed component plans include current and future military and non-military projects.

The Proposed Action is consistent with the mission of a military installation. No significant cumulative consequences are expected to occur to land use or transportation in conjunction with master plan projects. No negative cumulative socioeconomic or environmental justice effects are anticipated as a result of the Proposed Action or other reasonably foreseeable projects. No additional cumulative safety or noise impacts are anticipated other than those described in Chapter 3. No cumulative consequences are anticipated for cultural resources. No significant cumulative effects to biological species are anticipated. Construction activity at the ALC and in the region would have a temporary effect on air quality as a result of construction emissions. Cumulative consequences would not be expected to result in emission levels that could affect regional air quality.

Table 10: Current and Future Military and Non-Military Projects

Action	Source	Description
<i>Military Projects</i>		
Adelphi Master Planning Projects, Maryland	Adelphi Laboratory Center Real Property Master Plan 2007 -2009	The Master Plan includes the Long Range Component Plan and Short Range Component Plan projects including specific site locations of proposed facilities and improvements.
<i>Non-Military Projects</i>		
Maryland Department of Transportation (DOT)	www.mcmaps.org	Maryland DOT is constructing road improvements on U.S. 29 between Fairland and Musgrove Roads. The scope of the project includes construction of the grade separated interchanges. Improvements along Fairland Road would extend from the Old Columbia Pike west of U.S. 29 and Brahms Avenue. The access point to the Verizon Chesapeake Complex would be modified. The work along Musgrove Road would impact the access points to the Verizon Fairland Data Center which would be modified under this project. This construction project is one of many along U.S. 29 as part of the Inter-County Connector Project.
Montgomery County, Maryland	www.mcmaps.org	A residential subdivision is planned north of the installation along Perimeter Road. There are additional, smaller, subdivision plans in the vicinity of the ALC
General Services Administration (GSA), Maryland	GSA Master Plan Draft EIS	The GSA possesses 712 acres of the former Naval Surface Warfare Center adjacent to the ALC. Existing facilities are undergoing renovation in order to consolidate research and development operations. The FDA Campus comprises 130 acres of the 662-acre Federal Research Center. FDA currently has an approved Master Plan for 7,719 employees. GSA and FDA are in the process of analyzing a Master Plan Update that would result in growth to 8,889 employees.

5.2 OTHER ENVIRONMENTAL CONSIDERATIONS

Other environmental considerations include evaluation of the relationship between short-term uses and long-term productivity of resources and an assessment of irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented.

5.3 RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

The CEQ regulations (Section 1502.16) specify that environmental analysis must address "...the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity". Special attention should be given to impacts that narrow the range of beneficial uses of the environment in the long-term or pose a long-term risk to human health or safety. This section evaluates the short-term benefits of the proposed alternatives compared to the long-term productivity derived from not pursuing the proposed alternatives. A short-term use of the environment is generally defined as a direct consequence of a project in its immediate vicinity.

5.4 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The NEPA CEQ regulations require environmental analyses to identify "...any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented" (40 CFR Section 1502.16). Primary irreversible effects result from permanent use of a nonrenewable resource (e.g., minerals or energy). Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., disturbance of a cultural site) or consumption of renewable resources that are not permanently lost (e.g., old growth forests). Secondary impacts could result from environmental incidents, such as accidents or fires. Natural resources include minerals, energy, land, water, forestry and biota. Nonrenewable resources are those resources that cannot be replenished by natural means, including oil, natural gas and iron ore. Renewable natural resources are those resources that can be replenished by natural means, including water, lumber and soil.

Most impacts are short-term and temporary, and therefore negligible. Short-term reactions of wildlife could include temporary shifts in habitat use or activity, but long-term habituation is expected. Military activities necessarily involve consumption of nonrenewable resources, such as gasoline for vehicles. No irreversible or irretrievable effects are expected for cultural resources or other natural resources, including land and water.

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6.0 REFERENCES

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Wardwell, Robert. 2001. "Integrated Natural Resources Management Plan, US Army Adelphi Laboratory Center."

APPENDIX A
Environmental Coordination



DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
ADELPHI LABORATORY CENTER
2800 POWDER MILL ROAD
ADELPHI MD 20783-1197

July 16, 2009

Environmental Division

(Insert Address Here)

Dear *(Insert Name)*:

The US Army Garrison (USAG) Adelphi Laboratory Center (ALC) is preparing a Draft Environmental Assessment (EA) to evaluate the potential impacts associated with implementation of Long and Short Range Component Plans at ALC and Blossom Point Research Facility (BPRF). These plans (Adelphi Laboratory Center Long Range Component, Final Submittal [June 2007]; Adelphi Laboratory Center Short Range Component, Draft Final Submittal [January 2009]; Blossom Point Research Facility Long Range Component, Final Submittal [June 2007]; and Blossom Point Research Facility Short Range Component, Draft Submittal [January 2009]) contain proposed improvement projects and area development plans in support of multiple facility missions. Location maps of the ALC and BPRF are attached (Enclosures 1 and 2). This EA will analyze the Proposed Action (implementation of the component plans at the installations) and a No-Action Alternative.

A display advertisement announcing the USAG ALC's intention to prepare the Draft EA was published in the Washington Post on July 16, 2009. This letter is also being provided to the contacts included on the attached distribution list (Enclosure 3).

As part of this National Environmental Policy Act process, the USAG ALC is seeking comments and input regarding this proposal. In order to give your comments or concerns full consideration early in the development of the Draft EA, we would appreciate receiving your response by August 20, 2009.

If you have questions regarding this proposal, please contact the ALC Conservation Specialist, Julia Long, at the above address or by phone at (301) 394-3595. Thank you for your assistance with this matter.

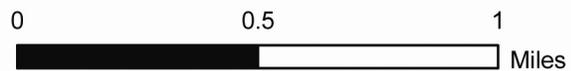
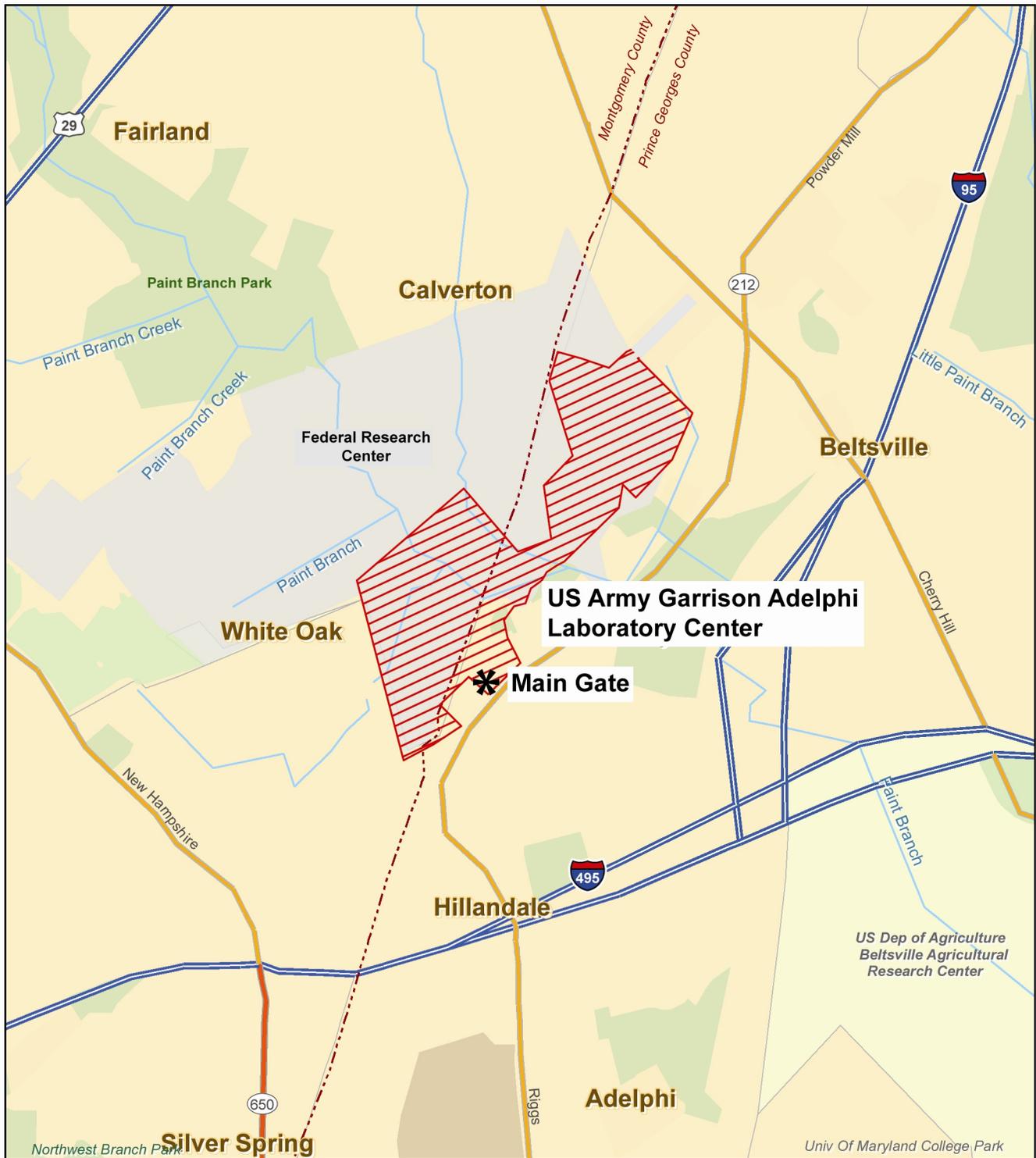
Sincerely,

A handwritten signature in black ink, appearing to read 'R. Schmidt', with a long horizontal flourish extending to the right.

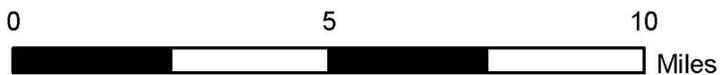
Ronald E. Schmidt
Garrison Manager

3 Enclosures

US ARMY GARRISON LABORATORY CENTER VICINITY MAP



BLOSSOM POINT RESEARCH FACILITY VICINITY MAP



Distribution List

Maryland Historical Trust
Office of Preservation Services
100 Community Place
Crownsville, MD 21032
Attn: Mr. J. Rodney Little

Sue Stadskev
Asset Manager
Metropolitan Service Center, WPD, GSA, NCR
White Oak Service Center
10903 New Hampshire Ave.
Building 51, Room 1238
Silver Spring, MD 20993

U.S. Department of Transportation
Federal Aviation Administration
800 Independence Ave, SW
Washington, DC 20591

U.S. Fish & Wildlife Service
177 Admiral Cochrane Drive
Annapolis, MD 21401
Attn: Dan Murphy

National Capital Planning Commission
401 9th Street, NW
North Lobby, Suite 500
Washington, DC 20004

The Honorable Joseline Pena-Melnyk
House Office Building, Room 209
6 Bladen St.
Annapolis, MD 21401

U.S. Fish and Wildlife Service
1849 C Street, NW
Washington, DC 20240

The Honorable Benjamin Barnes
House Office Building, Room 209
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Maryland Department of Planning
301 W. Preston St.
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The Honorable Barbara Frush
House Office Building, Room 412
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Montgomery County Planning Department
8787 Georgia Ave
Silver Spring, MD 20910

The Honorable Steny H. Hoyer
1705 Longworth House Office Building
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Prince George's County Planning Department
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14741 Governor Oden Bowie Drive,
Upper Marlboro, MD 20772

The Honorable Benjamin Cardin
509 Hart Senate Office Building
Washington, DC 20510

U.S. Department of Commerce
1401 Constitution Ave., NW
Washington, DC 20230

The Honorable Barbara Mikulski
Hart Senate Office Building, Suite 503,
Washington, DC 20510 - 2003

Fairland Library
14910 Old Columbia Pike
Burtonsville, MD 20866

Long Branch Library
8800 Garland Ave
Silver Spring, MD 20901

Prince George Memorial Library
6532 Adelphi Rd
Hyattsville, MD 20782

Beltsville Branch Library
4319 Sellman Rd
Beltsville, MD 20705

White Oak Library
11701 New Hampshire Ave.
Silver Spring, MD 20904

Kelvin Lawson
Food and Drug Administration
10903 New Hampshire Ave
WO Building 51 - 1352
Silver Spring MD 20993-0002

Charles County Public Library
La Plata Branch
2 Garrett Avenue
La Plata, Maryland 20646

Charles County Public Library
P.D. Brown Memorial Branch
50 Village Street
Waldorf, Maryland 20602

Charles County Public Library
Potomac Branch
3225 Ruth B. Swann Drive
Indian Head, Maryland 20640

Charles County Government
200 Baltimore Street P.O. Box 2150
La Plata, MD 20646
Attn: Mr. Roy Hancock

Office of the County Executive
County Administration Building
14741 Governor Oden Bowie Drive,
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The Honorable Murray Levy
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The Honorable James Rosapepe
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The Honorable Sheila Hixson
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The Honorable Thomas Hucker
House Office Building, Room 220
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The Honorable Jamin Raskin
James Senate Office Building, Room 122
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The Honorable Heather Mizeur
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The Honorable Donna Edwards
2470 Rayburn House Office Building
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 www.ncpc.gov

**IN REPLY REFER TO:
 NCPC File No. MP14**

August 20, 2009

**Ms. Julia Long, ALC Conservation Specialist
 U.S. Army Garrison Adelphi Laboratory Center
 Attn: IMNE - ALC - PW J. Long
 2800 Powder Mill Road
 Adelphi, MD 20783-1197**

Re: Adelphi Laboratory Center Master Plan, Scoping for Environmental Assessment

Dear Ms. Long:

Thank you for the opportunity to comment on scoping for the Environmental Assessment (EA) for the proposed Adelphi Laboratory Center (ALC) Master Plan in Adelphi, Maryland.

Given the close proximity of the Food and Drug Administration Headquarters, the National Capital Planning Commission (NCPC) staff encourages the Army to coordinate with the General Services Administration (GSA) and the Food and Drug Administration (FDA) throughout the EA and master plan development process. Also as a result of the adjacency of the FDA headquarters, NCPC staff encourages the Army to study the potential for cumulative effects.

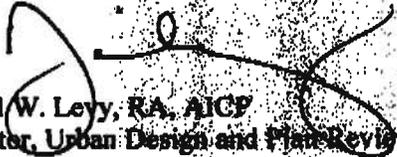
NCPC staff also encourages the Army to coordinate with surrounding community groups and study the potential impacts the proposed master plan may have on those communities.

Additionally, we encourage the Army to refer to the Commission's Comprehensive Plan for the National Capital and the Commission's Master Plan Submission Requirements and Environmental and Historic Preservation Policies and Procedures. We also encourage the Army to consult with us in order to ensure conformance with the Comprehensive Plan, in particular the Federal Workplace, Environmental, and Transportation Elements. In accordance with the Commission's master plan submission requirements, a Transportation Management Plan is required as part of the submission. Both the Comprehensive Plan and the submission requirements can be found on our website at www.ncpc.gov.

We look forward to reviewing the Draft EA when it is distributed for public comment.

If you have any questions regarding our comments or our submission requirements, please contact Cheryl Kelly of my staff at (202) 482-7291 or cheryl.kelly@ncpc.gov.

Sincerely,


 David W. Levy, RA, AICP
 Director, Urban Design and Plan Review Division



Maryland Department of Planning

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

Richard Eberhart Hall
Secretary
Matthew J. Power
Deputy Secretary

August 12, 2009

Mr. Ronald Schmidt
Garrison Manager
U.S. Department of the Army
2800 Powder Mill Road
Adelphi, MD 20783-1197

STATE CLEARINGHOUSE REVIEW - ADDITIONAL INFORMATION REQUEST

State Application Identifier: MD20090729-1127

New Reply Due Date: 09/3/2009

Project Description: Scoping prior to preparation of EA: implementation of long and short-range component plans: improvement project and area development plans

Project Address: 2800 Powder Mill Road, Adelphi, MD 20783-1197, Blossom Point Research Facility, Riverside, MD

Project Location: Counties of Charles, Montgomery, and Prince George's

Clearinghouse Contact: Bob Rosenbush

Dear Mr. Schmidt:

The State Clearinghouse received the following request for additional information from Montgomery County. Montgomery County requested a description of the proposed project, and the long and short-range development anticipated at the Powder Mill Road facility; and any development plans.

This request will require an extension of the initial review period. The new reply date is noted above.

The Clearinghouse will strive to expeditiously conclude this review and may do so before the new reply date, if at all possible. We request your assistance in providing the additional information requested as soon as possible, either to the Clearinghouse or directly to the requesting party. We would appreciate a copy of any correspondence sent directly to the requesting party.

If you need assistance or have 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

cc: Diane Jones - MTGM
Julia Long - Army

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CHARLES COUNTY GOVERNMENT
Department of Planning & Growth Management

Charles County Commissioners
 Wayne Cooper, President
 Edith J. Patterson, Ed.D., V.P.
 Reuben B. Collins, II
 Samuel N. Graves, Jr.
 Gary V. Hodge

Rebecca B. Bridgett, Ed. D.
 County Administrator

September 14, 2009

Melvin C. Beall, Jr., P.E.
 Director

Michael K. Hinchy
 Assistant Director

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Ph: 301-645-0540
 Ph: 301-870-3896
 Fax: 301-645-0638

Resource and Infrastructure Management

Ph: 301-645-0689
 Fax: 301-638-2403

24-Hour Permit Status Inquiry
 301-645-0600

Mr. Ronald E. Schmidt, Garrison Manager
 US Army Installation Management Command
 Adelphi Laboratory Center
 2800 Powder Mill Road
 Adelphi, MD 20783-1197

RE: Letter of July 16, 2009 regarding Environmental Assessment associated with component plans for Blossom Point Research Facility (BPRF)

Dear Mr. Schmidt:

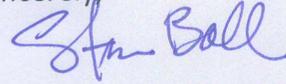
Thank you for the opportunity to provide comments and input regarding the Environmental Assessment to evaluate potential impacts associated with implementation of Long and Short Range Component Plans at the Blossom Point Research Facility in Charles County. In order for us to comment, please provide specific information on the "proposed improvement projects and area development plans", so that we can assess the potential impacts.

As you may be aware, Charles County is currently conducting a Joint Land Use Study for the land uses surrounding the Blossom Point Research Facility. It is funded by the US Department of Defense and is scheduled to be completed in the fall of 2010. The study will identify land use measures needed to ensure that future public and private development adjacent to the Blossom Point military installation is compatible with the research facility plans.

Charles County requests that copies of the subject Long and Short Range Component Plans for Blossom Point be provided for review in conjunction with the Joint Land Use Study.

If you have any questions or need additional information, please contact Mr. Steven Ball, Planning Director, at (301) 645-0632.

Sincerely,



Steven Ball, AICP, LEED AP
Planning Director

cc: County Commissioners, Charles County
Rebecca Bridgett, County Administrator
Roger Fink, County Attorney
Chuck Beall, Director, Community Development

R:\Home\Com\Response\PGM\Department of Army Blossom Point Response Letter



MARYLAND DEPARTMENT OF THE ENVIRONMENT

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

Martin O'Malley
Governor

Shari T. Wilson
Secretary

Anthony G. Brown
Lieutenant Governor

Robert M. Summers, Ph.D.
Deputy Secretary

September 3, 2009

Mr. Ronald Schmidt
Garrison Manager
U.S. Department of the Army
2800 Powder Mill Road
Adelphia, MD 20783

RE: State Application Identifier: MD20090729-1127
Project: Scoping Prior to Preparation of EA – Blossom Point Research Facility

Dear Mr. Schmidt:

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 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.
2. Any above ground or underground petroleum storage tanks that will be removed must be done so in accordance with applicable State and federal laws and regulations. Contact the Oil Control Program at (410) 537-3442 for additional information.
3. Any contract specifying "Lead Paint Abatement" must comply with Code of Maryland Regulations (COMAR) 26.16.01 Accreditation and Training for Lead Paint Abatement Services. If a property was built before 1950 and will be used as rental housing, then compliance with COMAR 26.16.02 Reduction of Lead Risk in Housing and Environment Article Title 6, Subtitle 8 is required. Additional guidance regarding projects where lead paint may be encountered can be obtained by contacting the Environmental Lead Division at (410) 537-3825.

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
Office of Communications

cc: Bob Rosenbush, State Clearinghouse

Acronyms and Abbreviations

[µg/m ³]	micrograms per cubic meter
ACM	asbestos-containing materials
ACP	access control point
ADT	average daily traffic
AGL	above ground level
ALC	Adelphi Laboratory Center
ARL	U.S. Army Research Laboratory
Army	United States Army
AT/FP	Anti-Terrorism/Force Protection
BMP	best management practices
BPRF	Blossom Point Research Facility
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CWA	Clean Water Act
CZ	clear zone
dB	decibel
dBA	A-weighted decibel
DoD	Department of Defense
DOT	Department of Transportation
EA	environmental assessment
EIAP	environmental impact analysis process
EIS	environmental impact statement
EO	Executive Order
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
ESQD	explosive safety quantity distance
FONSI	Finding of No Significant Impact
FYDP	Future Years Defense Plan
GSA	General Services Administration
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HTW	high temperature water
HVAC	heating, ventilating, air conditioning
ICRMP	Integrated Cultural Resources Management Plan
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
INRMP	Integrated Natural Resource Management Plan
LBP	lead-based paint
L _{dn}	Day-Night Average Sound Level
LRC	Long Range Component
MBTA	Migratory Bird Treaty Act
MDE	Maryland Department of the Environment
MDNR	Maryland Department of Natural Resources
MSL	mean sea level
NCPC	National Capital Planning Commission
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFEC	Naval Facilities Engineering Command
NHPA	National Historic Preservation Act
NO ₂	nitrogen dioxide
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places

NRL	Naval Research Laboratory
O ₃	ozone
OSHA	Occupational Safety and Health Administration
Pb	lead
PCB	polychlorinated biphenyls
PEPCO	Potomac Electric Power Company
PM ₁₀	particulate matter less than or equal to 10 micrometers in diameter
ppm	parts per million
PSAP	public safety answering point
R&D	research and development
RCRA	Resource Conservation and Recovery Act
ROI	region of influence
RPMP	real property master plan
SHPO	State Historic Preservation Office
SMECO	Southern Maryland Electric Cooperative
SO ₂	sulfur dioxide
SRC	Short Range Component
UFC	United Facilities Criteria
USACE	U.S. Army Corps of Engineers
USAG	U.S. Army Garrison
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFDA	U.S. Food and Drug Administration
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound
WSSC	Washington Suburban Sanitary Commission
WUS	Waters of the U.S.