

Prepared for  
Department of the Navy  
Naval Facilities Engineering Command, Washington

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In accordance with  
Chief of Naval Operations Instruction 5090.1D, Reference (c) (January  
2014)

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Pursuant to  
National Environmental Policy Act Section 102(2)(c)

## **Environmental Assessment**

### **Advanced Energetics Research Laboratory Complex, Phase 2 (MILCON P190)**

### **Naval Support Facility Indian Head, Maryland**

**June 2015**



Please contact the following person  
with comments and questions:

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Environmental Assessment for  
Advanced Energetics Research Laboratory  
Complex, Phase 2 (MILCON P190)

Naval Support Facility Indian Head  
Maryland

Prepared for:

**Department of the Navy**  
Naval Facilities Engineering Command Washington

**June 2015**

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**Title**

Environmental Assessment for Advanced Energetics Research Laboratory Complex, Phase 2 (MILCON P190), Naval Support Facility Indian Head, Maryland

**Responsible Agency**

Department of the Navy  
Naval Facilities Engineering Command Washington  
1314 Harwood Street, Southeast  
Building 212  
Washington, D.C., 20374

**Proposed Action**

The Proposed Action is to construct and operate Phase 2 (Military Construction [MILCON] P190) of the Advanced Energetics Research Laboratory Complex at Naval Support Facility Indian Head (NSF Indian Head), Maryland. Under the Proposed Action, Building 600 would be demolished and personnel and operations from several ancillary research facilities at NSF Indian Head would be consolidated at the new facility.

**Designation**

Environmental Assessment

**Abstract**

The purpose of the Proposed Action is to provide a modern, reliable, and efficient facility to allow the Naval Surface Warfare Center, Indian Head Explosive Ordnance Disposal Technology Division, Research, Development, Testing, and Evaluation (RDT&E) Department at NSF Indian Head to discover and exploit new and advanced energetic materials. The Proposed Action is needed because the existing facility, Building 600, is an outdated, aging facility that no longer meets mission requirements. The Proposed Action (Preferred Alternative) would address this need by constructing a 21,030-square-foot (1,954 square-meter), two-story energetics research laboratory and associated infrastructure including a parking lot, sidewalks, and emergency generator in the southern portion of Cornwallis Neck, the mainside area of NSF Indian Head. Building 600, the primary existing RDT&E facility at NSF Indian Head would be demolished and the area would be revegetated. Personnel and operations from Building 600 and several ancillary facilities at NSF Indian Head would be consolidated in the new facility. The Alternative Action would extensively renovate Building 600 to meet required building codes and make the building a more suitable facility for energetics research. Under the No-Action Alternative, NSF Indian Head would not construct a new research facility or demolish Building 600.

The primary impacts under the Proposed Action would be to vegetation from tree clearing for the proposed laboratory, a minor increase in stormwater runoff from construction of the proposed laboratory and associated parking lot, and the demolition of Building 600, a contributing resource to a historic district on NSF Indian Head. NSF Indian Head would comply with all required federal and state stormwater management requirements and would obtain the required permits from the Maryland Department of the Environment for construction. NSF Indian Head is coordinating with the Maryland Historical Trust (the State Historic Preservation Office) to minimize or mitigate adverse

1 impacts (adverse effects under the National Historic Preservation Act) on historic resources under  
2 the Proposed Action, which includes amending the existing Disposition of Excess Structures  
3 Memorandum of Agreement. The Proposed Action is consistent with the enforceable policies of the  
4 Maryland Coastal Zone Management Program. Coordination with the U.S. Fish and Wildlife Service  
5 and Maryland Department of the Environment confirmed that the federally listed rare, threatened or  
6 endangered species would not be affected.

7 The Alternative Action and No-Action Alternative would generally have fewer impacts associated  
8 with ground disturbance since only renovation or the status quo would occur. Under the Action  
9 Alternative, there would be adverse impacts (adverse effects) to a historic resource due to  
10 renovations that would be needed for Building 600. Any vegetation that is removed to accommodate  
11 the renovations would be replanted, and there would be none or negligible impacts from stormwater  
12 associated with ground disturbing activities. The Alternative Action would provide an efficient, state-  
13 of-the-art research facility but would not consolidate RDT&E operations and would therefore not  
14 fully meet the purpose of and need for the action.

15 Under the No-Action Alternative, Building 600 would not be demolished. The No-Action Alternative  
16 would not provide a modern, reliable, efficient RDT&E facility and would not consolidate RDT&E  
17 operations. As a result, the No-Action Alternative does not meet the purpose of and need for the  
18 action. Council on Environmental Quality guidelines stipulate that the No-Action Alternative be  
19 analyzed to serve as a baseline to assess any environmental consequences that may occur if the  
20 Proposed Action is not implemented.

#### 21 **Availability**

22 The public is invited to review and comment on this document for 14 days from the publication of  
23 the Notice of Availability.

#### 24 **Point of Contact**

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26 Naval Facilities Engineering Command Washington  
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## EXECUTIVE SUMMARY

1  
2 Naval Support Facility Indian Head (NSF Indian Head) occupies approximately 3,500 acres (1,416  
3 hectares) on the eastern bank of the Potomac River in Charles County, Maryland, approximately 30  
4 miles (48 kilometers) south of Washington, D.C. The purpose of the Proposed Action is to provide a  
5 modern, reliable, and efficient facility to allow the Naval Surface Warfare Center, Indian Head  
6 Explosive Ordnance Disposal Technology Division (NSWC IHEODTD), Research, Development,  
7 Testing, and Evaluation (RDT&E) Department to discover and exploit new and advanced energetic  
8 materials. The overall need for the action is driven by the inefficiencies, unreliability, and safety  
9 concerns associated with some of the facilities that currently support RDT&E operations at NSF  
10 Indian Head. These operations take place in Building 600 and several other ancillary buildings  
11 throughout Cornwallis Neck, the mainside area of NSF Indian Head. The primary facility, Building  
12 600, is inefficient and unreliable in that the need for constant maintenance and repairs limits and  
13 delays the development of energetics for future warfare systems. The building cannot accommodate  
14 overnight storage of explosives, which results in additional time being spent transporting the  
15 materials to and from the facility. In addition, having research and laboratory facilities scattered in  
16 different buildings limits the overall efficiency of operations at the installation.

17 The Proposed Action (Preferred Alternative) would address these issues by constructing Phase 2  
18 (Military Construction P190) of the Advanced Energetics Research Laboratory Complex in the  
19 southern portion of the mainside area of NSF Indian Head. The 21,030-square-foot (SF) (1,954 square  
20 meter[SM]), two-story facility would provide laboratory space for the NSWC IHEODTD RDT&E  
21 Department and would have supporting infrastructure, including a parking lot, sidewalks, and an  
22 emergency generator. Once the new facility is constructed and occupied, Building 600 would be  
23 demolished and the land would be restored to a vegetated condition. Sustainable design principles  
24 would be included in the design and construction of the facility and supporting infrastructure in  
25 accordance with Executive Order (EO) 13423, *Strengthening Federal Environmental, Energy, and*  
26 *Transportation Management*, and other laws and EOs. The facility would meet Leadership in Energy  
27 and Environmental Design ratings and comply with the Energy Policy Act of 2005 and the Energy  
28 Independence and Security Act of 2007. Low impact development would also be included in the  
29 design and construction of the facility, as appropriate.

30 The Alternative Action would extensively renovate Building 600 to meet required building codes and  
31 convert the building to a more suitable facility for energetics research, but RDT&E operations would  
32 not be consolidated.

33 Under the No-Action Alternative, the Department of the Navy (Navy) would not construct a new  
34 facility or demolish Building 600 and would continue with ongoing repairs and maintenance of  
35 Building 600. These minor repairs would not bring the building up to code, would not allow for  
36 overnight storage of explosives, and would not improve its long-term suitability for energetics  
37 research. RDT&E operations would remain in Building 600 and ancillary facilities.

38 The Proposed Action (Preferred Alternative) would result in the demolition of a historic property  
39 (adverse effect under the National Historic Preservation Act); removal of vegetation, resulting in an  
40 increase in impervious and semi-pervious surfaces; earth disturbance and tree clearing; and  
41 temporary noise, air emissions, and waste generation due to construction and demolition activities.  
42 Environmental benefits of the Proposed Action (Preferred Alternative) would restore the Building  
43 600 footprint to a vegetated condition; improve water and energy efficiency; improve efficiency in  
44 the management of hazardous waste; and improve explosives safety and occupational health and  
45 safety from construction of a state-of-the-art, energy-efficient facility with the ability to store  
46 explosives overnight.

1 The Alternative Action would be similar to the Proposed Action (Preferred Alternative) in terms of  
2 temporary impacts from noise, air emissions, and waste generation during renovation activities, as  
3 well as improvements to waste management, efficiency, and safety. Whereas the Proposed Action  
4 would demolish a historic resource, the Alternative Action would renovate it (adverse effect under  
5 the National Historic Preservation Act). The Alternative Action would involve only minimal impacts  
6 on vegetation and stormwater because a new facility would not be constructed and there would be  
7 less ground disturbance. The Alternative Action would provide an efficient, state-of-the-art research  
8 facility but would not consolidate RDT&E operations and would therefore not fully meet the purpose  
9 of and need for the action.

10 The No-Action Alternative would not involve any direct impacts on environmental resources but  
11 would result in continued inefficiencies in utilities and waste management and continued  
12 deficiencies in building code safety and maintenance. The No-Action Alternative would not provide  
13 a modern, reliable, efficient RDT&E facility and would not consolidate RDT&E operations. As a result,  
14 the No-Action Alternative does not meet the purpose of and need for the action. Council on  
15 Environmental Quality guidelines stipulate that the No-Action Alternative be analyzed to serve as a  
16 baseline to assess any environmental consequences that may occur if the Proposed Action is not  
17 implemented.

18 Table ES-1 summarizes the anticipated environmental impacts of the Proposed Action (Preferred  
19 Alternative, Action Alternative and No-Action Alternative). Several resources were dismissed from  
20 detailed analysis in the Environmental Assessment because there would be no impacts or impacts  
21 would be negligible; the resources dismissed include Socioeconomics and Environmental Justice,  
22 Community Facilities and Services, Transportation, Noise, Infrastructure and Utilities (with the  
23 exception of Solid and Hazardous Wastes), and Floodplains (see Section 2.3 of the Environmental  
24 Assessment for additional details).

25 This Environmental Assessment has been prepared in accordance with the requirements of the  
26 National Environmental Policy Act (NEPA) of 1969 (42 United States Code 4331 et seq.), the Council  
27 on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 Code  
28 of Federal Regulations [CFR] Parts 1500–1508), the Navy’s NEPA procedures contained in 32 CFR  
29 Part 775), and the Chief of Naval Operations Instruction, *Navy Environmental Readiness Program*  
30 *Manual* (Office of the Chief of Naval Operations Instruction [OPNAVINST] 5090.1D, Chapter 10).

31 NSF Indian Head is consulting with the Maryland Historical Trust (MHT, the State Historic  
32 Preservation Office) under Section 106 of the National Historic Preservation Act because Building  
33 600 is a contributing resource to the Naval Power Factory Historic District on the installation. The  
34 Navy is coordinating with the MHT to minimize or mitigate adverse effects, which includes  
35 amendment of the existing Disposition of Excess Structures Memorandum of Agreement. In addition,  
36 NSF Indian Head submitted a Federal Consistency Determination for the Maryland Department of the  
37 Environment to confirm that the Proposed Action is consistent with the enforceable policies of the  
38 Maryland Coastal Zone Management Program. NSF Indian Head coordinated with the U.S. Fish and  
39 Wildlife Service and Maryland Department of the Environment to confirm that federally listed rare,  
40 threatened or endangered species would not be affected.

Table ES-1. Summary of Environmental Consequences

Environmental Area	Proposed Action (Preferred Alternative)	Alternative Action	No-Action Alternative
<b>Architectural Resources</b>	<p><b>Adverse impact</b> (<i>adverse effect</i> under the <b>National Historic Preservation Act [NHPA]</b>) from the demolition of Building 600. The Navy would amend the Disposition of Excess Structures Memorandum of Agreement with the State Historic Preservation Office, the Maryland Historical Trust (MHT), to mitigate adverse impacts. Coordination with the MHT is ongoing.</p> <p><b>Minor impact</b> (no adverse effect under the NHPA) due to the construction of the proposed laboratory adjacent to historic steam lines.</p>	<p><b>Adverse impact</b> (<i>adverse effect</i> under the NHPA) due to extensive renovations to Building 600. The Navy would amend to the Disposition of Excess Structures Memorandum of Agreement with the MHT. Coordination with the MHT is ongoing.</p>	<b>No impact</b> (no adverse effect under NHPA).
<b>Archeological Resources</b>	<b>No impact.</b> Minimal potential for presence of archeological resources.	<b>Same</b> as the Proposed Action.	<b>No impact.</b>
<b>Biological Resources (Vegetation, Wildlife, RT&amp;E species)</b>	<p><b>Minor adverse impact</b> due to clearing of approximately 32,962 square feet (SF) (3,062 square meters [SM]) of forest. Wildlife utilizing the proposed site for the new laboratory would need to relocate, but no long-term impacts on wildlife populations, migratory birds, or forest interior dwelling species (FIDS) are anticipated.</p>	<b>Negligible adverse impact</b> due to renovation of Building 600. Disturbed areas would be revegetated and landscaped. No impact to migratory birds or FIDS.	<b>No impact.</b>
	<p><b>Minor improvement</b> due to restoration of the Building 600 footprint (13,924 SF, 1,293 SM) to a vegetated condition.</p>		
	<p><b>No impact on</b> federally-listed rare, threatened or endangered (RT&amp;E) species or bald eagle nesting activities.</p>	<b>Same</b> as the Proposed Action.	

Table ES-1. Summary of Environmental Consequences

Environmental Area	Proposed Action (Preferred Alternative)	Alternative Action	No-Action Alternative
Surface Waters	<b>Negligible, short-term, adverse impacts on surface water.</b> The Navy would adhere to Maryland Department of the Environment (MDE) -approved sediment and erosion control measures and stormwater management plans to minimize likelihood of sediment transport and water quality impacts. Temporary wastewater from decontamination of Building 600 during demolition would be collected, sampled, and disposed of properly.	<b>Similar impact</b> as the Proposed Action due to earth disturbance at Building 600 during renovations, although there would be less ground disturbance than for the Proposed Action. The Navy would implement sediment and erosion control measures to minimize likelihood of sediment transport and water quality impacts.	<b>No impact.</b>
Groundwater	<b>Minor reduction</b> in demand due to improved water efficiency and the elimination of leaks.	<b>Same</b> as the Proposed Action.	<b>No change</b> in groundwater demand.
Wetlands	<b>No impact.</b> No wetlands in project vicinity.	<b>Same</b> as the Proposed Action.	<b>Same</b> as the Proposed Action.
Stormwater	<p><b>Minor impact</b> due to construction of 28,380 SF (2,637 SM) of impervious surfaces. The design would incorporate sediment and erosion control and low impact development measures, which would minimize stormwater runoff.</p> <p><b>Minor improvement</b> due to restoration of the Building 600 footprint to a vegetated condition. This would result in reduced generation of stormwater runoff within the subwatershed and an approximate net reduction of 13,924 SF (1,293 SM) of impervious surface area across the installation.</p>	<b>Negligible impact</b> due to earth disturbance at Building 600 during renovations. The Navy would implement sediment and erosion control measures during renovation to minimize stormwater runoff.	<b>No impact.</b>

Table ES-1. Summary of Environmental Consequences

Environmental Area	Proposed Action (Preferred Alternative)	Alternative Action	No-Action Alternative
<b>Coastal Zone</b>	<b>Minor impact</b> due to tree clearing and earth disturbance. The Navy would incorporate low impact development measures and would replant trees if required based on the Coastal Zone Management Act federal consistency determination review process. Consistent with the enforceable policies of the state's Coastal Zone Management Program.	<b>Negligible impact.</b>	<b>No impact.</b>
<b>Geology, Topography and Soils</b>	No unique geological features exist within the project area and <b>no impacts to geological resources.</b> <b>Negligible impact to topography</b> due to grading for the proposed laboratory. <b>Minimal impact to soils</b> due to construction and demolition activities. The Navy would adhere to MDE-approved sediment and erosion control plans to minimize the alteration or loss of topsoil. Potentially contaminated soil from Environmental Restoration (ER) sites at Building 600 would be handled properly in accordance with federal and state regulations and the Final Record of Decision for the Lab Area.	No unique geological features exist within the project area and <b>no impacts to geological resources.</b> <b>Negligible impact to topography</b> from earth disturbance during renovations. <b>Minimal impact</b> due to renovation activities. Potentially contaminated soil from ER sites at Building 600 would be handled properly in accordance with federal and state regulations and the Final Record of Decision for the Lab Area.	<b>No impact.</b>
<b>Air Quality</b>	<b>Minimal impact</b> due to equipment installation (e.g., generator) and temporary emissions from construction and demolition activities.	<b>Minimal impact</b> due to temporary emissions from renovation activities.	<b>No impact.</b>
	<b>No impact</b> on the types or quantities of process-related waste.	<b>Same</b> as the Proposed Action.	<b>Same</b> as the Proposed Action.

Table ES-1. Summary of Environmental Consequences

Environmental Area	Proposed Action (Preferred Alternative)	Alternative Action	No-Action Alternative
<b>Infrastructure and Utilities (Solid and Hazardous Waste)</b>	<b>Minor improvement</b> to waste management due to improved fire protection, which would reduce the frequency of explosive waste removal from the laboratory.	<b>Same</b> as the Proposed Action.	<b>No impact.</b>
	<b>Temporary generation</b> of hazardous waste due to the demolition of Building 600 and disposal of debris that may contain asbestos, lead, polychlorinated biphenyls, and/or mercury.	<b>Temporary generation</b> of the same types of material waste as the Proposed Action.	<b>No generation</b> of demolition-related waste.
<b>Health and Safety</b>	<b>Moderate improvement</b> to occupational safety due to replacement of Building 600 with a modern laboratory that addresses health and safety requirements.	<b>Moderate improvement</b> to occupational safety due to correction of health and safety deficiencies at Building 600.	<b>No impact.</b>
	<b>Temporary handling</b> of hazardous materials and potentially contaminated soil during demolition of Building 600. Safety procedures would be adhered to in accordance with federal and state regulations.	<b>Same</b> as the Proposed Action.	<b>No impact.</b>
<b>Explosives Safety</b>	<p><b>Moderate improvement</b> due to the inclusion of fire protection, reduction in the transport of energetic materials to once per week instead of daily, and consolidation of explosives operations. Since explosives could be stored overnight in the new facility, there would be an improvement in potential hazards associated with handling of explosives.</p> <p><b>No impact</b> from the demolition of Building 600. All demolition activities would be conducted in accordance with the requirements of NAVSEA OP5 and NOSSAINST 8020.15D.</p>	<p><b>Same</b> as the Proposed Action <b>except</b> explosives operations would not be consolidated.</p> <p><b>No impact</b> from the renovation of Building 600. All renovation activities would be conducted in accordance with the requirements of NAVSEA OP5 and NOSSAINST 8020.15D.</p>	<b>Minor, long-term adverse impact</b> since explosives operations would not be consolidated.

**Table ES-1. Summary of Environmental Consequences**

<b>Environmental Area</b>	<b>Proposed Action (Preferred Alternative)</b>	<b>Alternative Action</b>	<b>No-Action Alternative</b>
<b>Land Use</b>	<b>Consistent</b> with the 2010 NSF Indian Head Master Plan RDT&E consolidation goals and would support the Navy's effort to distribute organizations and functions more efficiently.	<b>Not consistent</b> with the 2010 NSF Indian Head Master Plan and would not contribute to the Navy's consolidation goals. Minor, adverse impact to land use planning.	<b>Same</b> as the Alternative Action.

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**LIST OF ACRONYMS**

ADA	Americans with Disabilities Act
AQCR	Air Quality Control Region
BMP	Best Management Practice
BO	Biological Opinion
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program
DDESB	Department of Defense Explosives Safety Board
DOD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
EO	Executive Order
ER	Environmental Restoration
ESA	Endangered Species Act
ESQD	Explosives Safety Quantity Distance
ESS	Explosives Safety Submission
FIDS	Forest Interior Dwelling Species
FONSI	Finding of No Significant Impact
GHG	Greenhouse Gas
GSIP	Global Shore Infrastructure Plan
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
km	Kilometer
LEED	Leadership in Energy and Environmental Design
LID	Low Impact Development
m	Meter
MBTA	Migratory Bird Treaty Act
MDE	Maryland Department of the Environment
MDNR	Maryland Department of Natural Resources
MEC	Munitions and Explosives of Concern
MHT	Maryland Historical Trust
MILCON	Military Construction

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MOA	Memorandum of Agreement
NAAQS	National Ambient Air Quality Standards
National Register	National Register of Historic Places
Navy	Department of the Navy
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO <sub>2</sub>	Nitrogen Dioxide
NOSSA	Naval Ordnance Safety and Security Activity
NO <sub>x</sub>	Nitrogen Oxides
NSASP	Naval Support Activity South Potomac
NSF Indian Head	Naval Support Facility Indian Head
NSWC IHEODTD	Naval Surface Warfare Center, Indian Head Explosive Ordnance Disposal Technology Division
O <sub>3</sub>	Ozone
OPNAVINST	Chief of Naval Operations Instruction
Pb	Lead
PCB	Polychlorinated Biphenyl
PM	Particulate Matter
PM <sub>10</sub>	Coarse Particulate Matter
PM <sub>2.5</sub>	Fine Particulate Matter
PTC	Permit to Construct
RCRA	Resource Conservation and Recovery Act
RDT&E	Research, Development, Testing, and Evaluation
REPS	Raptor Electrocution Prevention Study
RT&E	Rare, Threatened, and Endangered
SF	Square Feet
SHPO	State Historic Preservation Office/Officer
SM	Square Meter
SO <sub>2</sub>	Sulfur Dioxide
U.S.	United States
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile Organic Compound

## 1. INTRODUCTION

This Environmental Assessment (EA) evaluates the anticipated environmental impacts from the proposed construction and operation of Phase 2 (Military Construction [MILCON] P190) of the Advanced Energetics Research Laboratory Complex that would support Research, Development, Testing, and Evaluation (RDT&E) for the Naval Surface Warfare Center, Indian Head Explosive Ordnance Disposal Technology Division (NSWC IHEODTD), at Naval Support Facility Indian Head (NSF Indian Head), Maryland. The proposed 21,030-square foot (SF) (1,954 square meter[SM]), two-story facility would provide research and laboratory space for the NSWC IHEODTD and would have supporting infrastructure, including a parking lot, sidewalks, and emergency generator. Once the new facility is constructed, existing personnel and operations would be consolidated from multiple, disparate facilities at NSF Indian Head (such as Buildings 600, 438, and 922) and Building 600 would be demolished, and the area would be returned to a vegetated state. Building 600, a contributing resource to the Naval Powder Factory Historic District (CH-491), is an aging and outdated facility that does not provide all of the necessary laboratory and research capabilities needed to meet the Department of the Navy’s (Navy) mission. In addition, having facilities scattered in multiple buildings is not efficient in fulfilling mission operations.

The Proposed Action would align with the Navy’s Surface Warfare Enterprise Global Shore Infrastructure Plan (GSIP), Chief of Naval Operations Guidance, and Department of Defense (DOD) Director of Defense Research and Engineering Imperatives. These and other plans guide the facility and research requirements necessary across the Navy to support the warfighter.

This EA has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4331 et seq.), the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508), the Navy’s NEPA procedures contained in 32 CFR Part 775), and the Chief of Naval Operations Instruction, *Navy Environmental Readiness Program Manual* (OPNAVINST 5090.1D, Chapter 10).

The information presented within this document serves as the basis for deciding whether the implementation of the Proposed Action would result in a significant impact on the environment, requiring the preparation of an Environmental Impact Statement, or that no significant impacts would occur and, therefore, a Finding of No Significant Impact (FONSI) would be appropriate.

### 1.1 Background and History of NSF Indian Head

NSF Indian Head is a Naval Support Activity South Potomac (NSASP) facility within the Naval District Washington Region. NSF Indian Head occupies approximately 3,500 acres (1,416 hectares) on the eastern bank of the Potomac River in Charles County, Maryland, approximately 30 miles (48 kilometers [km]) south of Washington, D.C. (Figure 1-1). The property consists primarily of two parcels of land, Cornwallis Neck (the 2,031-acre [822-hectare] main portion of the installation) and Stump Neck (1,113 acres; 450 hectares), which are separated by the Mattawoman Creek.



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**Figure 1-1. Location of NSF Indian Head in the Washington, D.C., Metropolitan Area**

1 The United States (U.S.) Navy established the Naval Proving Ground at Cornwallis Neck (a portion of  
2 which was known as Indian Head) in 1890. The Naval Proving Ground was renamed the Naval  
3 Powder Factory in 1923, following the closure of proving ground activities at Cornwallis Neck. Since  
4 the 1950s, the Naval Powder Factory (renamed the Naval Propellant Plant in 1958 and the Naval  
5 Ordnance Station in 1966) has produced a wide range of energetic materials, such as nitroglycerin,  
6 missile fuel for the long-range Polaris missile, Otto Fuel II for high-speed torpedoes, plastic explosive  
7 C-3, and propellants for emergency ejection mechanisms. In 1992, the Naval Ordnance Station  
8 became the NSWC IHEODTD.

9 Over the past several decades, many commands have been relocated to Cornwallis Neck, including  
10 the Naval Ordnance Safety and Security Activity (NOSSA), the Joint Interoperability Test Command  
11 (JITC), and the U.S. Marine Corps Chemical Biological Incident Response Force. In addition, the Naval  
12 Explosive Ordnance Disposal Technology Division, which is now part of the NSWC IHEODTD,  
13 currently conducts activities at Stump Neck.

14 The installation was renamed NSF Indian Head following a Navy reorganization in October 2003.  
15 Subsequently, the NSWC IHEODTD, NOSSA, Joint Interoperability Test Command, and Chemical  
16 Biological Incident Response Force are now mission-oriented supported commands at NSF Indian  
17 Head.

## 18 **1.2 Indian Head Division, Naval Surface Warfare Center Mission**

19 NSWC IHEODTD comprises the largest energetic materials research and development activity in the  
20 DOD and the highest concentration of explosives research personnel in the United States. At NSF  
21 Indian Head, the Division employs approximately 1,535 personnel (5 military, 1,411 civilian and 119  
22 on-site contractors) and operates approximately 928 facilities on Cornwallis Neck and Stump Neck  
23 (NSASP 2012; NAVFAC 2011).

24 The mission of NSWC IHEODTD is to provide quality and responsive technical engineering,  
25 manufacturing, and material support to the U.S. Fleet Forces Command and other operating forces.  
26 NSWC IHEODTD is unique among its counterparts (both military and commercial) because its  
27 mission focuses on the entire lifecycle of weapons systems, from laboratory-scale research and scale-  
28 up to full-scale manufacture, quality assurance, and demilitarization.

29 NSWC IHEODTD is divided into departments that report to a Captain and a Technical Director. The  
30 RDT&E Department is composed of individual departments for research, advanced technology  
31 development, and systems evaluation.

## 32 **1.3 Guiding Principles for RDT&E Activities**

33 Several overarching documents guide Navy mission and facility requirements specific to naval  
34 warfare systems and RDT&E, including the following:

- 35 • Surface Warfare Enterprise Global Shore Infrastructure Plan (or GSIP) identifies a moderate  
36 “yellow” gap for energetics research laboratories in the Navy.
- 37 • Navy Ashore Vision 2035 “Shore Capabilities” identifies a goal to provide agile laboratory  
38 space to meet future needs of advanced platform systems, such as Sea Power 21.

- 1 • Chief of Naval Operations Guidance for Executing the Maritime Strategy identifies several key  
2 points including “pursue technological superiority” and “maximize the Navy’s science and  
3 technology investment in basic science and discovery to seek ways to support our Sailors’  
4 future warfighting advantage.”

5 These documents and others support the need for state-of-the-art facilities for RDT&E (Department  
6 of the Navy 2014a). Future weapons systems require energetics that can only be developed with  
7 state-of-the-art equipment. The equipment has increasingly sensitive condition requirements for  
8 vibration, noise, mechanical interference, temperature, humidity, dust, power quality, and  
9 electromagnetic interference to perform at full potential.

#### 10 **1.4 Purpose of and Need for the Action**

11 The purpose of the Proposed Action is to provide a modern, reliable, and efficient research laboratory  
12 facility at NSF Indian Head to allow the NSWC IHEODTD RDT&E Department to discover and exploit  
13 new and advanced energetic materials. Research and development of these energetic materials will  
14 lead to new weapons systems, platform designs, and applications that support the warfighter, as  
15 identified in the Navy’s Surface Warfare Enterprise GSIP, Chief of Naval Operations Guidance and  
16 DOD Director of Defense Research and Engineering Imperatives.

17 The need for the Proposed Action is driven by the inefficiencies, unreliability, and safety concerns  
18 associated with Building 600 and ancillary facilities that currently support RDT&E operations.  
19 Building 600 is a three-story, 42,304- SF (3,930 SM) laboratory that was built in 1945. This building  
20 is inefficient and unreliable in that it limits and delays the development of energetics for future  
21 warfare systems. Development of new applications is delayed by workarounds and downtime caused  
22 by the existing facility conditions, including a lack of functional explosives hoods, corroding and  
23 leaking plumbing and piping systems, and a lack of temperature and humidity control. The need for  
24 constant maintenance and repairs leads to delays in overall program efficiency and execution.  
25 Piecemeal repairs and upgrades to the building’s electrical system result in inefficient laboratory  
26 operations due to the delays associated with interrupted power supply. In addition, Building 600  
27 poses safety and building code concerns due to leaking pipes, mold, asbestos, a deteriorating roof,  
28 and potential mercury contamination resulting from historical laboratory activities within the  
29 building and the surrounding laboratories. Further, because Building 600 does not have a fire  
30 suppression system, no overnight storage of explosives is allowed in the laboratory. Therefore, all  
31 explosive materials must be transferred to the building at the start of each workday and removed to  
32 a storage magazine nightly, resulting in significant cost to operate and numerous delays. Building  
33 600 is also not compliant with Americans with Disabilities Act (ADA) requirements and would  
34 require extensive renovations impacting RDT&E operations in order to become ADA compliant. In  
35 addition to the deficiencies identified with Building 600, the Proposed Action is needed to consolidate  
36 research operations between Building 600 and ancillary facilities including Building 438 and  
37 Building 922 to streamline operations and improve efficiencies. These ancillary facilities also have  
38 safety and maintenance concerns associated with them. For example, Building 438 has leaking water,  
39 causing mold growth on walls and near explosive materials and Building 922 has a deteriorating roof,  
40 causing the interior of the building to be in substandard condition.

## 1.5 Regulatory Framework

In addressing environmental considerations, the Navy is guided by relevant statutes (and their implementing regulations) and Executive Orders (EOs) that establish standards and provide guidance on environmental and natural resources management and planning. These include the

- Clean Air Act (CAA),
- Clean Water Act (CWA),
- Coastal Zone Management Act (CZMA),
- Noise Control Act,
- Endangered Species Act (ESA),
- Migratory Bird Treaty Act (MBTA),
- Bald and Golden Eagle Protection Act,
- National Historic Preservation Act,
- Archaeological Resources Protection Act, Resource Conservation and Recovery Act, and
- Toxic Substances Control Act.

EOs bearing on the Proposed Action include the following:

- EO 11988, *Floodplain Management*;
- EO 11990, *Protection of Wetlands*;
- EO 12088, *Federal Compliance with Pollution Control Standards*;
- EO 12580, *Superfund Implementation*;
- EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*;
- EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*;
- EO 13175, *Consultation and Coordination with Indian Tribal Governments*;
- EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*;
- EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*;
- EO 13508, *Strategy for Restoring and Protecting the Chesapeake Bay Watershed*; and
- EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*.

These authorities are addressed in various sections throughout the EA when relevant to particular environmental resources and conditions.

## 1.6 Agency Coordination

NSF Indian Head is consulting with the Maryland Historical Trust (MHT) under Section 106 of the National Historic Preservation Act (NHPA) because Building 600 is a contributing resource to the Naval Powder Factory Historic District (CH-491). The Navy is coordinating with the MHT to minimize or mitigate adverse effects, which would include amendment of the existing Disposition of Excess Structures Memorandum of Agreement (MOA).

NSF Indian Head submitted a Federal Consistency Determination to the Maryland Department of Environment (MDE) for evaluation on 19 December 2014 to confirm that the Proposed Action is consistent with the enforceable policies of the Maryland Coastal Zone Management Program. No responses were received from the MDE within the 60-day review period. As a result, the Navy assumed concurrence with its Federal Consistency Determination for activities associated with the demolition of the existing RDT&E laboratory and construction of the new energetics laboratory.

1 NSF Indian Head also coordinated with the U.S. Fish and Wildlife Service (USFWS) and Maryland  
2 Department of Natural Resources (MDNR) to confirm that rare, threatened, or endangered species  
3 (RT&E) would not be affected. Response from the MDNR on 21 January 2015 indicated that there are  
4 no state or federal records of RT&E species occurring within the boundaries of the project site as  
5 delineated. Response from the USFWS on 11 February 2015 also indicated that with the exception  
6 for occasional transient individuals, no federally proposed or listed endangered or threatened  
7 species are known to exist within the project area.

## 2. PROPOSED ACTION AND ALTERNATIVES

The CEQ's *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* establish a number of policies for federal agencies, including "using the NEPA process to identify and assess reasonable alternatives to the Proposed Action that would avoid or minimize adverse effects of these actions on the quality of the human environment" (40 CFR 1500.2 [e]). This chapter provides a detailed description of the Proposed Action and a description of project alternatives, including evaluation criteria used to assess the feasibility of alternatives as well as alternatives eliminated from detailed analysis.

### 2.1 Description of the Proposed Action

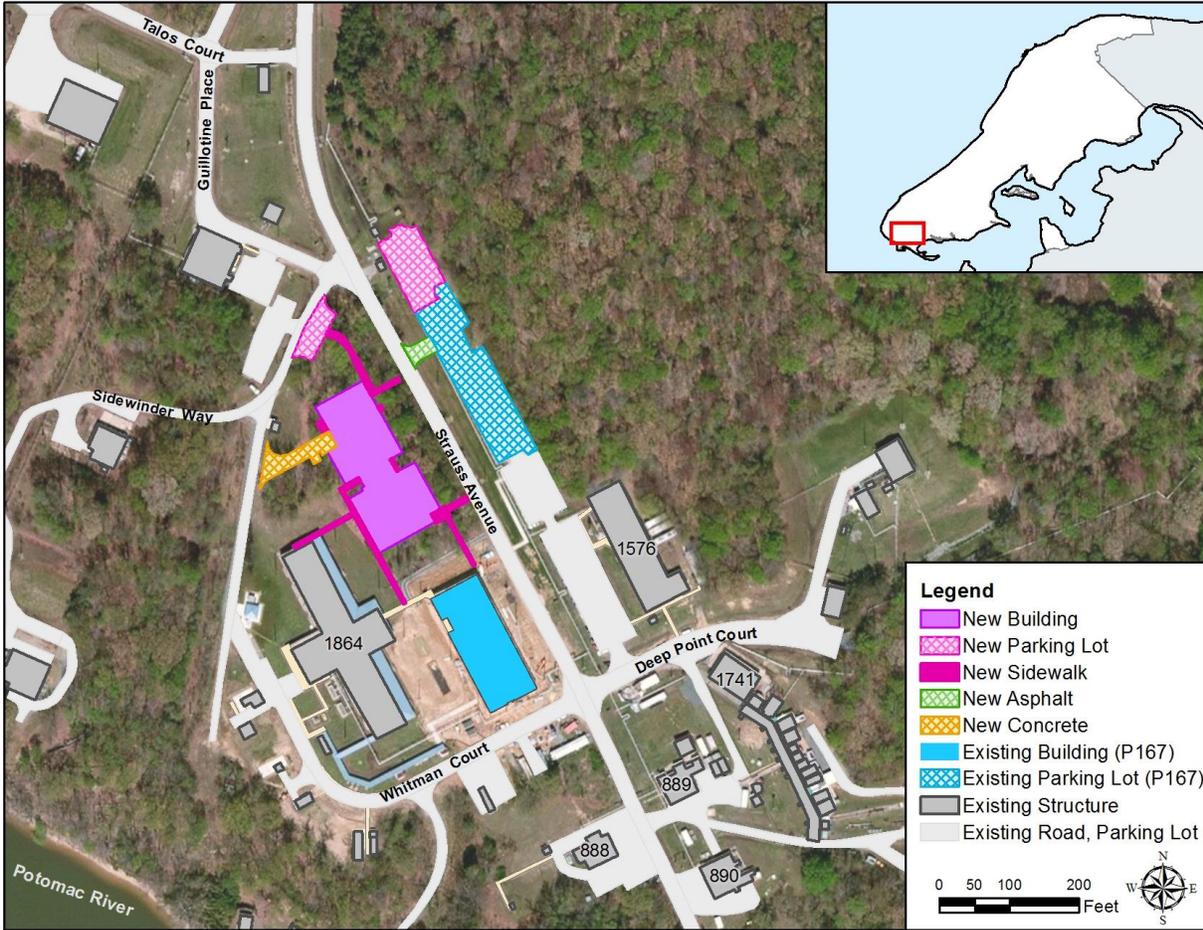
This section includes a brief discussion of the Proposed Action (Preferred Alternative) carried forward for analysis in this EA. Subsequent sections discuss the alternatives that were considered, but dismissed from further analysis. In developing the Proposed Action and reasonable alternatives, the Navy considered the following evaluation criteria:

- **Proximity to RDT&E Operations Supported by NSWC IHEODTD:** The Navy considered all land at Cornwallis Neck as a potential location for the new RDT&E facility. However, many RDT&E operations recently have been relocated to the area surrounding Building 1864, known as the Whitman Laboratory. This area is located near the southern tip of Cornwallis Neck on the mainside of NSF Indian Head. Consolidation near other RDT&E personnel would create efficiencies in work processes.
- **Consistency with 2010 NSF Indian Head Master Plan:** Approximately two-thirds of the land at Cornwallis Neck is designated in the 2010 NSF Indian Head Master Plan as being targeted for energetics operations. Because the research laboratory facility provided under this project would directly support energetics operations, placing the facility within this area would be consistent with the future development goals identified in the 2010 NSF Indian Head Master Plan as well as the ongoing update to the Plan.
- **Minimization of Environmental Impacts:** The Navy considered the various environmental constraints to development within NSF Indian Head. These constraints include, but are not limited to: large forested areas, wetlands, habitat for state or federally protected species, and areas that contain archeological resources.
- **Explosives Safety Constraints:** Approximately two-thirds of the land at Cornwallis Neck is encumbered by explosives safety quantity distance (ESQD) arcs. The facilities that generate these arcs either store or handle explosive materials, posing explosives safety hazards to personnel and facilities located within the arcs. Restrictions on the construction of new facilities and infrastructure within ESQD arcs limit the developable areas of the installation.

Alternatives that largely did not meet the above criteria were not considered further for development under the Proposed Action and alternatives.

#### 2.1.1 Proposed Action (Preferred Alternative)

The Proposed Action (Preferred Alternative) would construct Phase 2 (MILCON P190) of the Advanced Energetics Research Laboratory Complex at NSF Indian Head for NSWC IHEODTD in the southern portion of Cornwallis Neck. The Proposed Action would construct the new facility adjacent to Building 1864, which is known as the Whitman Laboratory (Figure 2-1).



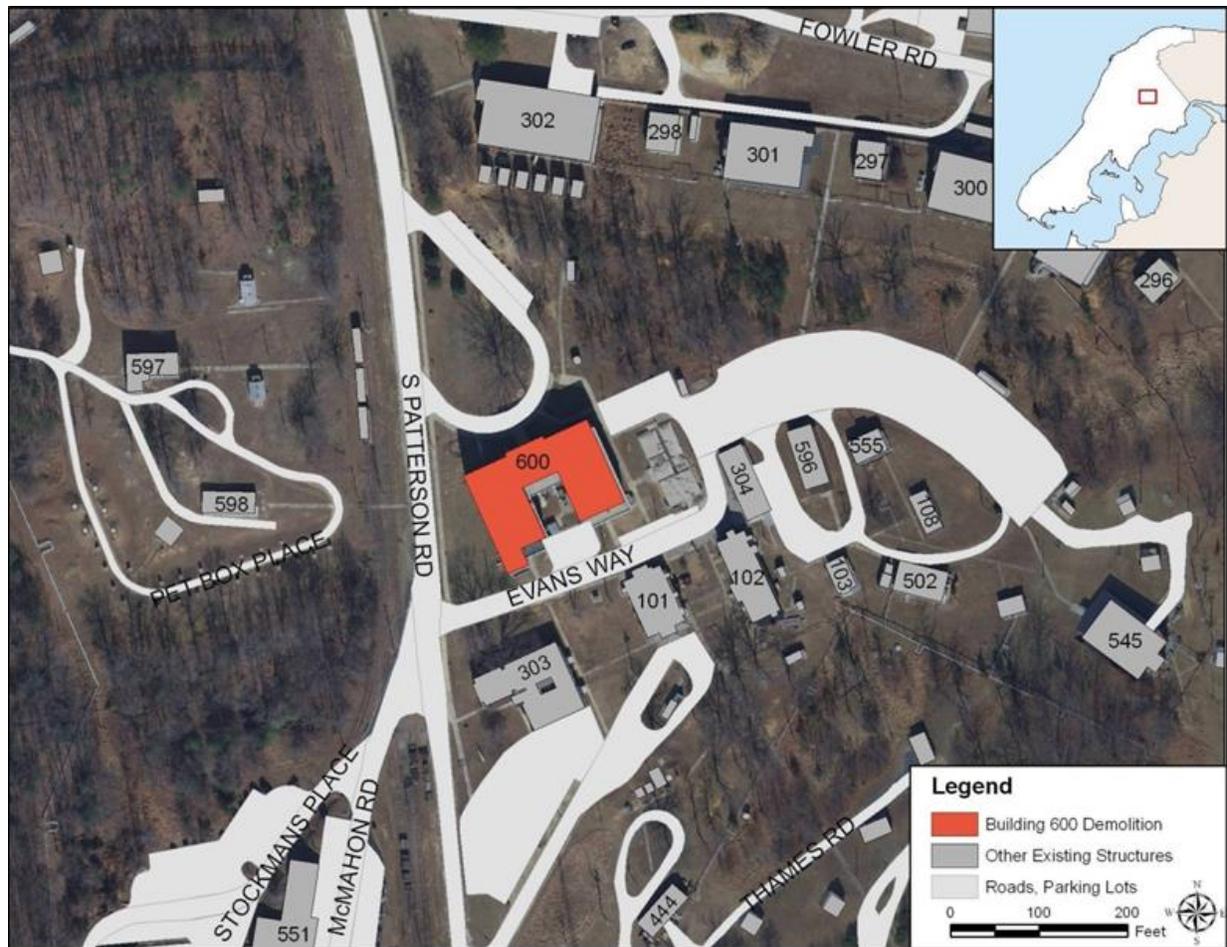
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**Figure 2-1. Location of Proposed Laboratory**

3 The 21,030-SF (1,954 square meter [SM]), two-story facility would include modern, consolidated  
 4 RDT&E laboratory space with conductive floors and chemical storage space for approximately 60  
 5 NSWC IHEODTD scientists and engineers. Personnel and operations would be consolidated from  
 6 Building 600 and ancillary facilities, including Building 438 and Building 922. The Proposed Action  
 7 would provide 17,150 SF (1,593 SM) of parking, sidewalks, a loading dock, and a back-up generator.  
 8 The approximately 9,800 SF (910 SM) expanded parking areas would utilize pervious pavement  
 9 techniques. The complex would be constructed to accommodate explosive materials and would likely  
 10 include a catenary lightning protection system to intercept lightning strikes to the building. The  
 11 Proposed Action would remove approximately 32,962 SF (3,062 SM) of forest. Once the new facility  
 12 is constructed and occupied, Building 600 would be demolished, and the area would be restored to a  
 13 vegetated condition (Figure 2-2).

14 Sustainable design principles would be included in the design and construction of the facility and  
 15 supporting infrastructure in accordance with EO 13423, *Strengthening Federal Environmental,*  
 16 *Energy, and Transportation Management*, and other laws and EOs. The facility would meet Leadership  
 17 in Energy and Environmental Design (LEED) ratings and comply with the Energy Policy Act of 2005  
 18 and the Energy Independence and Security Act of 2007 (EISA). Low impact development (LID) would  
 19 also be included in the design and construction of the facility, as appropriate.



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**Figure 2-2. Location of Building 600**

## 2.2 Other Alternatives Carried Forward for Analysis in the EA

### 2.2.1 Alternative 1 (Alternative Action)

The Alternative Action would extensively renovate Building 600 to meet required building codes and convert the building into a more suitable facility for energetics research and allow for overnight storage of explosives. Renovation would include decontamination to address chemical and explosive contaminants; replacement of the building façade and interior floor, walls, and utilities, leaving only the building frame; and various upgrades to meet fire protection and ADA requirements. Under this alternative, RDT&E operations would remain in Building 600 and ancillary facilities.

The Alternative Action would meet the purpose of and need for action in that it provides a modern laboratory facility for energetics research. The Alternative Action, however, would not consolidate RDT&E personnel and would be inconsistent with the 2010 NSF Indian Head Master Plan, which envisions administrative uses for the area around Building 600. The Alternative Action also would require temporary cessation of the supported RDT&E activities because no other suitable laboratories are available at NSF Indian Head to accommodate the temporary relocation of these activities while renovations are underway. Therefore, although this alternative is carried forward for analysis in the EA it is not the preferred alternative.

## 1 2.2.2 No-Action Alternative

2 Under the No-Action Alternative, NSF Indian Head would not construct Phase 2 of the Advanced  
3 Energetics Research Laboratory. The No-Action Alternative would continue with minor ongoing  
4 repairs and maintenance of Building 600, which would not bring the building up to code, allow for  
5 overnight storage of explosives, or improve its long-term suitability for energetics research. RDT&E  
6 operations would remain in Building 600 and ancillary facilities including Building 438 and Building  
7 922.

8 The No-Action Alternative would not meet the purpose of and need for the Proposed Action defined  
9 in Section 1.4. The No-Action Alternative would not provide a modern, reliable, efficient RDT&E  
10 facility; would not consolidate RDT&E operations; and would be inconsistent with the 2010 NSF  
11 Indian Head Master Plan. CEQ guidelines stipulate that the No-Action Alternative be analyzed to serve  
12 as a baseline to assess any environmental consequences that may occur if the Proposed Action is not  
13 implemented; therefore, this alternative is carried forward for analysis in the EA.

## 14 2.3 Alternatives Considered but Dismissed

15 The Navy explored whether other alternatives were potentially viable and ultimately dismissed them  
16 from further analysis in the EA. One option that was considered was to lease facilities. Working with  
17 energetics materials poses certain risks. Buildings suitable for this type of operations provide a level  
18 of security and explosives safety that is not available for lease through commercial sources for  
19 buildings. In addition, leasing a facility offsite would hinder collaboration between research groups  
20 of the NWSC IHD RDT&E Department. Therefore, this alternative was dismissed from further  
21 analysis.

22 The Navy also considered renovation of other existing facilities, but ultimately dismissed this  
23 alternative from further consideration. In addition to requiring costly upgrades to many facilities  
24 scattered in several locations, this alternative would not consolidate RDT&E operations at NSF Indian  
25 Head and would, therefore, not meet the purpose of and need for the action or be consistent with the  
26 2010 NSF Indian Master Plan. Therefore, this alternative was not carried forward for analysis in the  
27 EA.

## 28 2.4 Scope of the Issues

29 To the extent possible, analyses of the various resources presented in Chapter 3 of this EA are  
30 streamlined based on the anticipated level of potential impact. As such, and consistent with 40 CFR  
31 1501.7(a)(3), the following resource areas are not analyzed in Chapter 3 of this EA, either because  
32 the Proposed Action has no potential to affect them or because the potential impacts would be  
33 negligible:

- 34 • **Socioeconomics and Environmental Justice:** The Proposed Action would not result in  
35 changes to demographics or housing and would not result in adverse impacts on resources  
36 related to environmental justice. Personnel that would be consolidated within the new  
37 proposed research facility already work at NSF Indian Head, so there would be no new influx  
38 of personnel. In addition, the Proposed Action would result in only negligible, temporary  
39 additive impacts on the local economy from construction activities. Therefore,  
40 socioeconomics and Environmental Justice are not analyzed further in this EA.
- 41 • **Community Facilities and Services:** The Proposed Action would not affect community  
42 facilities, such as emergency response, education, or recreational areas at NSF Indian Head  
43 or in the community; therefore, this resource is not analyzed in further detail in the EA.

- 1       • **Transportation:** Transportation systems include the vehicles and infrastructure necessary  
2       to convey passengers and goods from one location to another. The Proposed Action would  
3       result in a temporary increase in traffic on the installation due to an increase in construction  
4       vehicles, and some instances of temporary roadway delays may occur near the construction  
5       and demolition sites; however, this would be a short-term, minimal localized impact that  
6       would not affect overall circulation on NSF Indian Head. New parking spaces would  
7       accommodate parking needs for the proposed laboratory. The consolidation of laboratory  
8       space and reduced requirements for transporting explosive materials would lead to a  
9       decrease in vehicular use between buildings on the installation.

10       As with the Proposed Action, the Alternative Action would alleviate the need to transport  
11       explosive materials into and out of the laboratory facilities on a daily basis. Otherwise, the  
12       Alternative Action would not result in any noticeable impacts on transportation. The No-  
13       Action Alternative would have no effect on transportation patterns or infrastructure.

14       Therefore, for the reasons stated above, transportation was not further evaluated in the EA.

- 15       • **Noise:** The Proposed Action would produce temporary noise through demolition and  
16       construction activities; however, there would be no long-term change in operational noise  
17       levels because activities would be confined to the laboratory interior with minimal effect on  
18       the surrounding environment. Noise resulting from the Proposed Action during construction  
19       and demolition would not exceed local/state thresholds outside the fence line. Workers  
20       associated with construction and demolition activities would wear appropriate hearing  
21       protection. Impacts from the Action Alternative would be nearly identical to the Proposed  
22       Action. The No-Action Alternative would have no effect on existing noise levels. Therefore,  
23       noise was not further evaluated in the EA.

- 24       • **Infrastructure and Utilities (with the exception of solid and hazardous waste):**  
25       Infrastructure and utilities are the basic facilities and services needed for a community or  
26       society to function, and include communications systems, water and sewer lines, and solid  
27       and hazardous waste disposal. The Proposed Action and Alternative Action would result in  
28       improvements to utilities and infrastructure, because the construction associated with the  
29       new facility and renovations to Building 600 under the Alternative Action would result in  
30       greater energy efficiency and updated systems. New construction would comply with the  
31       Energy Policy Act of 2005, which established energy management goals for federal facilities  
32       and fleets. NSF Indian Head has sufficient existing capacity to support the demand of the new  
33       facility. The No-Action Alternative would not fully address utility-related inefficiencies  
34       associated with Building 600, but ongoing maintenance of the facility would continue in order  
35       to keep existing utilities and infrastructure functioning. Therefore, infrastructure and utilities  
36       (with the exception of solid and hazardous waste management) was not further evaluated in  
37       the EA.

- 38       • **Floodplains:** A floodplain is the area along, or adjacent to, a stream or a body of water that is  
39       capable of storing or conveying floodwaters. Floodplains perform important natural  
40       functions, including moderating peak flows, maintaining water quality, recharging  
41       groundwater, and preventing erosion. In addition, floodplains provide wildlife habitat,  
42       recreational opportunities, and aesthetic benefits. To protect floodplains and minimize future  
43       flood damage, EO 11988, *Floodplain Management*, was implemented in 1977 to restrict  
44       development within the 100-year floodplain. No floodplains are located within the proposed  
45       project site, so floodplains would not be affected under the Proposed Action or alternatives.  
46       Therefore, this resource was not further evaluated in the EA.

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### 1    **3.    AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

2    This chapter describes both the existing environmental conditions within the boundaries of the  
3    Proposed Action and vicinity, as appropriate, and the anticipated environmental consequences  
4    associated with implementing the Proposed Action and alternatives. The following resources were  
5    identified and analyzed for detailed analysis:

- 6        •    Cultural and Historic Resources
- 7        •    Biological Resources
- 8        •    Water Resources
- 9        •    Geology, Topography, and Soils
- 10       •    Air Quality
- 11       •    Infrastructure and Utilities (Solid and Hazardous Waste)
- 12       •    Health and Safety
- 13       •    Explosives Safety
- 14       •    Land Use

15    The environmental resources and potential areas of contamination at the site of the proposed  
16    laboratory and Building 600 are summarized in Figures 3-1 and Figure 3-2.

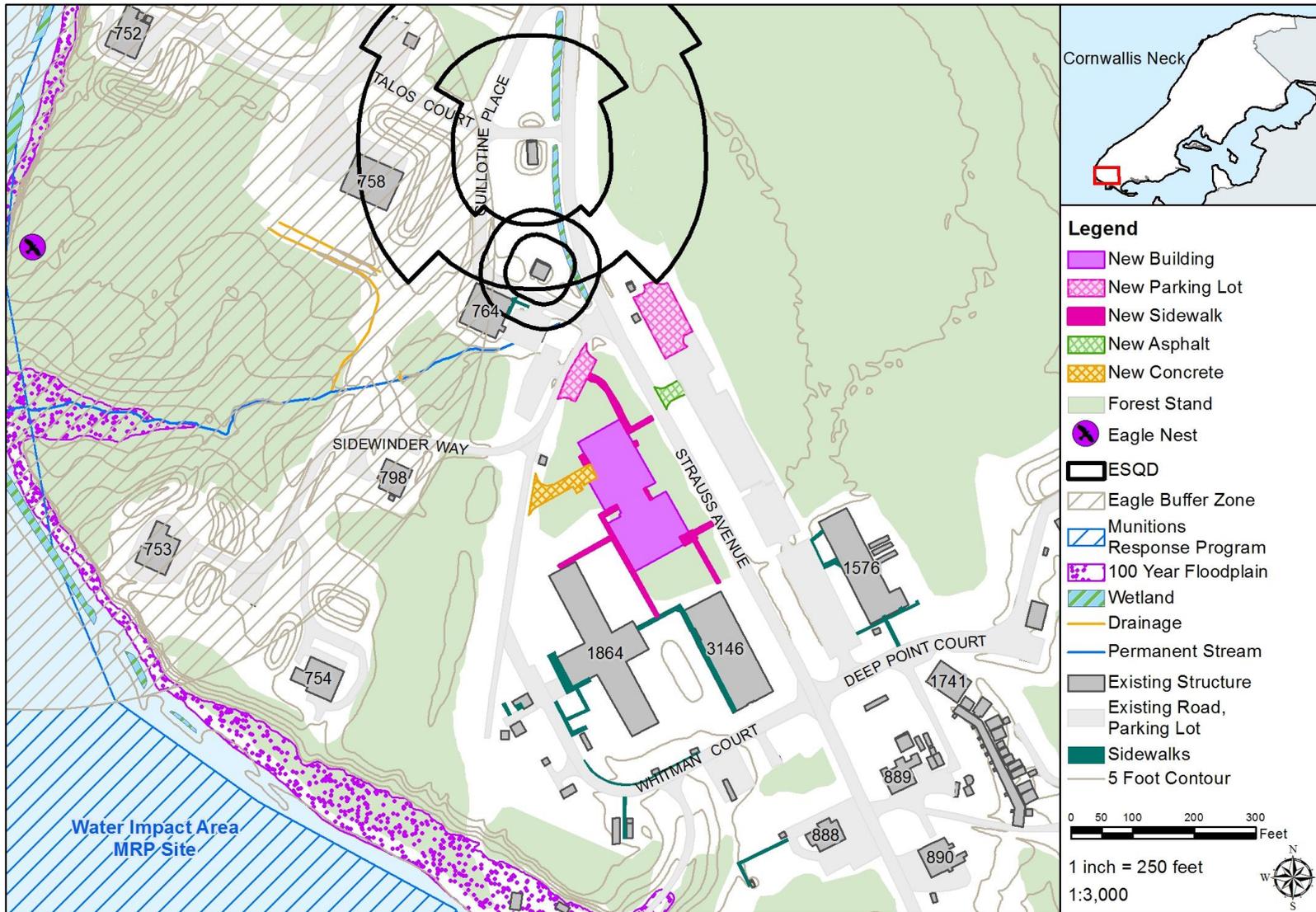
#### 17    **3.1    Cultural and Historic Resources**

##### 18    **3.1.1    Affected Environment**

19    Cultural resources are sites, structures, districts, objects, and documents that are representative of a  
20    specific culture or provide information about a culture (Reinke and Swartz 1999). Historic resources  
21    consist of, but are not limited to, places, structures, and evidence associated with historical people,  
22    events, and traditions.

23    The NHPA was established in 1966 to ensure the protection of cultural and historic resources,  
24    including archeological resources. The NHPA established the Advisory Council on Historic  
25    Preservation and authorized the creation and maintenance of a National Register of Historic Places  
26    (National Register). The National Register is composed of districts, sites, buildings, structures, and  
27    objects that are significant in American history, architecture, archeology, engineering, and culture.

28    Section 106 of the NHPA, which is implemented under 36 CFR 800, requires federal agencies to  
29    consider the effects of undertakings (i.e., actions) on any district, site, building, structure, or object  
30    that is included, or eligible for inclusion, in the National Register, and to afford the Advisory Council  
31    on Historic Preservation a reasonable opportunity to comment on such undertakings. As defined  
32    under 36 CFR 800.5, an “adverse effect” occurs “when an undertaking may alter, directly or indirectly,  
33    any of the characteristics of the historic property that qualify the property for inclusion



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Figure 3-1. Environmental Resources at Site of Proposed Laboratory

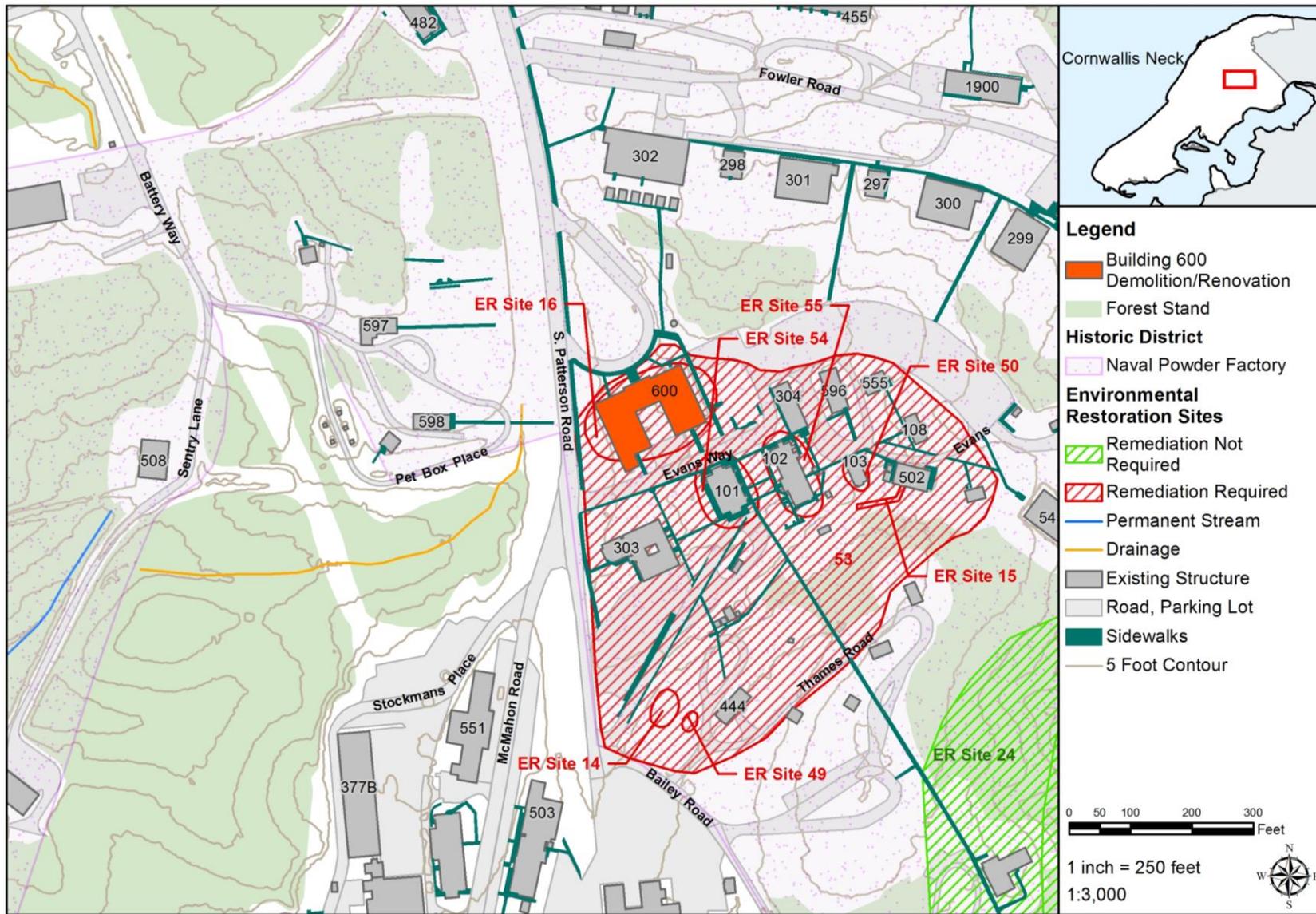


Figure 3-2. Environmental Resources and Environmental Restoration Sites at Building 600

1 in the National Register in a manner that would diminish the integrity of the property's location,  
2 design, setting, materials, workmanship, feeling, or association.”

3 The NHPA also authorized the creation of a State Historic Preservation Office/Officer (SHPO) for each  
4 state. The SHPO participates in statewide historic preservation planning and surveying activities;  
5 nominates properties for listing in the National Register; provides advice, assistance, training, and  
6 public outreach; and participates in Section 106 undertaking reviews. In Maryland, the MHT, a  
7 division of the Maryland Department of Planning, serves as the SHPO.

## 8 **Architectural Resources**

9 Architectural resources are structures, landscaping, or other human construction that have artistic  
10 merit, are particularly representative of their class or period, or represent achievements in  
11 architecture, engineering, technology, design, or scientific research and development (Reinke and  
12 Swartz 1999).

13 The Naval Powder Factory Historic District was found eligible for listing in the National Register in  
14 1996 under Historic Resources at the Naval Ordnance Station, Indian Head, Maryland. The district  
15 was found to be eligible under Criterion A (association with events significant to the broad patterns  
16 of history) for its historical association between 1900 and 1945 as the first major chemical powder  
17 factory operated by the Navy and an important supplier of smokeless powder in World War I and  
18 World War II. It is also eligible under Criterion C (architectural significance) for embodying  
19 distinctive characteristics of a type, period, or method of construction, for its industrial edifices that  
20 were designed to house machinery and processes (Barthold n.d.). The original nomination form  
21 evaluated buildings constructed before 1938. An amendment to the nomination in 1998 evaluated  
22 an additional 61 buildings constructed between 1938 and 1945, adding an additional 22 contributing  
23 and 39 noncontributing resources. Building 600 was identified as a contributing resource in the  
24 historic district as part of the 1998 amendment. Although the building has undergone some changes,  
25 the building retains sufficient integrity for inclusion in the historic district (Goodwin 1998).

26 In 2005, the area of the proposed construction site for the Proposed Action (Preferred Alternative)  
27 was evaluated as part of an intensive-level architectural survey to determine National Register  
28 eligibility. This area was evaluated as part of the Jet-Assisted Takeoff Large Motor Test Area.  
29 Buildings were found not to have the integrity and significance necessary to be eligible for the  
30 National Register and no further work was recommended (Cleven 2005). The remaining buildings in  
31 the area are less than 50 years old and are not eligible for the National Register.

32 The Goddard Power Plant and Steam Lines were found eligible for the National Register in 2011. In  
33 addition to the power plant (Buildings 873, 770, and 1364), this resource includes the network of  
34 steam lines formed by above- and below-ground pipes that provide steam heat and, in places,  
35 compressed air. The Goddard Power Plant and Steam Lines are eligible under Criteria A and C for  
36 their significant association with industrial processes at NSF Indian Head that contributed to the  
37 research, development, and production of weapons ammunition (Louis Berger 2011). They are found  
38 in most areas of NSF Indian Head, including along the east side of Strauss Avenue, across the street  
39 from the proposed construction site of the new research laboratory.

## 40 **Archeological Resources**

41 Archeological resources are material remains of past life or activities (Reinke and Swartz 1999).  
42 Some examples of archeological resources include pottery, basketry, bottles, weapons, tools, rock  
43 paintings, rock carvings, and gravesites.

1 Several Phase I archeological surveys have been performed at NSF Indian Head, covering portions of  
2 Cornwallis Neck and the entirety of Stump Neck. A Phase I survey is an examination conducted by a  
3 qualified professional in sufficient detail to make generalizations about type and distribution of  
4 archeological properties that may be present. Phase I surveys have resulted in the identification of  
5 120 archeological sites (including the location of artifact recovery areas that are treated as sites by  
6 NSF Indian Head) within the boundaries of NSF Indian Head. Six archaeological resources have been  
7 formally determined eligible for the National Register. All are significant under National Register  
8 Criterion D (potential to yield information important in prehistory or history) because of their ability  
9 to provide important information pertaining to prehistory. Approximately 40 sites have not been  
10 evaluated for National Register eligibility. None of the recorded sites are located in the proposed  
11 project area or near the project area (Louis Berger 2012).

### 12 **3.1.2 Environmental Consequences**

#### 13 **Architectural Resources**

##### 14 ***Proposed Action (Preferred Alternative)***

15 The Proposed Action (Preferred Alternative) includes demolition of Building 600, a contributing  
16 resource in the Naval Powder Factory Historic District. Demolition is considered a direct, long-term,  
17 adverse impact (adverse effect under the NHPA) on a historic resource because it would alter the  
18 physical character of an individual historic property and the historic district to which it contributes.  
19 Major impacts would occur on the structure itself because demolition is considered adverse and  
20 irretrievable. Moderate impacts (adverse effect under the NHPA) would occur on the Naval Powder  
21 Factory Historic District because demolition of a contributing resource diminishes the district's  
22 integrity; however, the district will remain eligible for listing on the National Register. The Navy is  
23 coordinating with the MHT to minimize or mitigate these adverse effects, which include amendment  
24 of the existing Disposition of Excess Structures MOA.

25 The construction of the proposed laboratory under the Preferred Alternative would result in a minor,  
26 indirect, long-term, adverse impact (no adverse effect under the NHPA) because the new  
27 construction would be located adjacent to the historic steam lines. This impact would be minor  
28 because the proposed laboratory would be located near other modern buildings and would not  
29 diminish the historic resource's overall integrity.

##### 30 ***Alternative Action***

31 Under the Alternative Action, renovations would extensively alter Building 600, including  
32 replacement of the building's façade and interior floor, walls, and utilities, leaving only the building  
33 frame, completely altering the character of the building, and would result in the complete loss of the  
34 building's historic integrity. Alterations to historic resources that do not follow the Secretary of the  
35 Interior's Standards for the Treatment of Historic Properties would result in a long-term, direct,  
36 adverse impact (adverse effect under the NHPA) on a historic resource because it alters the physical  
37 character of the building itself and the historic district to which it contributes. Moderate impacts  
38 (adverse effect) would occur on the Naval Powder Factory Historic District because renovation of a  
39 contributing resource would diminish the district's integrity; however, the district would remain  
40 eligible for listing on the National Register. Mitigation measures identified for the proposed action  
41 would be implemented for this alternative. The Navy is coordinating with the MHT to minimize or  
42 mitigate adverse effects, including amendment of the existing Disposition of Excess Structures MOA.

1           **No-Action Alternative**

2 Under the No-Action Alternative, minor ongoing repairs to the interior of Building 600 would have  
3 no impact (no effect under the NHPA). Repairs to the exterior of Building 600 exterior would follow  
4 the Secretary of the Interior's Standards for the Treatment of Historic Properties, which stipulate  
5 treatment approaches for following responsible preservation practices. Restoration of historic  
6 properties should preserve distinctive features and materials. New materials should match the old  
7 in composition, design, color, and texture.

8           **Archeological Resources**

9           ***Proposed Action (Preferred Alternative)***

10 The Proposed Action would have no impacts (no effect under the NHPA) on archeological resources.  
11 A Phase I survey was completed in 2008, and no archeological resources were identified at, or near,  
12 the site for the proposed laboratory (Goodwin 2008). Also, predictive models indicate that Building  
13 600 is located in an area that has previously been disturbed and has minimal potential for  
14 archeological resources (Louis Berger 2009). If any unanticipated discoveries were made,  
15 construction and demolition activities would cease and the Cultural Resources Manager would be  
16 notified. An appropriate course of action would be implemented in accordance with the NSF Indian  
17 Head Integrated Cultural Resources Management Plan (ICRMP) and the SHPO would be consulted, if  
18 needed.

19           ***Alternative Action***

20 The Alternative Action would also have no impact (no effect under the NHPA) on archeological  
21 resources. As described above, Building 600 is located in an area that has previously been surveyed  
22 and no archeological resources are present (Goodwin 2008). If any unanticipated discoveries were  
23 made, renovation activities would cease and the Cultural Resources Manager would be notified. An  
24 appropriate course of action would be implemented in accordance with the NSF Indian Head ICRMP  
25 and the SHPO would be consulted, if needed.

26           **No-Action Alternative**

27 The No-Action Alternative would not involve earth disturbance and would have no impact (no effect)  
28 on archeological resources. NSF Indian Head would continue to manage archeological resources on  
29 the installation in accordance with the installation's ICRMP.

30           **3.2 Biological Resources**

31           **3.2.1 Affected Environment**

32 Biological resources include vegetation and wildlife species crucial to maintaining ecological  
33 integrity. A diversity of wildlife species is necessary to maintain a functioning habitat or ecosystem.  
34 The species within a particular ecosystem may interact or compete with one another for food, shelter,  
35 and overall sustenance. Therefore, the loss of a particular species may negatively affect an ecosystem.

36           **Vegetation**

37 NSF Indian Head is composed of a diverse assemblage of vegetation types that make up various  
38 terrestrial and wetland ecological communities. On Cornwallis Neck, the mainside portion of the  
39 installation, there are approximately 2,000 acres (809 hectares) of terrestrial ecological communities  
40 and 213 acres (86 hectares) of wetland communities (Department of the Navy 2014b). Urban  
41 landscape is also a dominant vegetation type on NSF Indian Head and is defined as areas that have  
42 been created, maintained, or modified by human activities. Urban landscape at NSF Indian Head can

1 be generally classified as maintained grasslands and landscaped areas; wildlife food plots; or  
2 successional fields, grasslands, and roadsides.

3 Forest cover types on the mainside primarily include chestnut oak (*Quercus prinus*), loblolly pine  
4 (*Pinus taeda*), mesic hardwoods, mixed upland hardwoods, sweetgum (*Liquidambar*)/yellow poplar  
5 (*Liriodendron tulipifera*), and upland oaks. These forests provide recreational opportunities, wildlife  
6 habitat, and natural buffers for surface waters. Although the forests in the northern portion of  
7 mainside are highly fragmented, several large undeveloped areas in the southern portion contain  
8 larger tracts of contiguous forest.

9 The proposed site for the new laboratory contains hardwood forest primarily consisting of chestnut  
10 oak (Department of the Navy 2014b) in an area that is separated from other forested areas by roads  
11 and development. The area surrounding Building 600 is primarily landscaped, maintained lawn.

## 12 **Wildlife**

13 NSF Indian Head contains a diversity of wildlife species, documented by surveys conducted by the  
14 Navy and Maryland Natural Heritage Program between 1991 through 2007 (Department of the Navy  
15 2014b). Big game species at NSF Indian Head include white-tailed deer (*Odocoileus virginianus*) and  
16 wild turkey (*Meleagris gallopavo*). Small game, migratory game birds, and furbearer species at the  
17 installation include the following: northern bobwhite quail (*Colinus virginianus*), American woodcock  
18 (*Philohela minor*), American crow (*Corvus brachyrhynchos*), mourning dove (*Zenaida macroura*),  
19 eastern cottontail (*Sylvilagus floridanus*), eastern gray squirrel (*Sciurus carolinensis*), raccoon  
20 (*Procyon lotor*), opossum (*Didelphis virginiana*), beaver (*Castor canadensis*), coyote (*Canis latrans*),  
21 red fox (*Vulpes vulpes*), and gray fox (*Urocyon cinereoargenteus*). The NSF Indian Head Integrated  
22 Natural Resources Management Plan (INRMP) (Appendix 3) contains a list of all bird species known  
23 to occur at the installation, including migratory birds. Species that could occur at the proposed  
24 project site would likely include songbirds and other Passeriformes (such as blue jay [*Cyanocitta*  
25 *cristata*], tufted titmouse [*Baeolophus bicolor*], Carolina wren [*Thryothorus ludovicianus*], and  
26 European starling [*Sturnus vulgaris*], among others (Department of the Navy 2014b).

27 Nongame species that have been documented at NSF Indian Head include more than 130 species of  
28 birds, 35 mammal species, 46 fish species, 18 species of amphibians, and 25 species of reptiles  
29 (Department of the Navy 2014b).

30 The proposed site for the new laboratory contains forest, but the area is generally surrounded by  
31 development and human activities. A few small songbirds were observed during the project kickoff  
32 site visit in September 2014. It is likely that the proposed site supports habitat for several of the  
33 wildlife species listed above, but the area is not directly connected to other large forested areas and  
34 is a relatively small area; therefore, the site would not likely support large numbers of wildlife.

## 35 **Migratory Birds**

36 Virtually all birds that may occupy the proposed project site throughout the year are protected under  
37 the MBTA. The MBTA of 1918 is the primary legislation in the United States that was established to  
38 conserve migratory birds. The MBTA prohibits the taking, killing, or possessing of migratory birds  
39 unless permitted by regulation. Migratory birds are viewed as a shared resource, and collaboration  
40 with other nations (Canada, Mexico, Russia, and Japan) is aimed at cooperatively protecting this  
41 resource.

42 In addition, pursuant to EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, a  
43 Memorandum of Understanding between the DOD and the USFWS outlines a collaborative approach

1 to promote the conservation of migratory birds. This Memorandum identifies specific activities that  
2 would contribute to the conservation of migratory birds and their habitats but does not authorize the  
3 take of migratory birds except for an exemption rule allowing incidental take for actions that are  
4 directly related to military readiness (Federal Register Volume 72, Number 39).

5 NSF Indian Head is known to contain a wide variety of migratory birds (Department of the Navy  
6 2014b). NSF Indian Head manages migratory birds under its INRMP, which identifies operational and  
7 conservation measures that avoid, minimize, and mitigate any take of migratory birds (Department  
8 of the Navy 2014b). NSF Indian Head also participates in the DOD Partners in Flight Program, which  
9 seeks to sustain and enhance the military testing, training, and safety mission through proactive,  
10 habitat-based management strategies that maintain healthy landscapes and training lands. DOD  
11 Partners in Flight representatives assist installation natural resources managers in improving the  
12 monitoring and inventory, research and management, and education programs involving birds and  
13 their habitats (Partners in Flight 2015).

14 NSF Indian Head supports the mission and goals of Partners in Flight through various surveys and  
15 conservation efforts on the installation, including the following monitoring and habitat enhancement  
16 activities conducted by the Natural Resources Manager (Department of the Navy 2014b):

- 17 • Monitoring Avian Productivity and Survivorship Stations
- 18 • Avian Nest Box Management
- 19 • Wood Duck Management
- 20 • Forest Interior Dwelling Bird Species Surveys and Management Practices
- 21 • Marsh Bird Surveys
- 22 • Waterfowl Staging and Conservation Areas
- 23 • Colonial Water Bird Nesting Sites

24  
25 Many neotropical migrants are also forest interior dwelling species (FIDS) and require relatively  
26 large contiguous forest areas (greater than 100 acres [404,683 SM]) and forested areas greater than  
27 328 feet (100 meters) from the forest edge within each forest tract to sustain viable breeding  
28 populations. Based on the characteristics of the proposed project parcel, it is unlikely that FIDS utilize  
29 the forested area due to the small size of the forest parcel, human activity in the vicinity and the fact  
30 that this parcel is not contiguous with other parcels.

### 31 **Rare, Threatened, and Endangered Species**

32 Various surveys conducted by the Navy and the Maryland Natural Heritage Program between 1991  
33 and 2013 identified 23 rare vertebrate species (mammals, birds, and fish), 18 invertebrate species,  
34 and 18 rare plant species (Department of the Navy 2014b). Of the 23 identified rare vertebrate  
35 species, 6 are state-listed as threatened, endangered, or in need of conservation—least bittern  
36 (*Ixobrychus exilis*), least tern (*Stemula antillarum*), bobcat (*Lynx rufus*), shortnose sturgeon (*Acipenser*  
37 *brevirostrum*), Atlantic sturgeon (*Acipenser oxyrinchus*), and ironcolor shiner (*Notropis chalybaeus*).  
38 Of the 18 invertebrate species, the frosted elfin (*Callophrys irus*) and treetop emerald (*Somatochlora*  
39 *provocans*) are state-listed or in need of conservation. Of the 18 identified rare plant species, the two-  
40 flowered melic grass (*Melica mutica*), the eastern arborvitae (*Thuja occidentalis*), and the climbing  
41 cucumber (*Melothria pendula*) are state-listed as threatened, endangered, or in need of conservation.  
42 Only two of these species are federally-listed—the shortnose sturgeon and the Atlantic sturgeon,  
43 both of which are federally-listed as endangered (Department of the Navy 2014b). Based on habitat  
44 type that is present, the proposed project site for the new research facility and the area around  
45 Building 600 do not contain any RT&E species.

## 1 **Bald Eagles**

2 Bald eagles have been known to nest at NSF Indian Head since at least 1989. From 1989 to 2014, the  
3 number of nests documented at NSF Indian Head increased from one to the current number of 14,  
4 seven of which were active during the 2014 breeding season. Since 2008, NSF Indian Head has  
5 averaged approximately 12 nests per season with an average of eight nests being active. Also since  
6 2008, NSF Indian Head bald eagle nests have produced an average of approximately 13 young per  
7 nesting season. The majority of the nests are near shoreline areas, however, as suitable shoreline  
8 nesting habitat becomes saturated nests are being constructed inland. They occur predominantly in  
9 the upper canopy of willow oak (*Quercus phellos*), yellow-poplar (*Liriodendron tulipifera*) and  
10 southern red oak (*Quercus falcata*). Effective 8 August 2007, the bald eagle was delisted from the ESA  
11 and placed under the protection of the MBTA and the Bald and Golden Eagle Protection Act, both of  
12 which applied prior to the bald eagle's listing under the ESA.

13 Because of the occurrence of bald eagle mortalities as a result of in-flight collisions with overhead  
14 utility lines or electrocution at NSF Indian Head, the Navy entered into a formal consultation with the  
15 USFWS under Section 7 of the ESA in February 2007, resulting in the issuance of a Biological Opinion  
16 (BO) on 2 August 2007. The BO specified the terms and conditions that the Navy was required to  
17 follow to avoid violation of the ESA. Under the terms of the BO, the Navy was required to continue to  
18 implement the protection measures described in the Raptor Electrocution Prevention Study (REPS)  
19 and the Bald Eagle Management Plan, which were developed by the Navy in 2005 and 2006,  
20 respectively. The REPS recommended modifications to the power line infrastructure (e.g., phase  
21 covers, increased line spacing, perch guards, and flight diverters) to alleviate the risk of electrocution  
22 to bald eagles and other raptors. Per the Bald Eagle Management Plan, the following are examples of  
23 activities that were prohibited without review and approval by the USFWS:

- 24 • activities with the potential to directly result in the take, harm, or harassment of an individual  
25 eagle
- 26 • activities within 750 feet (229 m) of an active nest that were not routinely conducted at the  
27 time the nest was established and would occur during the bald eagle nesting season  
28 (December 15–June 15)
- 29 • permanent changes to the landscape within 750 feet (229 m) of a nest

30 The proposed site for the new laboratory would not occur within 750 feet (229 m) of a bald eagle  
31 nest (Berry, personal communication, 2014). The Navy and USFWS have recently transitioned away  
32 from the BO and instead to a Bald and Golden Eagle Protection Act five-year programmatic  
33 agreement. NSF Indian Head began discussion with the USFWS Region 5 Migratory Bird Office and  
34 the Chesapeake Bay Field Office in 2014 to transition the ESA BO to coverage under the Bald and  
35 Golden Eagle Protection Act. This transition would ensure that activities at NSF Indian Head  
36 remained compliant under the Bald and Golden Eagle Protection Act and a formal permitting process  
37 was established to handle bald eagle mortalities and installation activities that could potentially  
38 disturb nesting pairs. Both parties agreed that a five-year programmatic permit was most  
39 appropriate for NSF Indian Head due to the mission of the installation and the growing population of  
40 bald eagles. The 2010 NSF Indian Head bald eagle management plan was revised to reflect the current  
41 status of the bald eagle at the installation and the current regulatory protection and processes  
42 established for bald eagle conservation and take. This revision was required as part of the Bald and  
43 Golden Eagle Protection Act programmatic permit application process. The receipt of a Bald and  
44 Golden Eagle Protection Act programmatic permit is anticipated in early 2015 (Berry, personal  
45 communication, 2015).

## 1 3.2.2 Environmental Consequences

### 2 Vegetation

#### 3 *Proposed Action (Preferred Alternative)*

4 The Proposed Action would result in permanent, adverse impacts to vegetation at the proposed  
5 project site because approximately 32,962 SF (3,062 SM) of mature, hardwood forest would need to  
6 be removed for construction of the new research laboratory and associated infrastructure. Any  
7 hardwood trees removed in association with the Proposed Action would be managed in accordance  
8 with Maryland Department of Agriculture guidance to prevent the spread of the emerald ash borer.

9 In addition to the forested area that would be lost, the proposed laboratory and associated new  
10 parking would require the removal of approximately 13,652 SF (1,268 SM) of urban landscaping  
11 (grass) and young, woody vegetation (mostly saplings). Areas that are temporarily disturbed under  
12 the Proposed Action but not converted to impervious surface would be replanted with native urban  
13 landscape vegetation in accordance with the installation's INRMP and as identified in the MDE  
14 approved erosion and sediment control plan. Vegetation types could include native trees, shrubs, and  
15 standard seed mixes. Vegetation that may be temporarily disturbed and replanted is primarily  
16 located along Strauss Avenue. Vegetation removal would reduce the area available for stormwater  
17 infiltration; however, this would be mitigated by incorporation of best management practices (BMPs)  
18 to control stormwater, as discussed in Section 3.3, *Water Resources*.

19 Vegetation surrounding Building 600 consists primarily of maintained grass and urban landscaping.  
20 Under the Proposed Action, once the proposed laboratory is constructed and occupied, Building 600  
21 would be demolished and the area would be restored to a vegetated condition in accordance with the  
22 INRMP and MDE approved erosion and sediment control plan. The area would be replanted with  
23 native trees, shrubs, and standard seed mixes which is consistent with the surrounding areas. The  
24 removal of vegetation and replanting of vegetation would result in a minor adverse impact to  
25 vegetation overall.

#### 26 *Alternative Action*

27 The Alternative Action would have negligible impacts on vegetation. Vegetation could experience  
28 temporary, minor adverse impacts during the renovation of Building 600, but any areas that are  
29 disturbed would be revegetated with landscaping in a manner that is consistent with adjacent areas.

#### 30 *No-Action Alternative*

31 Vegetation would not be affected under the No-Action Alternative as there would be no ground  
32 disturbing activities.

### 33 Wildlife

#### 34 *Proposed Action (Preferred Alternative)*

35 The Proposed Action would result in minor adverse impacts on wildlife during the construction  
36 phase. The removal of hardwood forest for construction of the new research facility would remove  
37 potential wildlife habitat for species such as small game, songbirds, and some invertebrates found on  
38 NSF Indian Head, as described in Section 3.2.1, *Wildlife*. Any species currently residing in this location  
39 would be permanently displaced but would likely relocate to other areas. Some immobile species  
40 such as invertebrates or juveniles may be lost due to direct mortality during construction, but no  
41 unique species are known to inhabit the parcel. The surrounding areas are developed and experience  
42 human activity, so the project area likely does not contain substantial densities of wildlife and  
43 impacts would be minor overall to wildlife populations on the installation. The Proposed Action is

1 not expected to have any noticeable impacts on wildlife movement on the installation because the  
2 proposed site for the new laboratory is already fragmented and not directly connected to larger  
3 forested areas. There would also be permanent, minor beneficial impacts on wildlife from  
4 revegetating the area after Building 600 is demolished.

5 The Proposed Action would not result in any noticeable impacts on migratory bird populations or  
6 FIDS on the installation. Overall, the loss of forest habitat would be minor and any migratory birds or  
7 FIDS utilizing the parcel would likely relocate to other areas. Given the characteristics of the parcel  
8 and the surrounding areas that experience human activities and disturbances, the area likely does  
9 not support large numbers of migratory birds or FIDS.

10 Wildlife in the vicinity of Building 600 may be temporarily displaced due to noise from demolition  
11 activities, but the impacts would be temporary, and noise levels would be minor. Due to the  
12 developed environment near Building 600, it is unlikely that many wildlife species occupy the area  
13 adjacent to Building 600.

#### 14 ***Alternative Action***

15 The Alternative Action would have negligible impacts on wildlife. Wildlife in the vicinity of Building  
16 600 may be temporarily displaced due to noise from renovation activities, but the impacts would be  
17 temporary, and noise levels would be minor. Because of the developed environment near Building  
18 600, it is unlikely that many wildlife species occupy the area adjacent to Building 600.

#### 19 ***No-Action Alternative***

20 Under the No-Action Alternative, only minor repairs and maintenance would be conducted on  
21 Building 600 and there would be no impact on wildlife.

#### 22 **Rare, Threatened, and Endangered Species**

##### 23 ***Proposed Action (Preferred Alternative)***

24 No federally listed RT&E species have been observed in the area that would be affected by the  
25 Proposed Action (NAVFACWASH 2012) and based upon a review of available information and habitat  
26 types present at the proposed project site, there would be no impacts on any RT&E species. NSF  
27 Indian Head coordinated with the USFWS and MDNR to confirm that RT&E species would not be  
28 affected. Response from the MDNR on 21 January 2015 indicated that there are no state or federal  
29 records of RT&E species occurring within the boundaries of the project site as delineated. Response  
30 from the USFWS on 11 February 2015 also indicated that with the exception for occasional transient  
31 individuals, no federally proposed or listed endangered or threatened species are known to exist  
32 within the project area. As a result, RT&E species would not be affected under the Proposed Action  
33 (see Appendix A).

34 The Proposed Action would not affect bald eagles and the Navy would ensure compliance with the  
35 five-year programmatic agreement between the Navy and the USFWS.

##### 36 ***Alternative Action***

37 RT&E species would not be affected under the Alternative Action. Renovation of Building 600 would  
38 not affect federally-listed RT&E species or bald eagles.

1           **No-Action Alternative**

2 RT&E species would not be affected under the No-Action Alternative as no construction activities  
3 would occur.

4           **3.3 Water Resources**

5           **3.3.1 Affected Environment**

6           **Surface Waters**

7 NSF Indian Head has more than 55 linear miles (89 km) of surface water bodies. This includes 32  
8 miles (51 km) of streams, 26 miles (42 km) of which are characterized as annually flowing,  
9 freshwater, and non-tidal. Constructed drainage systems, waterways with intermittent flows, and  
10 estuarine waters compose the remaining 23 miles (37 km) of surface water (Department of the Navy  
11 2008). Major surface waters surrounding Cornwallis Neck include the Potomac River and the  
12 Mattawoman Creek. These water bodies are tributaries to the Chesapeake Bay and are classified as  
13 Use I waters, which are considered to have certain properties that can support contact recreational  
14 use and limited aquatic life.

15 The CWA protects surface water quality, preserves wetlands, and establishes the National Pollutant  
16 Discharge Elimination System permit program, authorizing the U.S. Environmental Protection  
17 Agency (USEPA) to limit the discharge of pollutants into navigable waters. The Navy discharges  
18 stormwater, process wastewater, and non-contact cooling water from NSF Indian Head into the  
19 Potomac River and the Mattawoman Creek via outfalls regulated in three separate permits issued by  
20 MDE.

21           **Groundwater**

22 Groundwater is subsurface water found beneath the water table in soils and geologic formations.  
23 Groundwater is the most prevalent source of available freshwater that supports potable, agricultural,  
24 and industrial uses, especially in areas that lack access to river water resources.

25 NSF Indian Head uses groundwater for domestic and industrial purposes, as well as for fire  
26 protection at Stump Neck. The groundwater system at NSF Indian Head is often referred to as the  
27 “potable water” system because it supplies water for domestic purposes. Groundwater is pumped  
28 from four wells at Cornwallis Neck and two wells at Stump Neck. The Navy has multiple MDE-issued  
29 Groundwater Appropriation Permits that specify withdrawal allowances for each well.

30           **Wetlands**

31 The U.S. Army Corps of Engineers and USEPA define jurisdictional wetlands as areas that are  
32 inundated or saturated by surface water or groundwater frequently and long enough to support, and  
33 that under normal circumstances do support, a prevalence of vegetation typically adapted for life in  
34 saturated soil conditions.

35 EO 11990, *Protection of Wetlands*, directs federal agencies to take action to minimize the destruction,  
36 loss, or degradation of wetlands on their properties and mandates review of proposed actions on  
37 wetlands through procedures established by NEPA. It requires that federal agencies establish and  
38 implement procedures to minimize development in wetlands. In support of the Navy’s goal of “no net  
39 loss of wetlands,” all Navy construction and operational actions must avoid adverse impacts on, or  
40 destruction of, wetlands. If this is impossible, then designs shall be made to minimize wetland  
41 degradation and shall include mitigation to replace affected wetlands in another location.

1 The proposed site for the new laboratory and the current site of Building 600 are not located within  
2 100 feet (30 m) of any tidal wetlands or within 25 feet (8 m) of any non-tidal wetlands, which are  
3 buffers set under the Maryland Coastal Zone Management Program (CZMP). In 2008, a wetlands  
4 survey was performed for the area surrounding the proposed laboratory. This survey identified four  
5 areas with poor drainage northwest of Building 1864 (located adjacent to the proposed site for the  
6 new laboratory); however, none of these areas displayed wetland characteristics (Bolton and  
7 Associates 2008).

## 8 **Stormwater Management**

9 Stormwater is generated when precipitation runs off from land and impervious areas, such as paved  
10 streets, parking lots, and building rooftops. Stormwater runoff can collect pollutants, such as oil and  
11 grease, chemicals, nutrients, metals, and bacteria, as it travels across land. It also causes soil erosion  
12 when traveling at velocities sufficient to carry sediment particles. Stormwater is typically managed  
13 using structural or nonstructural BMPs. Structural BMPs include control systems, such as infiltration  
14 devices, ponds, filters, and constructed wetlands; nonstructural BMPs include LID practices and  
15 management measures, such as bioretention areas, cisterns, and vegetated swales (USEPA 2008).

16 The Maryland Stormwater Management Act of 2007 requires the implementation of environmental  
17 site design to the maximum extent practicable to mimic predevelopment conditions and ensure that  
18 structural practices are used only where absolutely necessary to manage stormwater. Environmental  
19 site design techniques include LID practices, such as vegetated roofs, permeable pavers and  
20 pavement, bioretention, and vegetated swales. The Maryland Stormwater Management Guidelines,  
21 published in April 2010, also supplemented the 2000 Maryland Stormwater Design Manual.

22 Stormwater management requirements are also driven by the Navy LID Policy (2007) and EISA,  
23 Section 438. The Navy LID Policy sets a goal of no net increase in stormwater volumes or sediment  
24 and nutrient loading from major renovation and construction projects, and directs that LID be  
25 considered in the design for all projects that have a stormwater management element. The EISA  
26 requires that any development or redevelopment project involving a federal facility with a footprint  
27 that exceeds 5,000 SF (465 SM) shall maintain or restore, to the maximum extent technically feasible,  
28 the predevelopment hydrology of the property with regard to the temperature, rate, volume, and  
29 duration of flow.

## 30 **Coastal Zone**

31 The CZMA of 1972 (11 USC 1451 et seq.), as amended through the Coastal Zone Management Act of  
32 1996, requires the Navy to review its impacts on coastal resources and for consistency with the  
33 Maryland CZMP. This program also takes into account existing state laws and authorities, such as the  
34 Chesapeake Bay Critical Area Program, the Tidal Wetlands Act of 1970, and the Non-Tidal Wetlands  
35 Protection Act of 1989 as well as the state's authority under Section 401 of the CWA of 1977.  
36 Maryland's CZMP is a network of state laws and policies designed to preserve, protect, develop and,  
37 where possible, restore coastal resources of the Chesapeake Bay, coastal bays, and the Atlantic Ocean,  
38 as well as the towns, cities, and counties that have jurisdiction over the coastline.

39 The Maryland coastal zone is composed of the land, water and subaqueous land between the  
40 territorial limits of Maryland in the Chesapeake Bay, Atlantic Coastal Bays and the Atlantic Ocean, as  
41 well as the towns, cities and counties that contain and help govern the thousands of miles of Maryland  
42 shoreline. The Maryland coastal zone extends from three miles out in the Atlantic Ocean to the inland  
43 boundaries of the 16 counties and Baltimore City that border the Atlantic Ocean, Chesapeake Bay and  
44 the Potomac River to the District of Columbia. NSF Indian Head is located in Charles County, one of  
45 the 16 coastal counties.

1 On 8 May 2013, the State of Maryland and DOD entered into a Memorandum of Understanding that  
2 serves as a partnership to protect and enhance Maryland's coastal resources. The Memorandum  
3 outlines how DOD facilities and projects will meet the federal law requirements of the CZMA to  
4 ensure that their actions affecting these resources are consistent with state policies. The  
5 Memorandum also acknowledges a "*de minimis*" list of federal activities that would be expected to  
6 have minor or negligible impacts on the coastal zone and would not require DOD to submit a federal  
7 consistency determination. An approved list of environmentally beneficial activities would also not  
8 require a federal consistency determination (MDNR 2015). The Proposed Action does not meet the  
9 criteria for a "*de minimis*" or environmentally beneficial activity, and therefore a federal consistency  
10 determination is required (see Appendix A).

### 11 ***Maryland's Enforceable Coastal Policies***

12 Under the CZMP, projects are reviewed to determine consistency with Maryland's enforceable  
13 coastal policies that address the following:

#### 14 General Policies:

- 15 • Core Policies
  - 16 • Water Quality
  - 17 • Flood Hazards
- 18

#### 19 Coastal Resources:

- 20 • The Chesapeake and Atlantic Coastal Bays Critical Area
  - 21 • Tidal Wetlands
  - 22 • Non-Tidal Wetlands
  - 23 • Forests
  - 24 • Historical and Archaeological Sites
  - 25 • Living Aquatic Resources
- 26

#### 27 Coastal Uses

- 28 • Mineral Extraction
  - 29 • Electrical Generation and Transmission
  - 30 • Tidal Shore Erosion Control
  - 31 • Oil and Natural Gas Facilities
  - 32 • Dredging and Disposal of Dredged Material
  - 33 • Navigation
  - 34 • Transportation
  - 35 • Agriculture
  - 36 • Development
  - 37 • Sewage Treatment
- 38

39 The purpose of these rules is to establish generally applicable objectives and policies to be followed  
40 in the public and private use of land and water areas within the coastal area of Maryland.

### 1 **3.3.2 Environmental Consequences**

#### 2 **Surface Waters**

##### 3 ***Proposed Action (Preferred Alternative)***

4 The Proposed Action would have negligible, adverse impacts on surface waters at NSF Indian Head.  
5 The proposed laboratory would be located approximately 600 feet (183 m) from the Potomac River  
6 shoreline. Sediment and erosion control measures would be implemented to ensure that  
7 construction activities would not lead to sediment transport into surface waters. A sediment and  
8 erosion control plan would be developed and submitted to the MDE for approval prior to any  
9 construction activities. After construction and demolition, revegetating the area once Building 600 is  
10 demolished would result in beneficial impacts on surface waters by capturing potential stormwater  
11 runoff. Additionally, NSF Indian may be required to replant vegetation on another area of the  
12 installation to mitigate for tree removal due to construction of the proposed research facility, pending  
13 the federal consistency review determination process.

14 The Proposed Action may result in a minor net reduction in the generation of sanitary wastewater  
15 due to the installation of low-flow fixtures in the proposed laboratory. Current operations in Building  
16 600 involve disposal of small amounts of soapy wastewater with trace amounts of chemical  
17 contaminants into the sanitary wastewater system, and do not require an Industrial Discharge  
18 Certificate from the NSF Indian Head Environmental Office (Jouet 2012a). The Proposed Action  
19 would relocate these activities to the proposed laboratory and would not create new industrial  
20 wastewater discharges; however a new Industrial Discharge Certificate would be required in  
21 compliance with current regulations (Mood, personal communication 2014).

22 Decontamination of Building 600 may be required due to possible contamination from mercury and  
23 energetics materials. Prior to demolition, decontamination activities could involve a high-pressure,  
24 hot-water power wash. Wastewater from decontamination would be contained and tested for  
25 hazardous constituents prior to disposal. Based on the results of the analysis, the Navy would  
26 determine whether the sewer system could accept and adequately break down the contaminants in  
27 the wastewater. If the level of contamination were too high for the sewer system to accept, the  
28 wastewater would be conveyed offsite for disposal in accordance with all applicable regulations. As  
29 a result, demolition and decontamination of Building 600 would not affect surface water.

##### 30 ***Alternative Action***

31 The Alternative Action would result in no impact or only negligible impacts on surface water from  
32 stormwater runoff, as there would be minimal ground disturbance associated with renovation.  
33 Sediment and erosion control measures would be implemented to ensure that renovation activities  
34 would not lead to sediment transport into surface waters. A sediment and erosion control plan would  
35 be developed and submitted to the MDE for approval prior to any renovation activities.

36 As with the Proposed Action, the Alternative Action would include decontamination of Building 600  
37 and would generate temporary wastewater discharges. Wastewater discharges would be disposed  
38 in accordance with all applicable regulations; therefore, renovation and decontamination of Building  
39 600 would not affect surface water.

##### 40 ***No-Action Alternative***

41 Surface water would not be affected under the No-Action Alternative because no construction or  
42 renovation activities would occur. Minor ongoing repairs to Building 600 would not generate any  
43 ground disturbing activities. Wastewater discharge associated with Building 600 would continue to  
44 be disposed in accordance with all applicable regulations.

## 1 **Groundwater**

### 2 ***Proposed Action (Preferred Alternative)***

3 The Proposed Action would potentially result in a net-decrease in groundwater consumption due to  
4 equipment upgrades (such as water-efficient fixtures and features) and the elimination of leaks.

5 Building 600 is located in an area (referred to as the Lab Area) that includes mercury contamination  
6 and several Environmental Restoration (ER) sites (see Section 3.7, Health and Safety). The Final  
7 Record of Decision for ER sites in this area states that shallow groundwater was not encountered  
8 during the remedial investigation (shallow groundwater was not encountered through borings  
9 advanced to a maximum of 40 feet below ground surface); therefore, groundwater was not identified  
10 as a pathway for transport or exposure of potential contaminants and, as a result, a remedial action  
11 is not warranted for groundwater (NSASP 2011). Contractors performing the demolition of Building  
12 600 would adhere to handling and disposal requirements consistent with remedial actions identified  
13 in the Record of Decision and in accordance with required regulations. These measures include  
14 excavation, offsite disposal, and site restoration for surface soil at the site of Building 600, and  
15 institutional controls for subsurface soils and sewer pipes (NSASP 2011). Institutional controls  
16 include alerting construction workers that some potential exists for encountering mercury in the  
17 drain lines of Building 600. Therefore, the demolition of Building 600 would not result in the leaching  
18 of contaminants into groundwater.

19 Construction of the proposed laboratory would not affect groundwater at NSF Indian Head. No areas  
20 of suspected groundwater contamination are present at the site of the proposed laboratory  
21 (NAVFACWASH 2012). The construction of the new building and associated parking and sidewalks  
22 would create 28,380 SF (2,637 SM) of new impervious and semi-pervious surface. However, the  
23 demolition and revegetation of the Building 600 site would remove 42,304 SF (3,930.2 SM) of  
24 impervious surface, resulting in a net reduction of 13,924 SF (1,293 SM) of impervious area at NSF  
25 Indian Head. The Proposed Action would not adversely affect groundwater recharge at the  
26 installation.

### 27 ***Alternative Action***

28 The Alternative Action would have the same effect on groundwater as would the Proposed Action  
29 relative to Building 600. Renovation activities would likely not require substantial ground-disturbing  
30 activities, but if warranted, contractors performing the renovation of Building 600 would adhere to  
31 handling and disposal requirements that are consistent with remedial actions identified in the  
32 Record of Decision for the Lab Area, and in accordance with required regulations. These measures  
33 include excavation, offsite disposal, and site restoration for surface soil at the site of Building 600,  
34 and institutional controls for subsurface soils and sewer pipes (NSASP 2011). Therefore, the  
35 renovation of Building 600 would not result in the leaching of contaminants into groundwater.

### 36 ***No-Action Alternative***

37 Under the No-Action Alternative, potable water would continue to be lost through leaks, resulting in  
38 continued inefficient use of groundwater. Minor ongoing renovations to Building 600 would not  
39 result in any potential contamination of groundwater.

## 40 **Wetlands**

### 41 ***Proposed Action (Preferred Alternative)***

42 The Proposed Action would have no impact on wetlands at NSF Indian Head. The areas that would  
43 be affected by the Proposed Action are not located within 100 feet (30 m) of any tidal wetlands or

1 streams or within 25 feet (8 m) of any non-tidal wetlands or streams. In 2008, a wetlands survey was  
2 performed for the area surrounding the proposed laboratory. This survey identified four areas of  
3 concern with poor drainage northwest of Building 1864; however, none of these areas displayed  
4 wetland characteristics (Bolton and Associates 2008). During construction of the proposed  
5 laboratory, NSF Indian Head would implement BMPs to control stormwater runoff, which would,  
6 therefore, control siltation from the construction site.

#### 7 ***Alternative Action***

8 The Alternative Action would have no impact on wetlands because no wetlands are located in the  
9 vicinity of Building 600.

#### 10 ***No-Action Alternative***

11 The No-Action Alternative would have no impact on wetlands.

### 12 **Stormwater Management**

#### 13 ***Proposed Action (Preferred Alternative)***

14 The Proposed Action would result in overall long-term, beneficial impacts on stormwater. Short-  
15 term, moderate, adverse impacts on stormwater would be expected in association with new  
16 construction and demolition activities. Removal of vegetation for site preparation for the  
17 construction of a proposed laboratory would increase overland flow, resulting in erosive soil loss and  
18 sedimentation of stormwater. Adherence to National Pollutant Discharge Elimination System permit  
19 conditions and the use of stormwater BMPs would limit stormwater discharge from the site during  
20 and after construction. The demolition of Building 600 would also result in short-term loss of ground  
21 cover at the site until revegetation of the site is complete.

22 Overall, the design, coupled with BMPs and adherence to local, state, and federal permitting  
23 requirements, precludes significant effects related to stormwater. Per Navy policy and EISA  
24 regulations, the Proposed Action would incorporate LID measures to the maximum extent technically  
25 feasible with the goal of 1) no net increase in stormwater volumes, or sediment and nutrient loading;  
26 2) hydrology that matches pre-development conditions; and 3) no contribution to sediment and  
27 nutrient loading within the receiving watershed. These measures may include a combination of  
28 bioretention basins, grassed and vegetated swales, porous concrete, and other measures. Stormwater  
29 detention/retention ponds would not be used.

30 In addition, the Proposed Action would correct the poorly drained areas northwest of Building 1864.  
31 Stormwater would flow either northwest or southwest from the proposed laboratory site, depending  
32 on grading and the specific location of the stormwater management feature and associated discharge  
33 point(s).

34 Despite the presence of clayey soils at the site, EISA, Navy, and Maryland stormwater requirements  
35 would still apply. The contractor would work with the NSF Indian Head Environmental Office to  
36 develop an effective stormwater management approach that meets these requirements. The  
37 approach would include selection of the final integrated management practices, optimal  
38 configuration, and design narrative and supporting calculations that reinforce the design rationale  
39 and demonstrate that federal, state, and Navy stormwater management requirements would be met.  
40 The stormwater management plan would be submitted to MDE for approval.

41 Construction of the proposed laboratory, parking lot, and sidewalks would remove vegetation and  
42 result in a net increase of approximately 28,380 SF (2,637 SM) of impervious surfaces in the

1 subwatersheds around Building 1864. This does not include approximately 9,800 SF (910 SM) of  
2 expanded parking areas that would utilize pervious paving methods. The Proposed Action would also  
3 restore the Building 600 site to green space, removing 42,304 SF (3,930 SM) of impervious surface.  
4 This would result in reduced generation of stormwater runoff within that subwatershed, and an  
5 approximate net reduction of 13,924 SF (1,293 SM) of impervious surface area across the installation.  
6 In addition, the Navy may be required to replant another area of the installation to compensate for  
7 trees lost during the construction of the proposed laboratory, which would also result in beneficial  
8 impacts on stormwater management.

#### 9 ***Alternative Action***

10 The Alternative Action would produce no new impervious surfaces and would have a minimal effect  
11 on stormwater due to renovation activities.

12 The Alternative Action would disturb less than 5,000 SF (465 SM) and would, therefore, not be  
13 subject to Maryland or EISA stormwater requirements. However, the cost of the Alternative Action  
14 would likely exceed the Navy's threshold triggering the applicability of sustainability requirements,  
15 including the need to obtain LEED certification. The LEED certification process may include  
16 retrofitting of Building 600 with LID/stormwater management measures.

#### 17 ***No-Action Alternative***

18 No impacts from stormwater runoff would occur under the No-Action Alternative. The No-Action  
19 Alternative would produce no new impervious surfaces from minor ongoing renovations to Building  
20 600.

### 21 **Coastal Zone**

#### 22 ***Proposed Action (Preferred Alternative)***

23 The Proposed Action would be located in Charles County, which is one of the coastal counties and  
24 jurisdictions that are part of Maryland's CZMP. Construction of the proposed laboratory would  
25 require earth disturbance and tree clearing, which has the potential to result in an increase in  
26 stormwater runoff. Demolition of Building 600 would also result in some temporary ground  
27 disturbance, but impacts from stormwater runoff would be negligible. The project would include  
28 measures to manage stormwater, which addresses requirements related to runoff in the program  
29 (see Stormwater Management in Section 3.3.2). The Proposed Action would not affect wetlands  
30 because none are located within or directly adjacent to the proposed project site. Although Building  
31 600 is a historic resource, the Navy has consulted with the MHT to mitigate adverse impacts (adverse  
32 effects under the NHPA) and for consistency with Maryland's CZMP.

33 Proposed DOD activities are reviewed by agencies for consistency with the CZMP and other  
34 regulatory programs as well as the 2013 Memorandum of Understanding. Pursuant to Section 307 of  
35 the CZMA, 16 USC Section 1456, as amended, and its implementing regulations at 15 CFR Part 930,  
36 the Navy submitted a Federal Consistency Determination for evaluation to the MDE on 19 December  
37 2014. No responses were received from the MDE within the 60-day review period. As a result, the  
38 Navy assumed concurrence with its Federal Consistency Determination for activities associated with  
39 the demolition of the existing RDT&E laboratory and construction of the new energetics laboratory.  
40 The Navy will ensure that the project is constructed and operated in accordance with all applicable  
41 state, federal, and local laws and regulations and in accordance with the 2013 Memorandum of  
42 Understanding. This correspondence is included in Appendix A.

### 1 **Alternative Action**

2 The Alternative Action would result in minimal ground disturbance and therefore would not  
3 appreciably affect the coastal zone. Mitigation measures identified for the Proposed Action would  
4 also be implemented for this alternative with regard to Building 600.

### 5 **No-Action Alternative**

6 The coastal zone would not be affected under the No-Action Alternative. NSF Indian Head would  
7 continue to manage coastal resources on the installation in accordance with Maryland's CZMP.

## 8 **3.4 Geology, Topography and Soils**

### 9 **3.4.1 Affected Environment**

10 The geology of an area encompasses characteristic rocks, sediments, and land features as well as the  
11 forces affecting them. These geologic features provide the parent material for overlying soils through  
12 weathering and supplying minerals and nutrients. Assessing the geologic and soil resources in an  
13 area can provide insight about environmental impacts of potential actions on that area and its  
14 surroundings. Unfavorable geologic and soil characteristics could make the development of an area  
15 impractical. In addition, soil erosion can negatively affect surrounding waterways and wetlands.

16 NSF Indian Head is located in the Potomac River Basin in the Coastal Plain physiographic province,  
17 which was formed more than 500 million years ago. The geology of NSF Indian Head consists mostly  
18 of gravel, sand, silt, and clay deposits from the Appalachian and Piedmont Region (west and north of  
19 NSF Indian Head) (Chesapeake Division NAVFAC 1990).

20 Topography indicates the relative position and elevation of natural and human-made features within  
21 an area. Changes to the topography of an area can affect surface and subsurface water pathways,  
22 which in turn affect stormwater runoff by increasing water volume, resulting in increased  
23 sedimentation and, ultimately, effects on water quality in nearby waterways and wetlands.

24 Cornwallis Neck has very low elevation profiles typical of the Coastal Plain physiographic province.  
25 According to the U.S. Navy's Shore Facilities Planning Manual, sloping terrain at NSF Indian Head can  
26 be classified into three areas:

- 27 • gentle (0–5 percent)
- 28 • rolling (5–15 percent)
- 29 • steep (greater than 15 percent)

30 Past operations at the installation affected soil quality through the improper disposal of industrial  
31 waste and wastewater. These practices resulted in a number of potentially contaminated sites called  
32 Environmental Restoration (or ER) sites. An Initial Assessment Study performed in 1983 and a  
33 supplemental preliminary assessment report prepared in 1992 identified a total of 46 potential ER  
34 sites (Naval Energy and Environmental Support Activity 1983; 1992). Further site investigations  
35 have since identified additional ER sites at NSF Indian Head. The Navy is involved in ongoing efforts  
36 to remediate these sites.

37 Building 600 falls within ER Site 16 (Laboratory Chemical Disposal) and ER Site 53 (Mercury  
38 Contamination of Sewage System) (see Figure 3-2 and Section 3.7, Health and Safety). ER Site 16  
39 contains various laboratory chemicals—acids, amines, cyanide compounds, metals, and chlorinated

1 and nonchlorinated solvents—that were previously disposed of in the Building 600 wastewater  
2 system. ER Site 53 contains mercury contamination that originated from Building 102 and may be  
3 present within the storm and sanitary sewer pipes around that building and Building 600 (NAVFAC  
4 2004). According to input from the NSF Indian Head Environmental Office, an ethylene glycol spill  
5 occurred on the eastern side of Building 600. Soil testing in this area indicated that the ethylene glycol  
6 contamination level was below the threshold that would present human health concerns (Carros  
7 2012). No ER sites are located in the vicinity of the proposed site for the new laboratory.

### 8 **3.4.2 Environmental Consequences**

#### 9 **Proposed Action (Preferred Alternative)**

10 The Proposed Action would have negligible, adverse effects on topography at NSF Indian Head. The  
11 Proposed Action would disturb soils through construction and demolition activities in both  
12 undisturbed and developed sites. To minimize the alteration or loss of topsoil associated with  
13 activities at these locations, the Navy would implement a sediment and erosion control plan in  
14 accordance with MDE regulations.

15 Construction of the proposed laboratory and associated parking area would require minimal grading.  
16 Existing topography at the site of the proposed laboratory is relatively gentle (0–2 percent); however,  
17 the nearby shoreline includes steep slopes (greater than 15 percent). The soil at the site of the  
18 proposed laboratory is primarily Piccowaxen loam, which is very deep, mostly flat, and somewhat  
19 poorly drained. Piccowaxen loam is present on alluvial terraces of the coastal plain and is highly  
20 erodible. Despite the presence of poorly drained, clayey soils, applicable state and federal  
21 stormwater regulations would still apply (see Section 3.3.2, Stormwater Management). The NSF  
22 Indian Head Environmental Office would work with the design contractor to determine the most  
23 effective ways to implement LID measures in soils with low infiltration rates, potentially including  
24 soil amendments.

25 The condition of soil at Building 600 would result in certain handling and disposal requirements in  
26 accordance with local, state, and federal regulations and the Final Record of Decision for the Lab Area  
27 (NSASP 2011). Contractors performing the demolition of Building 600 would adhere to handling and  
28 disposal requirements that are consistent with remedial actions identified in the Record of Decision  
29 and in accordance with required regulations. These measures include excavation, offsite disposal,  
30 and site restoration for surface soil at the site of Building 600, and institutional controls for  
31 subsurface soils and sewer pipes (NSASP 2011). Contractors would bring in uncontaminated backfill  
32 from offsite or would use soil from the installation’s soil deposition area to fill the excavated area.  
33 Following the demolition of Building 600, the site would be filled to match the surrounding  
34 topography.

#### 35 **Alternative Action**

36 The Alternative Action would have minimal-to-no effect on geology, topography, and soils. The ER  
37 site concerns for Building 600 described above would also apply to the Alternative Action if  
38 renovation activities involve earthwork.

#### 39 **No-Action Alternative**

40 Geology, topography, or soils would not be affected under the No-Action Alternative. NSF Indian Head  
41 would continue to manage geologic resources on the installation in accordance with the installation’s  
42 INRMP.

## 1 3.5 Air Quality

2 Air quality can be defined as the concentrations of pollutants determined by the USEPA to be of  
3 concern to the health and welfare of the general public and the environment. Poor ambient air quality  
4 typically results from emissions of fossil fuel combustion, usually from vehicles (mobile sources) or  
5 production facilities (stationary sources). Emissions from fossil fuel combustion also contain  
6 greenhouse gases (GHGs), which are very likely to be a contributor to global climate change (IPCC  
7 2007).

### 8 3.5.1 Affected Environment

#### 9 Ambient Air Quality

10 The CAA designated the USEPA as the authority to set National Ambient Air Quality Standards  
11 (NAAQS) for air pollutants considered to be harmful to public health and the environment (40 CFR  
12 Part 50). The NAAQS are benchmark levels for ambient air pollutant concentrations above which  
13 human health and public welfare may be adversely affected. The air pollutants regulated under the  
14 NAAQS, commonly referred to as “criteria pollutants,” include ozone (O<sub>3</sub>), particulate matter (PM),  
15 carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), and lead (Pb) (USEPA 2010). PM  
16 is further divided into coarse (PM<sub>10</sub>) and fine (PM<sub>2.5</sub>) particulate matter.

17 Federal regulations designate Air Quality Control Regions (AQCRs) in violation of the NAAQS as  
18 nonattainment areas. According to the severity of the pollution problem, nonattainment areas can be  
19 categorized as marginal, moderate, serious, severe, or extreme. The USEPA designated the  
20 Metropolitan Washington Region, AQCR 47, which includes Charles County, as in marginal  
21 nonattainment for O<sub>3</sub> and in moderate nonattainment for the PM<sub>2.5</sub>. In addition, AQCR 47 is in the O<sub>3</sub>  
22 transport region, which is the northeastern section of the United States, where O<sub>3</sub> is transported by  
23 air currents into regions from other areas of the United States. Charles County is an attainment area  
24 for CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, and Pb (40 CFR 81.321).

25 To regulate the emission levels resulting from a project, federal actions located in nonattainment or  
26 maintenance areas are required to demonstrate compliance with the general conformity guidelines  
27 established in 40 CFR Part 93, *Determining Conformity of Federal Actions to State or Federal*  
28 *Implementation Plans* (the Rule). Section 93.153 of the Rule sets the applicability requirements for  
29 projects subject to the Rule through the establishment of *de minimis* levels for annual criteria  
30 pollutant emissions. These *de minimis* levels are set according to criteria pollutant nonattainment  
31 area designations. For projects below the *de minimis* levels, a full conformity determination is not  
32 required. Those at, or above, the levels are required to perform a conformity analysis as established  
33 in the Rule. The *de minimis* levels apply to emissions that can occur during the construction or  
34 operation phases of the action.

35 Because Charles County is located in a nonattainment area for PM<sub>2.5</sub> and O<sub>3</sub>, actions at NSF Indian  
36 Head must be reviewed to determine whether the associated emissions of these pollutants or their  
37 precursors<sup>1</sup> would exceed *de minimis* levels.

38 The *de minimis* values for ozone precursors in a marginal ozone nonattainment area within the ozone  
39 transport region are 100 tons per year for nitrogen oxides (NO<sub>x</sub>) and 50 tons per year for volatile  
40 organic compounds (VOCs). The *de minimis* values for PM<sub>2.5</sub> precursors in a moderate nonattainment  
41 area for PM<sub>2.5</sub> are 100 tons per year for PM<sub>2.5</sub> and SO<sub>2</sub>. Sources of NO<sub>x</sub>, VOCs, PM<sub>2.5</sub>, and SO<sub>2</sub> associated

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<sup>1</sup> Ozone precursors include NO<sub>x</sub> and volatile organic compounds (VOCs), which react in the presence of sunlight to create O<sub>3</sub>.

1 with the proposed project would include emissions from construction and demolition equipment,  
2 fugitive dust (PM<sub>2.5</sub>), painting of building surfaces and parking spaces (VOCs only), the increases in  
3 distance for daily commuters, and any boilers or generators.

#### 4 **Air Permit Requirements**

5 Title V of the CAA requires all major sources of air pollution to obtain an operating permit known as  
6 a Title V permit, which consolidates all state and federal air quality requirements that apply to the  
7 source, including emissions limits and monitoring, recordkeeping, and reporting requirements. NSF  
8 Indian Head's current Title V Permit was issued in January 2011.

9 In Maryland, a permit to construct (PTC) from MDE is required before construction or modification  
10 of an emission source, including emergency generators and boilers, unless that source is listed under  
11 COMAR 26.11.02.10 as being exempt from PTC requirements. Maryland's air quality program  
12 includes requirements for sources that emit toxic air pollutants, as defined in COMAR 26.11.15. These  
13 requirements specify that new sources of toxic air pollutants must obtain a PTC, and that the owner  
14 or operator of all new sources and certain existing sources of toxic air pollutants must apply the best  
15 available control technology for toxics.

16 Operations at Building 600 result in emissions of PM and VOCs, including insignificant emissions  
17 from bench-scale ovens (e.g., acetone is a toxic air pollutant/VOC), and PM/PM<sub>10</sub> and organic acid (a  
18 toxic air pollutant) emissions from the nano-aluminum laboratory. Several fume hoods are used in  
19 Building 600 where formulating and solvent dispensing are performed. Tests and experiments at  
20 Building 600 are on the gram-size or smaller, and these laboratory fume hoods and vents are listed  
21 as insignificant activities in the installation's Title V Permit.

#### 22 **Greenhouse Gas Emissions**

23 GHGs are gases in the lower atmosphere that absorb infrared radiation emitted from the earth's  
24 surface and then radiate most of this energy back to the earth's surface, allowing average global  
25 temperatures to be about 60°Fahrenheit warmer than they would otherwise be (USEPA 2012).

26 EO 13514 requires federal agencies to compile annual GHG emission inventories and set GHG  
27 emission reduction targets for fiscal year 2020, relative to fiscal year 2008. The DOD's emission  
28 reduction target is to reduce GHG emissions from non-combat activities by 34 percent (DOD 2010).

29 EO 13423 requires each federal agency to reduce GHG emissions through the reduction of energy  
30 intensity by three percent annually, or 30 percent by the end of fiscal year 2015, relative to the  
31 agency's energy use in fiscal year 2003. In addition, heads of federal agencies must implement  
32 sustainable practices for GHG emissions avoidance or reductions.

33 NSF Indian Head reports on carbon dioxide (CO<sub>2</sub>) and carbon dioxide equivalent (CO<sub>2</sub>e) emissions for  
34 the industrial waste processor and coal boilers and large generators at Building 1920. In 2013, Indian  
35 Head produced 322,245 tons of CO<sub>2</sub>, 4.35 tons of methane, and 2.34 of nitrous oxide (Indian Head  
36 2013).

### 37 **3.5.2 Environmental Consequences**

#### 38 **Ambient Air Quality**

##### 39 ***Proposed Action (Preferred Alternative)***

40 The Proposed Action would have a minimal effect on air emissions. The Proposed Action would  
41 include the installation of an emergency generator, but a generator already exists at Building 600

1 which would be removed as part of the Proposed Action. If the capacity of the generator engine  
 2 exceeds 373 kilowatts, the Navy would apply for, and obtain, a PTC from MDE prior to installation.  
 3 The proposed laboratory would have fume hoods, similar to those currently in place at Building 600.  
 4 The Navy would evaluate potential toxic air pollutant emissions and, if necessary, obtain a PTC and  
 5 apply best available control technology for toxics to ensure that emissions do not present a concern  
 6 to public health. The fume hoods and vents would remain listed as insignificant activities per the  
 7 installation's Title V Permit.

8 Projects of a similar size and scope have fallen well below the *de minimis* thresholds for General  
 9 Conformity Rule applicability. To demonstrate that construction emissions would be less than the *de*  
 10 *minimis* thresholds, the Proposed Action was compared to a larger project for which detailed  
 11 construction emissions analysis was performed. The Medical Facilities Development and University  
 12 Expansion Final Environmental Impact Statement (EIS) at Naval Support Activity Bethesda (June  
 13 2013) included 122,700 SF (11,399 SM) of building demolitions, construction of a 573,000-SF  
 14 (53,233-SM) medical building, a 500-space parking garage, a 341,000-SF (31,680-SM)  
 15 education/research facility and 144,000-SF (13,378-SM) associated above-ground parking garage at  
 16 Uniformed Services University of the Health Sciences. In comparison, the Proposed Action involves a  
 17 21,030-SF (1,954-SM) building and approximately 30 parking spaces. Therefore, based on the  
 18 difference in the size of projects, it can be concluded that the construction for the Proposed Action  
 19 would be substantially less than the emissions for actions analyzed in the Naval Support Activity  
 20 Bethesda EIS.

21 The EIS peak construction emissions are summarized below in Table 3-1 and are well below the  
 22 applicable *de minimis* thresholds. The construction emissions of the Proposed Action analyzed in this  
 23 EA would be at least an order of magnitude lower and also below the *de minimis* thresholds.

24 **Table 3-1. NSA Bethesda Final EIS, Peak Construction Year Emissions**

	<i>de minimis</i> threshold	Bethesda -Medical Facilities w/underground parking	Bethesda- University Expansion	Total Peak Construction Year emissions
NOx	100	18.98	7.80	26.79
VOCs	50	5.22	1.09	6.31
PM2.5	100	2.01	0.70	2.71
SO2	100	0.54	0.23	0.77

25  
 26 In addition, the Proposed Action would not result in any new research testing activities, but rather  
 27 would consolidate existing operations. Therefore, the Proposed Action would not require a  
 28 conformity determination and would not conflict with regional efforts to reach attainment status for  
 29 all criteria pollutants. A Record of Non-applicability is available in Appendix B along with the air  
 30 applicability analysis.

### 31 ***Alternative Action***

32 The Alternative Action would have the potential to affect air emissions due to temporary emissions  
 33 from renovation activities; however, these effects would cease upon completion of the renovation  
 34 and have no long-term impacts on air quality. No new permits would be required. Operations would  
 35 continue under the existing Title V permit.

1           **No-Action Alternative**

2     The No-Action Alternative would not affect ambient air quality. No new permits would be required,  
3     and operations would continue under the existing Title V permit.

4           **Greenhouse Gas Emissions**

5           ***Proposed Action (Preferred Alternative)***

6     The Proposed Action would have the potential to affect GHG emissions due to equipment installation  
7     and temporary emissions from construction activities, but impacts would be negligible. The  
8     consolidation of RDT&E activities would not introduce any new staff to NSF Indian Head and would  
9     redistribute staff currently working at the installation. There would be improvements to energy  
10    efficiency of the proposed laboratory and associated reduction in indirect GHG emissions from power  
11    generation. The Proposed Action is, therefore, not expected to conflict with Navy-wide GHG-  
12    emissions-reduction goals as required by EO 13514.

13           ***Alternative Action***

14    The Alternative Action would not be expected to appreciably affect GHG emissions due to temporary  
15    renovation activities. Otherwise, the Alternative Action would result in improved energy efficiency  
16    and would not conflict with Navy-wide GHG-emission-reduction goals as required by EO 13514.

17           **No-Action Alternative**

18    The No-Action Alternative would have no effect on GHG emissions.

19    **3.6 Infrastructure and Utilities (Solid and Hazardous Waste)**

20    **3.6.1 Affected Environment**

21    A hazardous waste is defined by the USEPA as a solid waste that exhibits a characteristic of  
22    ignitability, corrosivity, reactivity, or toxicity, or is specifically listed as a hazardous waste. Federal,  
23    state, and county laws regulate hazardous and nonhazardous solid wastes. The Resource  
24    Conservation and Recovery Act (RCRA) authorizes the USEPA to control hazardous waste from  
25    “cradle to grave.” This lifecycle includes the generation, transportation, treatment, storage, and  
26    disposal of waste.

27    A variety of solid waste is generated at NSF Indian Head, including construction and demolition  
28    debris, industrial waste, and regular garbage. Many of the buildings are more than 50 years old and  
29    have the potential to contain hazardous materials including asbestos, lead-based paint, and  
30    polychlorinated biphenyls (PCBs). Because energetics are used for RDT&E activities, construction  
31    and demolition debris, and other solid waste, also have the potential to contain explosives residue.  
32    NSF Indian Head currently holds a Controlled Hazardous Substance Permit from MDE. Non-explosive  
33    hazardous waste is transported to an approved, offsite hazardous waste treatment, storage, or  
34    disposal facility in accordance with Department of Transportation regulations (49 CFR Parts 171-  
35    172).

36    Currently, between 0.2 and 2.6 gallons (one and 10 liters) of hazardous waste are removed from  
37    Building 600 on a weekly basis and collected at storage sites elsewhere on the installation in  
38    accordance with the Controlled Hazardous Substance permit. Types of process-related waste  
39    generated at Building 600 include organic chemical, halogenated (chlorine), acid, alkaline, and  
40    explosive wastes (Jouet 2012b).

1 As discussed under Section 3.4.1, Building 600 falls within ER Site 16 (Laboratory Chemical Disposal)  
2 and ER Site 53 (Mercury Contamination of Sewage System). ER Site 16 contains various laboratory  
3 chemicals—acids, amines, cyanide compounds, metals, and chlorinated and nonchlorinated  
4 solvents—that were previously disposed of in the Building 600 wastewater system. ER Site 53  
5 contains mercury contamination that originated from Building 102 and may be present within the  
6 storm and sanitary sewer pipes around that building and Building 600 (NAVFAC 2004). According to  
7 input from the NSF Indian Head Environmental Office, an ethylene glycol spill occurred on the eastern  
8 side of Building 600. Soil testing in this area indicated that the ethylene glycol contamination level  
9 was below the threshold that would present human health concerns (Carros 2012). No ER sites are  
10 located in the vicinity of the proposed site for the new laboratory.

### 11 **3.6.2 Environmental Consequences**

#### 12 **Proposed Action (Preferred Alternative)**

13 Minimal impacts would be associated with solid and hazardous waste from implementing the  
14 Proposed Action. Process-related waste generated at the proposed laboratory would be similar in  
15 type and quantity to the waste generated from current activities in Building 600. These wastes would  
16 continue to be managed in accordance with the installation's Controlled Hazardous Substance  
17 permit. The Proposed Action would allow for more efficient management of this hazardous waste by  
18 providing adequate fire protection and thus reducing the frequency with which explosive hazardous  
19 waste must be removed from the laboratory.

20 Demolition of Building 600 would generate waste that may contain asbestos-containing materials,  
21 lead piping, lead-based paint, PCBs, and mercury. All demolition activities involving suspected  
22 asbestos-containing materials would be performed in accordance with federal and state  
23 requirements for proper management of asbestos for renovation and disposal included in 40 CFR 61,  
24 Subpart M, as well as COMAR 26.11.21. Lead piping and materials suspected of containing asbestos,  
25 mercury, or PCBs would be removed prior to the start of demolition activities, kept separate from  
26 general demolition debris, and disposed of offsite in accordance with applicable regulations.

27 The condition of soil at Building 600 would result in certain handling and disposal requirements in  
28 accordance with local, state, and federal regulations and the Final Record of Decision for the Lab Area  
29 (NSASP 2011). Contractors performing the demolition of Building 600 would adhere to handling and  
30 disposal requirements consistent with remedial actions identified in the Record of Decision and in  
31 accordance with required regulations. These measures include excavation, offsite disposal, and site  
32 restoration for surface soil at the site of Building 600, and institutional controls for subsurface soils  
33 and sewer pipes (NSASP 2011).

34 Demolition debris would be sampled to verify that lead levels are below the RCRA hazardous waste  
35 threshold and, if exceeded, the contaminated debris would be separated and disposed of in  
36 accordance with RCRA regulations. Otherwise, the material would be transported offsite to a non-  
37 hazardous waste disposal facility, landfill, or incinerator. Non-hazardous solid waste would be  
38 properly disposed of at a permitted solid waste acceptance facility, or recycled, if possible.

#### 39 **Alternative Action**

40 Similar to the Proposed Action, the Alternative Action would have a minimal impact on the generation  
41 of process-related waste and would allow for more efficient management of hazardous waste by  
42 providing adequate fire protection. Renovation of Building 600 would potentially result in removal  
43 and subsequent disposal of the same types of hazardous materials as the Proposed Action, but may  
44 not require soil excavation.

## 1 **No-Action Alternative**

2 The No-Action Alternative would have no impacts from hazardous or process-related waste. NSF  
3 Indian Head would continue to manage solid and hazardous waste according to permit requirements  
4 and in accordance with all required local, state, and federal regulations.

## 5 **3.7 Health and Safety**

### 6 **3.7.1 Affected Environment**

7 The mission of the U.S. Department of Labor's Occupational Safety and Health Administration is to  
8 regulate occupational safety hazards to save lives, prevent injuries, and protect the health of workers  
9 in the United States. In industrial settings, the primary occupational health and safety concerns may  
10 include the following:

- 11 • toxic and hazardous materials handling and explosives safety
- 12 • electrical safety
- 13 • fire protection
- 14 • personal protective equipment
- 15 • occupational health and environmental controls

16 NSF Indian Head manages health and safety protocols at the installation in accordance with all  
17 required local, state, and federal regulations.

18 The health and safety issues relevant to the Proposed Action are associated with Building 600 and,  
19 to a lesser extent, the ancillary research facilities such as Building 438 and Building 922. As noted in  
20 Chapter 1, Building 600 has several building code concerns, including utility and interior  
21 configuration problems, contains lead and asbestos, and is not ADA-compliant. Due to the research  
22 operations performed at the facility, Building 600 may also have explosives residue (see additional  
23 discussion below under Explosives Safety). Building 438 has leaking water, causing mold growth on  
24 walls near explosive materials, and Building 922 has a deteriorating roof, causing the interior of the  
25 building to be in a substandard condition.

26 Building 600 falls within ER Site 16 (Laboratory Chemical Disposal) and ER Site 53 (Mercury  
27 Contamination of Sewage System), both within an area known as the Lab Area (see also Figure 3-2).  
28 ER Site 16 consists of the sewers draining Building 600. Reportedly, waste chemicals were disposed  
29 of into the plumbing system, where they combined with sanitary sewage and flowed to the sewage  
30 treatment plant. Approximately 80 chemical compounds were generated or procured by this facility  
31 on an annual basis. Chemicals used in annual quantities exceeding 10 gallons included acids, amines,  
32 cyanide compounds, and both chlorinated and non-chlorinated solvents. Other materials used in  
33 Building 600 in smaller quantities included: alkalis, alcohols, aldehydes, metals and metal  
34 compounds (zinc, iron, cadmium, lead, and mercury), and asbestos. Analysis of the wastewater from  
35 Building 600 showed detections of the following: amines, metals (cadmium, lead, zinc, copper,  
36 mercury, and silver), cyanides, nitrate esters, richloroethylene, and methylene chloride (NSASP  
37 2011).

38 ER Site 53 contains mercury contamination that originated from Building 102 and may be present  
39 within the storm and sanitary sewer pipes around that building and Building 600 (NAVFAC 2004;  
40 NSASP 2011). Between the early 1900s and the late 1960s, all sewage generated in the buildings in

1 the Lab Area was piped directly to Mattawoman Creek. Since the late 1960s, separate sanitary and  
2 storm sewer systems have served the Lab Area. As these upgrades to the sewer system were made,  
3 it is possible that some lines were abandoned in place, and thus are not marked on any plot plans or  
4 maps. The sanitary sewage from the Lab Area was sent to the Sewage Treatment Plant No. 2 from the  
5 early 1970s, when it was constructed, until the early to mid-1980s. From the mid-1980s to the early  
6 1990s, the sanitary sewage was rerouted to the upgraded Sewage Treatment Plant No. 1, and Sewage  
7 Treatment Plant No. 2 was closed. In the early 1990s, Buildings 103 and 502 were connected to the  
8 Industrial Wastewater Treatment Phase I System, which is designed to collect operations wastewater  
9 for analysis before discharge to Sewage Treatment Plant No. 1. Laboratory workers reported that  
10 approximately a liter of mercury was lost per month down the sinks from Building 102. Over the 77-  
11 year period (1909–1986), the Building 102 laboratory operated without mercury traps on the sinks.  
12 Additional quantities of mercury may have been disposed of down the drain lines as the result of  
13 similar mercury handling and disposal practices at the other laboratory buildings within the Lab Area  
14 (NSASP 2011).

15 According to input from the NSF Indian Head Environmental Office, an ethylene glycol spill occurred  
16 on the eastern side of Building 600. Soil testing in this area indicated that the ethylene glycol  
17 contamination level was below the threshold that would present human health concerns (Carros  
18 2012).

19 No ER sites or health and safety concerns are located in the vicinity of the proposed site for the new  
20 laboratory.

### 21 **Explosives Safety**

22 To ensure safety and consistency in the management of explosives at Navy installations, the Navy  
23 implemented the NOSSA to establish criteria for all Navy installations where explosives are present.  
24 These criteria are codified in Naval Sea Systems Command Operating Procedures Number 5,  
25 *Ammunition and Explosives Safety Ashore*, and are based on safety standards established by the  
26 Department of Defense Explosives Safety Board (DDESB). Excavation work, new construction, or  
27 major modifications to structures at, or near, areas where explosives are, or were, handled,  
28 manufactured, or stored must receive an Explosives Site Approval from NOSSA and DDESB. The site  
29 approval process ensures that all structures comply with the safety criteria set forth in OP 5. Projects  
30 that involve a munitions response (i.e., projects where potential exists for explosives to be contacted,  
31 such as decontamination of a structure with significant amounts of explosive contaminants) must be  
32 approved by NOSSA and/or DDESB. For these projects, the installation must prepare an Explosives  
33 Safety Submission (ESS) or, if the probability of encountering explosives is low, an ESS determination  
34 request.

35 NSWC IHEODTD produces, tests, transports, and stores explosives items and materials and, therefore  
36 follows OP 5 criteria for construction, renovation, and excavation work.

### 37 **3.7.2 Environmental Consequences**

#### 38 **Proposed Action (Preferred Alternative)**

39 The likelihood of adverse impacts due to health and safety issues under the Proposed Action would  
40 be minimal, due to safety procedures that would be in place. The Proposed Action would result in  
41 long-term beneficial impacts in improvements to occupational health and safety at NSF Indian Head  
42 by consolidating RDT&E operations, and demolishing Building 600 and replacing it with a modern  
43 laboratory, which would address several building code and maintenance concerns (see Section 1.4).  
44 New construction would be ADA compliant, thus helping to make the workplace safer for personnel

1 with disabilities. The walkway between the proposed laboratory and parking lot, which is on the  
2 opposite side of Strauss Avenue, would incorporate appropriate signage and markings to ensure  
3 pedestrian safety. Consolidating RDT&E operations would also improve occupational health and  
4 safety by relocating personnel in other ancillary facilities that are also experiencing maintenance  
5 issues.

6 Demolition of Building 600 and the associated earthwork would require handling of hazardous  
7 materials, and contaminated building debris and soil. Appropriate safety procedures would be  
8 implemented to minimize these hazards (e.g., respirators, gloves, and other personal protective  
9 equipment) in accordance with required local, state, and federal regulations to minimize any  
10 potential health and safety concerns (see additional detailed discussion under Section 3.6,  
11 Infrastructure and Utilities [Solid and Hazardous Waste]).

### 12 ***Explosives Safety***

13 The Proposed Action would improve explosives safety at NSF Indian Head by improving fire  
14 protection, reducing transport of energetic materials, and consolidating explosives operations in  
15 accordance with the 2010 NSF Indian Head Master Plan. The lack of a sprinkler system inside  
16 Building 600 requires explosives materials to be transported into, and out of, the laboratory facilities  
17 on a daily basis. Improved fire protection systems at the proposed laboratory would reduce this  
18 download and transport requirement to once per week. Also, because the building design would  
19 incorporate the latest explosives safety design criteria, the proposed laboratory would offer  
20 improved safety to building occupants relative to Building 600, which does not comply with current  
21 requirements and was not designed to mitigate hazards such as progressive collapse or detonation  
22 fragments.

23 Building 600 is likely contaminated with residual energetic materials. Demolition of Building 600  
24 under the Proposed Action would require preparation of an ESS and approval by the DDESB in  
25 accordance with NAVSEA OP5 and NOSSAINST 8020.15D before demolition activities can proceed.  
26 NSF Indian Head would ensure that all required documentation is complete prior to demolition, and  
27 that all required safety requirements are followed with regard to handling and disposal of  
28 contaminated energetic materials, to ensure that it is safe to excavate and dispose of underlying soils.  
29 Therefore, no adverse impacts would be associated with explosives safety from demolition activities  
30 under the Proposed Action.

31 There is no evidence of the presence of munitions and explosives of concern (MEC) within the site of  
32 the proposed laboratory (NAVFACWASH 2012). If any potential MEC is encountered during  
33 excavation, appropriate NSASP personnel would be notified and the MEC would be avoided or  
34 removed in accordance with all necessary safety protocols and requirements.

### 35 **Alternative Action**

36 As with the Proposed Action, there would be minimal likelihood of any adverse impacts due to health  
37 and safety issues under the Alternative Action. Renovations to Building 600 would address the  
38 building's existing health and safety concerns (see Section 1.4). Renovations would also make  
39 Building 600 ADA compliant. Renovation activities would involve handling of the same types of  
40 hazardous materials as the Proposed Action, with similar use of safety procedures and personal  
41 protective equipment, thereby minimizing the likelihood of any health or safety concerns.

### 42 ***Explosives Safety***

43 The Alternative Action would not consolidate explosives operations in accordance with the 2010 NSF  
44 Indian Head Master Plan, but it would improve explosives safety by providing a suitable fire

1 protection system that would minimize transport of explosives to only once per week instead of daily.  
2 Renovation of Building 600 would require preparation of an ESS and approval by the DDESB in  
3 accordance with NAVSEA OP5 and NOSSAINST 8020.15D before renovation activities can proceed.  
4 NSF Indian Head would ensure that all required documentation is complete prior to renovation and  
5 that all required safety requirements are followed with regard to handling and disposal of  
6 contaminated energetic materials. Therefore, no adverse impacts would be associated with  
7 explosives safety under the Action Alternative.

## 8 **No-Action Alternative**

9 The No-Action Alternative would not resolve the existing health and safety issues in Building 600 and  
10 ancillary facilities. Ongoing maintenance of the facilities would continue, but the facilities would  
11 continue to degrade over time. The No-Action Alternative would not consolidate explosive  
12 operations per the 2010 NSF Indian Head Master Plan, nor would it improve explosives safety at the  
13 base. Therefore, the No-Action Alternative would have long-term, minor adverse impacts.

## 14 **3.8 Land Use**

### 15 **3.8.1 Affected Environment**

16 The manner in which land is used to meet strategic, economic, social, or environmental objectives is  
17 referred to as "land use." Land use planning helps to determine the best use for each parcel of land in  
18 an area, and may take into account geological, ecological, economic, health, and sociological factors.

19 The 2010 Indian Head Master Plan is the primary comprehensive planning document for the  
20 installation, and guides future growth and development of the installation. Primary land use areas on  
21 NSF Indian Head include personnel support, mission support, energetics and inert RDT&E, and  
22 industrial uses. Industrial uses predominate on Cornwallis Neck, with some mission support,  
23 personnel support, and RDT&E uses throughout the northern part of the peninsula and concentrated  
24 RDT&E functions on its southern tip. On the Stump Neck Annex, RDT&E uses predominate, with  
25 industrial and personnel support facilities dispersed throughout. Limited parts of the property are  
26 designated natural areas, many of which are currently undevelopable due to the presence of ESQD  
27 arcs, contamination sites, and bald eagle protection areas. These areas are primarily located on the  
28 Stump Neck Annex (NSASP 2010). The proposed sites of the new energetics laboratory is not within  
29 any ESQD arcs.

30 Although energetics RDT&E functions are dispersed throughout NSF Indian Head, primary support  
31 facilities are concentrated in the northern and southern parts of the Cornwallis Neck restricted area.  
32 One goal of the 2010 NSF Indian Head Master Plan is to consolidate energetics RDT&E functions into  
33 the Advanced Energetics Research Laboratory Complex at the southern end of Cornwallis Neck. This  
34 is one of six initiatives to co-locate similar and/or complementary functions into consolidated  
35 complexes on the installation (NSASP 2010).

36 The proposed site of the new energetics laboratory facility is part of the Advanced Energetics  
37 Research Laboratory Complex proposed in the 2010 NSF Indian Head Master Plan. This area is  
38 currently designated as an RDT&E area and, although the footprint of this land use district is not  
39 projected to change, implementation of the Master Plan would result in more intensive RDT&E land  
40 uses here. Building 600 is located in an RDT&E area on the northern portion of Cornwallis Neck,  
41 adjacent to an industrial land use district and a small mission support district. The 2010 NSF Indian  
42 Head Master Plan projects mission support land use functions for this property, adjacent to the larger  
43 central industrial district with RDT&E functions shifted to the northern and southern extremes of  
44 Cornwallis Neck.

## 1 **3.8.2 Environmental Consequences**

### 2 **Proposed Action (Preferred Alternative)**

3 The Proposed Action would result in long-term, beneficial impacts on land use and land use  
4 compatibility on NSF Indian Head. Although the Proposed Action would not change any land use  
5 designations on NSF Indian Head, it is consistent with the 2010 NSF Indian Head Master Plan and  
6 would support NSF Indian Head's effort to consolidate organizations and functions more efficiently  
7 throughout the installation. The construction of the new laboratory facility would result in co-located  
8 complementary facilities in the RDT&E area on the southern portion of Cornwallis Neck. The  
9 demolition and removal of Building 600 would also support future land use per the 2010 NSF Indian  
10 Head Master Plan by removing an RDT&E function from an area designated for future mission  
11 support land use functions. These projects would help promote long-term compatibility of adjacent  
12 land use types as these future land use goals are realized. The Proposed Action would enhance the  
13 efficiency of mission operations, encourage collaboration among personnel, and reduce  
14 transportation demands for energetics RDT&E personnel. It would also replace an aging, obsolescent  
15 building with contemporary laboratory facilities, promoting efficient mission operations in the  
16 future. The Proposed Action would have no effect on land use compatibility with the properties  
17 surrounding the installation.

### 18 **Alternative Action**

19 The Alternative Action would not affect land use types at NSF Indian Head. This alternative is,  
20 however, inconsistent with the 2010 NSF Indian Head Master Plan, and would not contribute to NSF  
21 Indian Head's stated land use goals to consolidate RDT&E operations. Therefore, impacts on land use  
22 planning would be minor and adverse.

### 23 **No-Action Alternative**

24 The No-Action Alternative would not cause any changes to land use types or existing land use  
25 patterns at NSF Indian Head. As with the Alternative Action, this alternative is inconsistent with the  
26 2010 NSF Indian Head Master Plan, and would not contribute to NSF Indian Head's stated land use  
27 goals to consolidate energetics RDT&E operations at the southern end of Cornwallis Neck. Therefore,  
28 impacts on land use planning would be minor and adverse.

## 29 **3.9 Irreversible and Irretrievable Commitment of Natural and Depletable** 30 **Resources**

31 NEPA requires that environmental analysis include identification of ". . . any irreversible and  
32 irretrievable commitments of resources which would be involved in the Proposed Action should it  
33 be implemented." Irreversible and irretrievable resource commitments are related to the use of non-  
34 renewable resources and the effects that the uses of these resources have on future generations.  
35 Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy or  
36 minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource  
37 commitments involve the loss in value of an affected resource that cannot be restored as a result of  
38 the action (e.g., the disturbance of a cultural site).

39 Irreversible and irretrievable commitments of resources from the Proposed Action would include  
40 the loss of Building 600, a historic resource, and the minor loss of vegetation and wildlife (immobile  
41 species such as invertebrates or juveniles that are lost during construction activities). NSF Indian  
42 Head would mitigate adverse impacts to the historic resource in consultation with the MHT. Though  
43 biological resources would be lost, much of the impact would be offset or minimized through design,  
44 minimization measures, and mitigation, including replanting of trees in another area of the

1 installation which may be identified as mitigation during the federal consistency review  
2 determination process under the CZMA. Other impacts would be short-term during the periods of  
3 construction activities. Implementation of this action would result in a minor increase in fuels used  
4 by ground-based vehicles, particularly during the site clearance and preparation, and the materials  
5 used in construction. Therefore, minor amounts of these nonrenewable resources would be  
6 irretrievably lost or depleted.

### 7 **3.10 Relationship between Local Short-Term Use of the Environment and Long-** 8 **Term Productivity**

9 NEPA requires an analysis of the relationship between a project's short-term impacts on the  
10 environment, and of the effects that these impacts may have on the maintenance and enhancement  
11 of the long-term productivity of the affected environment. Impacts that narrow the range of beneficial  
12 uses of the environment are of particular concern. This refers to the possibility that choosing one  
13 development option reduces future flexibility in pursuing other options, or that giving over a parcel  
14 of land or other resource to a certain use eliminates the possibility of other uses being performed at  
15 the site.

16 The Proposed Action (construction of the new laboratory) would take place within an area of NSF  
17 Indian Head that has been maintained as an undeveloped parcel. No unique habitat or ecosystems  
18 would be lost due to this action. Implementation of the Proposed Action or No-Action Alternative  
19 would not result in any impacts that would reduce environmental productivity, permanently narrow  
20 the range of beneficial uses of the environment, or pose long-term risks to health, safety, or the  
21 general welfare of the public.

### 22 **3.11 Cumulative Impacts**

23 CEQ regulations stipulate that the cumulative effects analysis within an EA should consider the  
24 potential environmental impacts resulting from "the incremental impacts of the action when added  
25 to past, present, and reasonably foreseeable future actions regardless of what agency or person  
26 undertakes such other actions" (40 CFR 1508.7). Recent CEQ guidance in considering cumulative  
27 effects involves defining the scope of the other actions and their interrelationship with the proposed  
28 action. The scope must consider geographical and temporal overlaps among the proposed actions  
29 and other actions. It must also evaluate the nature of interactions among these actions.

30 Cumulative effects are most likely to arise when a relationship or synergism exists between the  
31 proposed action and other actions expected to occur in a similar location or during a similar time  
32 period. Actions overlapping with, or in proximity to, the proposed action would be expected to have  
33 more potential for a relationship than would those that are more geographically separated.

34 To identify cumulative effects, three fundamental questions need to be addressed:

- 35 • Does a relationship exist such that affected resource areas of the proposed action might  
36 interact with the affected resource areas of past, present, or reasonably foreseeable actions?
- 37 • If one or more of the affected resource areas of the proposed action and another action could  
38 be expected to interact, would the proposed action affect, or be affected by, impacts of the  
39 other action?
- 40 • If such a relationship exists, then does an assessment reveal any potentially significant  
41 impacts not identified when the proposed action is considered alone?

1 The scope of the cumulative effects analysis involves both the geographic extent of the effects and  
 2 the time frame in which the effects could be expected to occur. In this analysis, the Navy considered  
 3 whether the direct and indirect impacts associated with the Proposed Action would have the  
 4 potential to combine with other past, present, and reasonably foreseeable future actions to reach a  
 5 significant level of environmental impact. The following impacts of the Proposed Action are  
 6 considered to have the greatest potential to contribute to cumulative impacts:

- 7 • tree clearing for the proposed laboratory
- 8 • stormwater runoff from the proposed laboratory and associated parking lot
- 9 • demolition of historic Building 600

10 Because the anticipated impacts on Socioeconomics and Environmental Justice, Community Facilities  
 11 and Services, Transportation, Noise, Infrastructure and Utilities (except for Solid and Hazardous  
 12 Waste), Archeological Resources, and Wetlands and Floodplains are expected to be nonexistent or  
 13 negligible, these resources are not discussed in the context of cumulative impacts. In addition, since  
 14 the impacts from the Proposed Action (Preferred Alternative) and Action Alternative associated with  
 15 Health and Safety and Explosives Safety are beneficial, these impacts would not result in any  
 16 incremental, adverse cumulative impacts and are, therefore, also not discussed.

17 **3.11.1 Recent, Ongoing, and Foreseeable Future Projects**

18 After a review of recent, ongoing, and foreseeable future projects at NSF Indian Head, it was  
 19 determined that the following projects should be analyzed in the consideration of cumulative impacts  
 20 (see Table 3-2 below). The primary impacts associated with the Proposed Action are vegetation loss  
 21 from tree clearing, stormwater runoff, and demolition or renovation of a historic structure. Because  
 22 the area affected by the Proposed Action would occur within the limits of the installation, projects  
 23 considered under cumulative impacts are those that have occurred, are ongoing, or are planned for  
 24 the future within the boundary of NSF Indian Head.

25 **Table 3-2. Recent, Ongoing, and Foreseeable Future Projects**

Project	Description	Status	Mitigation, if Appropriate
P-222: Energy Upgrades to Steam Distribution System	Enhance steam facilities throughout the installation. Demolition of Goddard Power Plant and associated facilities.	Demolition and construction is ongoing.	MILCON P-222 Memorandum of Agreement (MOA) has been executed.
P-161/P-162: Agile Chemical Plant	Redevelopment of the Biazzi Plant to combine Moser Plant operations with the Biazzi Plant. Demolition of Building 786 (individually eligible).	Ongoing; construction and demolition activities began in 2008.	Mitigation has been completed.

Project	Description	Status	Mitigation, if Appropriate
Railroad Demolition	Removal of railroad tracks throughout the installation.	Ongoing.	Removal and Disposition of Excess Railroad Tracks MOA executed.
P-297: Explosive Ordnance Disposal Operations Building	Construction of a 45,000-SF (4,180-SM) facility.	Future. Fiscal Year (FY) 18.	Not yet determined.
Additions to Building 1576	Two small additions to existing Building 1576.	Future. In design.	Not yet determined.
Demolish Building D70	Demolition of Building D70 and associated sidewalks (8,072 SF [750 SM]).	NEPA documentation has been completed. Future.	Demolition of Building D70 MOA has been executed.
Navy Exchange (between Buildings D69 and 620)	Renovate 20,000-SF (1,858-SM) Navy Exchange.	Future. FY 17/18.	Not yet determined.
P-201: Hazardous Materials Storage Facility (near Buildings B454 and 455)	Construct a 50,000-SF (5,083-SM) warehouse for hazardous materials reutilization and central receiving, property disposal, and staging.	Future. FY 17/18.	Not yet determined.
Materials Processing Building	Construct a 2,000-SF (186-SM) facility	Future. In design.	None.
Physical Fitness Center (near Buildings 1558 and D332)	Construct a 29,000-SF (2,694-SM) facility. Provide physical fitness and morale, welfare, and recreation spaces.	Future. FY 17/18.	Not yet determined.

### 1 3.11.2 Cumulative Impacts Discussion

#### 2 Historic Architectural Resources

3 Under the Proposed Action, NSF Indian Head would demolish Building 600, which is a contributing  
4 resource in the Naval Powder Factory Historic District. Recent activities under the Navy's  
5 Infrastructure Reduction Program have demolished 21 contributing resources to this district, with  
6 further activities expected to demolish up to six more contributing elements in the foreseeable future.

7 Other ongoing and future projects at NSF Indian Head would have adverse impacts on historic  
8 resources in, and adjacent to, the Naval Powder Factory Historic District. These projects, such as the  
9 Railroad Demolition and Energy Upgrades to Steam Distribution System, would result in the  
10 demolition of the National Register-eligible Goddard Power Plant and the Indian Head Railroad.  
11 Cumulatively, these projects affect the integrity of historic architecture in, and around, the Naval  
12 Powder Factory Historic District.

1 The impacts of these projects have been minimized or mitigated through MOAs. In 2010, the Navy  
2 signed an MOA with the MHT acknowledging the anticipated impacts on the Naval Powder Factory  
3 Historic District and requiring the development of Historic American Engineering Record  
4 documentation for the district. The intent of this documentation is to provide a comprehensive  
5 mitigation strategy that addresses cumulative impacts throughout the district, as opposed to  
6 mitigating impacts on individual buildings through separate consultations and documentation  
7 efforts. The Historic American Engineering Record documentation incorporates drawings, history,  
8 and photographs of historic buildings (including Building 600) and the overall district to produce a  
9 comprehensive record conveying the importance of the individual structures and overall process.  
10 Because of this effort, significant cumulative impacts to historic architectural resources are not  
11 anticipated.

## 12 **Biological Resources**

13 The Proposed Action and Action Alternative would result in minor adverse impacts on vegetation  
14 and wildlife, but no impacts on RT&E species. The No-Action Alternative would not affect biological  
15 resources.

16 The Proposed Action (Preferred Alternative) would remove approximately 32,962 SF (3,062 SM) of  
17 forest. One planned action would also require tree clearing in the vicinity of the proposed laboratory.  
18 The Navy intends to construct two additions to Building 1576, located across Strauss Avenue from  
19 the proposed laboratory. This would require the clearing of approximately 6,725 SF (625 SM) of  
20 mature, hardwood forest on the northwest side of Building 1576.

21 The tree clearing required for the Proposed Action (Preferred Alternative) and the Building 1576  
22 additions would affect different forest patches and would not result in the fragmentation of large,  
23 contiguous forest patches. The forested area that would be cleared for the Building 1576 additions  
24 likely support some FIDS due to the size of the forest. The additional clearing would result in a  
25 reduction in the size of the overall forest parcel and minor adverse impacts to FIDS due to habitat  
26 loss; however, impacts to FIDS on the population level would not occur. The Proposed Action  
27 (Preferred Alternative) would mitigate the impact on vegetation by replanting the same acreage (or  
28 greater) at a location to be determined on the installation, if required as a result of the CZMA federal  
29 consistency determination review process. The Action Alternative would not result in any loss of  
30 forest, and areas that are temporarily disturbed would be revegetated with grass. Other future  
31 planned projects at other areas of the installation may require vegetation clearing. Replanting and/or  
32 relandscaping may occur as part of these projects, which would minimize any adverse impacts to  
33 vegetation. NSF Indian Head will continue to manage natural vegetation on the installation in  
34 accordance with INRMP goals. As a result, there would be no significant cumulative impacts on  
35 vegetation.

36 Although some loss of vegetation and disturbance to wildlife species would occur during  
37 construction and renovation activities, beneficial impacts from revegetation of disturbed areas  
38 would also be realized. The amount of forest that would be lost would be a relatively small in  
39 comparison to the amount of undisturbed vegetation present at NSF Indian Head and in the region.  
40 The impacts on vegetation and wildlife habitat would be minor and would not incrementally cause a  
41 significant cumulative impact. Because RT&E species and bald eagles would not be affected, there  
42 would be no cumulative effects in combination with past, present, or foreseeable future projects at  
43 NSF Indian Head.

## 1 **Water Resources**

2 Although the Proposed Action (Preferred Alternative) would result in an increase in impervious  
3 surfaces, there would be negligible adverse impacts on surface waters or wetlands due to the  
4 implementation of LID measures and stormwater management controls such as silt fences and other  
5 erosion control measures. There would be negligible impacts from the Action Alternative and no  
6 impacts from the No-Action Alternative. Therefore, there would be no incremental cumulative  
7 impacts on water resources when added to other past, ongoing, or future planned projects at NSF  
8 Indian Head.

## 9 **Stormwater**

10 The Proposed Action (Preferred Alternative) would construct approximately 28,380 SF (2,637 SM))  
11 of impervious surfaces in the subwatersheds and an additional 9,800 SF (910 SM) of pervious parking  
12 area around the proposed laboratory. The Action Alternative and the No-Action Alternative would  
13 not increase the amount of impervious surfaces. Two other recent or planned actions involve  
14 construction of impervious surfaces in this vicinity. For the additions to Building 1576 (described  
15 above), approximately 3,000 SF (279 SM) of impervious surfaces would be constructed.

16 The minor increase in stormwater runoff associated with the Building 1576 additions would drain to  
17 the northeast into a different subwatershed than the proposed laboratory. The Proposed Action  
18 design would also incorporate LID measures in adherence with state and federal stormwater  
19 requirements to ensure that stormwater quality and quantity is managed in a manner that would  
20 minimize the potential for cumulative impacts. Other ongoing and planned future projects at the  
21 installation would also adhere to the same stormwater management requirements. Therefore, no  
22 significant cumulative impacts would result from the Proposed Action in combination with any of the  
23 past, present, or foreseeable future projects at NSF Indian Head.

## 24 **Geology, Topography, and Soils**

25 Geology, topography, and soils impacts are site specific and are not affected by cumulative  
26 development of the area, except where soil erosion may contribute to the degradation of water  
27 quality. Construction of the proposed laboratory and demolition of Building 600 under the Proposed  
28 Action (Preferred Alternative) and renovation of Building 600 under the Action Alternative would  
29 require disturbance of soil, grading, and some minor changes to topography. These impacts would  
30 be minimized through the use of sediment and erosion control measures and would not  
31 incrementally result in significant cumulative impacts. Any potentially contaminated soil that would  
32 be removed by Building 600 would be handled and disposed in accordance with all required federal,  
33 state, and local regulations, and therefore no cumulative effects are expected from potential soil  
34 contamination.

## 35 **Air Quality**

36 The annual emissions from the Proposed Action (Preferred Alternative) and Action Alternative  
37 would be below *de minimis* levels, and a Record of Non-applicability was prepared (see Appendix B).  
38 The other projects considered in the cumulative impacts analysis would also be expected to be below  
39 *de minimis* levels, based on the comparative size of the projects to others (for example, the proposed  
40 actions analyzed in the EIS for Medical Facilities and University Expansion at Naval Support Activity  
41 Bethesda, MD). By demonstrating that the Proposed Action and Action Alternative emissions are  
42 below stated *de minimis* levels or thresholds, the EA also demonstrates that cumulative air quality  
43 effects would not result in significant incremental effects.

1 In February 2010 the CEQ proposed draft guidance on how federal agencies should evaluate the  
2 effects of climate change and GHG emissions for NEPA documentation (CEQ 2010). The CEQ does not  
3 provide a reference point as an indicator of a level of GHG emissions that may significantly affect the  
4 quality of the human environment. The draft guidance proposes a threshold of 25,000 tons of CO<sub>2e</sub>  
5 above which agencies should quantify GHG emissions (CO<sub>2</sub> emissions associated with net U.S. sources  
6 in 2011 was approximately 5,797 million metric tons). According to the EPA's Greenhouse Gas  
7 Equivalencies Calculator ([www.epa.gov/cleanenergy/energy-resources/calculator.html](http://www.epa.gov/cleanenergy/energy-resources/calculator.html)), 25,000  
8 tons of CO<sub>2e</sub> is equivalent to the annual emissions of 19,298 passenger vehicles, or the annual energy  
9 consumption of 8,364 residential homes. Emissions of GHGs from project short-term projects would  
10 equate to minimal amounts of the Navy and U.S. inventory. As a result, they would not substantially  
11 contribute to global climate change nor would they produce significant cumulative impacts to global  
12 climate change.

### 13 **Solid and Hazardous Waste**

14 Minimal impacts would be associated with solid and hazardous waste from implementing the  
15 Proposed Action (Preferred Alternative) and Action Alternative. Demolition of Building 600 would  
16 generate waste that may contain asbestos-containing materials, lead piping, lead-based paint, PCBs,  
17 and mercury, and there may be explosive residue within the building. All demolition activities  
18 involving suspected hazardous materials would be performed in accordance with federal and state  
19 requirements and by certified contractors. The soils around Building 600 would be handled and  
20 disposed of according to the Final Record of Decision for the Lab Area and in accordance with all  
21 required safety protocols. Other projects considered in the analysis would not be expected to  
22 generate hazardous waste in quantities that would have an effect in combination with that likely to  
23 be generated under the Proposed Action or Action Alternative. As a result, there would be no  
24 significant cumulative impacts from solid or hazardous waste concerns.

### 25 **Land Use**

26 The Proposed Action (Preferred Alternative) would result in long-term, beneficial impacts on land  
27 use and land use compatibility on NSF Indian Head. The Proposed Action is consistent with the 2010  
28 NSF Indian Head Master Plan and would support NSF Indian Head's effort to consolidate  
29 organizations and functions more efficiently throughout the installation. This would enhance the  
30 efficiency of mission operations, encourage collaboration among personnel, and reduce  
31 transportation demands for energetics RDT&E personnel. It would also replace an aging, obsolescent  
32 building with contemporary laboratory facilities, promoting efficient mission operations into the  
33 future. Therefore, there would be no significant cumulative impacts from the Proposed Action. The  
34 Action Alternative and No-Action Alternative would not consolidate RDT&E operations and would  
35 not be consistent with the long-term goals of the 2010 NSF Indian Head Master Plan, but are not in  
36 direct conflict with any current land uses. These alternatives would, however, result in a minor  
37 adverse impact to land use planning due to the incompatibility with the 2010 Master Plan. Other  
38 planned future projects would be sited in areas with similar land use and would not cause adverse  
39 conflicts between land uses on the installation. There would be no impacts on the regional level from  
40 any major changes in land use on NSF Indian Head. Overall, significant cumulative impacts to land  
41 use are not anticipated.

### 42 **Finding of Cumulative Impacts Analysis**

43 Based on the above information, the Proposed Action (Preferred Alternative) is not expected to  
44 contribute to any potentially significant cumulative impacts when viewed in combination with other  
45 past, present, and reasonably foreseeable future actions at NSF Indian Head.

1 The potential cumulative impacts under the Alternative Action and No-Action Alternative would be  
2 similar to, or less than, those under the Proposed Action (Preferred Alternative) and therefore would  
3 not contribute to any potentially significant cumulative impacts.

#### 4 **3.12 Summary**

5 The Proposed Action (Preferred Alternative) and Alternative Actions would result in temporary  
6 impacts from construction, renovation, and demolition activities. In several areas, the Proposed and  
7 Alternative Actions would result in different types and extents of impacts, with the Proposed Action  
8 resulting in greater long-term benefits. The most noteworthy environmental consequences of the  
9 Proposed Action include tree clearing for the proposed laboratory, stormwater runoff from the  
10 proposed laboratory and associated parking lot, and the demolition of historic Building 600. The  
11 Alternative Action and No-Action Alternative would have lesser impacts on environmental resource  
12 areas overall, but would not consolidate RDT&E operations and would be inconsistent with the 2010  
13 NSF Indian Head Master Plan, resulting in minor adverse impacts to land use planning at NSF Indian  
14 Head.

15 The environmental consequences of the Proposed Action (Preferred Alternative), Alternative Action,  
16 and No-Action Alternative are summarized in Table 3-3.

17 Based on the extent of anticipated environmental impacts, a FONSI has been prepared and an EIS will  
18 not be required.

Table 3-3. Summary of Environmental Consequences

Environmental Area	Proposed Action (Preferred Alternative)	Alternative Action	No-Action Alternative
<b>Architectural Resources</b>	<p><b>Adverse impact (<i>adverse effect</i> under the National Historic Preservation Act [NHPA])</b> from the demolition of Building 600. The Navy would amend the Disposition of Excess Structures Memorandum of Agreement with the State Historic Preservation Office, the Maryland Historical Trust, to mitigate adverse impacts. Coordination with the MHT is ongoing.</p> <p>Minor impact (no adverse effect under the NHPA) due to the construction of the proposed laboratory adjacent to historic steam lines.</p>	<p><b>Adverse impact (<i>adverse effect</i> under the NHPA)</b> due to extensive renovations to Building 600. The Navy would amend the Disposition of Excess Structures Memorandum of Agreement with the MHT. Coordination with the MHT is ongoing.</p>	<b>No impact (no adverse effect under NHPA).</b>
<b>Archeological Resources</b>	<b>No impact.</b> Minimal potential for presence of archeological resources.	<b>Same</b> as the Proposed Action.	<b>No impact.</b>
<b>Biological Resources (Vegetation, Wildlife, RT&amp;E species)</b>	<p><b>Minor adverse impact</b> due to clearing of approximately 32,962 square feet (SF) (3,062 square meters [SM]) of forest. Wildlife utilizing the proposed site for the new laboratory would need to relocate, but no long-term impacts on wildlife populations, migratory birds, or forest interior dwelling species (FIDS) are anticipated.</p>	<b>Negligible adverse impact</b> due to renovation of Building 600. Disturbed areas would be revegetated and landscaped. No impact to migratory birds or FIDS.	<b>No impact.</b>
	<p><b>Minor improvement</b> due to restoration of the Building 600 footprint (13,924 SF, 1,293 SM) to a vegetated condition.</p>		
	<p><b>No impact on</b> federally-listed rare, threatened or endangered (RT&amp;E) species or bald eagle nesting activities.</p>	<b>Same</b> as the Proposed Action.	<b>Same</b> as the Proposed Action.

**Table 3-3. Summary of Environmental Consequences**

<b>Environmental Area</b>	<b>Proposed Action (Preferred Alternative)</b>	<b>Alternative Action</b>	<b>No-Action Alternative</b>
<b>Surface Waters</b>	<b>Negligible, short-term, adverse impacts on surface water.</b> The Navy would adhere to Maryland Department of the Environment (MDE) approved sediment and erosion control measures and stormwater management plans to minimize likelihood of sediment transport and water quality impacts. Temporary wastewater from decontamination of Building 600 during demolition would be collected, sampled, and disposed of properly.	<b>Similar impact</b> as the Proposed Action due to earth disturbance at Building 600 during renovations, although there would be less ground disturbance than for the Proposed Action. The Navy would implement sediment and erosion control measures to minimize likelihood of sediment transport and water quality impacts.	<b>No impact.</b>
<b>Groundwater</b>	<b>Minor reduction</b> in demand due to improved water efficiency and the elimination of leaks.	<b>Same</b> as the Proposed Action.	<b>No change</b> in groundwater demand.
<b>Wetlands</b>	<b>No impact.</b> No wetlands in project vicinity.	<b>Same</b> as the Proposed Action.	<b>Same</b> as the Proposed Action.
<b>Stormwater</b>	<p><b>Minor impact</b> due to construction of 28,380 SF (2,637 SM) of impervious surfaces. The design would incorporate sediment and erosion control and low impact development measures, which would minimize stormwater runoff.</p> <p><b>Minor improvement</b> due to restoration of the Building 600 footprint to a vegetated condition. This would result in reduced generation of stormwater runoff within the subwatershed and an approximate net reduction of 13,924 SF (1,293 SM) of impervious surface area across the installation.</p>	<b>Negligible impact</b> due to earth disturbance at Building 600 during renovations. The Navy would implement sediment and erosion control measures during renovation to minimize stormwater runoff.	<b>No impact.</b>

**Table 3-3. Summary of Environmental Consequences**

<b>Environmental Area</b>	<b>Proposed Action (Preferred Alternative)</b>	<b>Alternative Action</b>	<b>No-Action Alternative</b>
<b>Coastal Zone</b>	<b>Minor impact</b> due to tree clearing and earth disturbance. The Navy would incorporate low impact development measures and would replant trees if required based on the Coastal Zone Management Act federal consistency determination review process. Consistent with the enforceable policies of the state's Coastal Zone Management Program.	<b>Negligible impact.</b>	<b>No impact.</b>
<b>Geology, Topography and Soils</b>	No unique geological features exist within the project area and <b>no impacts to geological resources.</b> <b>Negligible impact to topography</b> due to grading for the proposed laboratory. <b>Minimal impact to soils</b> due to construction and demolition activities. The Navy would adhere to MDE-approved sediment and erosion control plans to minimize the alteration or loss of topsoil. Potentially contaminated soil from Environmental Restoration (ER) sites at Building 600 would be handled properly in accordance with federal and state regulations and the Final Record of Decision for the Lab Area.	No unique geological features exist within the project area and <b>no impacts to geological resources.</b> <b>Negligible impact to topography</b> from earth disturbance during renovations. <b>Minimal impact</b> due to renovation activities. Potentially contaminated soil from ER sites at Building 600 would be handled properly in accordance with federal and state regulations and the Final Record of Decision for the Lab Area.	<b>No impact.</b>
<b>Air Quality</b>	<b>Minimal impact</b> due to equipment installation (e.g., generator) and temporary emissions from construction and demolition activities.	<b>Minimal impact</b> due to temporary emissions from renovation activities.	<b>No impact.</b>
	<b>No impact</b> on the types or quantities of process-related waste.	<b>Same</b> as the Proposed Action.	<b>Same</b> as the Proposed Action.

Table 3-3. Summary of Environmental Consequences

Environmental Area	Proposed Action (Preferred Alternative)	Alternative Action	No-Action Alternative
<b>Infrastructure and Utilities (Solid and Hazardous Waste)</b>	<b>Minor improvement</b> to waste management due to improved fire protection, which would reduce the frequency of explosive waste removal from the laboratory.	<b>Same</b> as the Proposed Action.	<b>No impact.</b>
	<b>Temporary generation</b> of hazardous waste due to the demolition of Building 600 and disposal of debris that may contain asbestos, lead, polychlorinated biphenyls, and/or mercury.	<b>Temporary generation</b> of the same types of material waste as the Proposed Action.	<b>No generation</b> of demolition-related waste.
<b>Health and Safety</b>	<b>Moderate improvement</b> to occupational safety due to replacement of Building 600 with a modern laboratory that addresses health and safety requirements.	<b>Moderate improvement</b> to occupational safety due to correction of health and safety deficiencies at Building 600.	<b>No impact.</b>
	<b>Temporary handling</b> of hazardous materials and potentially contaminated soil during demolition of Building 600. Safety procedures would be adhered to in accordance with federal and state regulations.	<b>Same</b> as the Proposed Action.	<b>No impact.</b>
<b>Explosives Safety</b>	<p><b>Moderate improvement</b> due to the inclusion of fire protection, reduction in the transport of energetic materials to once per week instead of daily, and consolidation of explosives operations. Since explosives could be stored overnight in the new facility, there would be an improvement in potential hazards associated with handling of explosives.</p> <p><b>No impact</b> from the demolition of Building 600. All demolition activities would be conducted in accordance with the requirements of NAVSEA OP5 and NOSSAINST 8020.15D.</p>	<p><b>Same</b> as the Proposed Action <b>except</b> explosives operations would not be consolidated.</p> <p><b>No impact</b> from the renovation of Building 600. All renovation activities would be conducted in accordance with the requirements of NAVSEA OP5 and NOSSAINST 8020.15D.</p>	<b>Minor, long-term, adverse impact</b> since explosives operations would not be consolidated.

**Table 3-3. Summary of Environmental Consequences**

Environmental Area	Proposed Action (Preferred Alternative)	Alternative Action	No-Action Alternative
<b>Land Use</b>	<b>Consistent</b> with the 2010 NSF Indian Head Master Plan RDT&E consolidation goals and would support the Navy’s effort to distribute organizations and functions more efficiently.	<b>Not consistent</b> with the 2010 NSF Indian Head Master Plan and would not contribute to the Navy’s consolidation goals. Minor, adverse impact to land use planning.	<b>Same</b> as the Alternative Action.

1

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**APPENDIX A:**

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**Agency Correspondence**

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## United States Department of the Interior

U.S. Fish & Wildlife Service  
Chesapeake Bay Field Office  
177 Admiral Cochrane Drive  
Annapolis, MD 21401  
410/573 4575



### Online Certification Letter

Today's date:

Project:

Dear Applicant for online certification:

Thank you for using the U.S. Fish and Wildlife Service (Service) Chesapeake Bay Field Office online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the referenced project in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

Based on this information and in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), we certify that except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project area. Therefore, no Biological Assessment or further section 7 consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For additional information on threatened or endangered species in Maryland, you should contact the Maryland Wildlife and Heritage Division at (410) 260-8573. For information in Delaware you should contact the Delaware Division of Fish and Wildlife,

Wildlife Species Conservation and Research Program at (302) 735-8658. For information in the District of Columbia, you should contact the National Park Service at (202) 339-8309.

The U.S. Fish and Wildlife Service also works with other Federal agencies and states to minimize loss of wetlands, reduce impacts to fish and migratory birds, including bald eagles, and restore habitat for wildlife. Information on these conservation issues and how development projects can avoid affecting these resources can be found on our website ([www.fws.gov/chesapeakebay](http://www.fws.gov/chesapeakebay))

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further assistance, please contact Chesapeake Bay Field Office Threatened and Endangered Species program at (410) 573-4527.

Sincerely,

Genevieve LaRouche  
Field Supervisor



U.S. Fish and Wildlife Service

## Trust Resources List

**This resource list is to be used for planning purposes only — it is not an official species list.**

**Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:**

**Chesapeake Bay Ecological Services Field Office**  
177 ADMIRAL COCHRANE DRIVE  
ANNAPOLIS, MD 21401  
(410) 573-4599

***Project Name:***

MILCON P-190



U.S. Fish and Wildlife Service

## Trust Resources List

### ***Project Location Map:***



### ***Project Counties:***

Charles, MD

### ***Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):***

MULTIPOLYGON (((-77.2070138 38.5669396, -77.2061555 38.5675692, -77.2054474 38.5663029, -77.2066597 38.5659589, -77.2070138 38.5669396)))

### ***Project Type:***

Development



U.S. Fish and Wildlife Service

## Trust Resources List

### ***Endangered Species Act Species List ([USFWS Endangered Species Program](#)).***

*There are no listed species found within the vicinity of your project.*

### **Critical habitats within your project area:**

*There are no critical habitats within your project area.*

### ***FWS National Wildlife Refuges ([USFWS National Wildlife Refuges Program](#)).***

*There are no refuges found within the vicinity of your project.*

### ***FWS Migratory Birds ([USFWS Migratory Bird Program](#)).***

The protection of birds is regulated by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. For more information regarding these Acts see: <http://www.fws.gov/migratorybirds/RegulationsandPolicies.html>.

All project proponents are responsible for complying with the appropriate regulations protecting birds when planning and developing a project. To meet these conservation obligations, proponents should identify potential or existing project-related impacts to migratory birds and their habitat and develop and implement conservation measures that avoid, minimize, or compensate for these impacts. The Service's Birds of Conservation Concern (2008) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

For information about Birds of Conservation Concern, go to:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BCC.html>.

To search and view summaries of year-round bird occurrence data within your project area, go to the Avian Knowledge Network Histogram Tool links in the Bird Conservation Tools section at: <http://www.fws.gov/migratorybirds/CCMB2.htm>.

For information about conservation measures that help avoid or minimize impacts to birds, please visit:

<http://www.fws.gov/migratorybirds/CCMB2.htm>.



## Trust Resources List

### Migratory birds of concern that may be affected by your project:

There are **9** birds on your Migratory birds of concern list. The underlying data layers used to generate the migratory bird list of concern will continue to be updated regularly as new and better information is obtained. User feedback is one method of identifying any needed improvements. Therefore, users are encouraged to submit comments about any questions regarding species ranges (e.g., a bird on the USFWS BCC list you know does not occur in the specified location appears on the list, or a BCC species that you know does occur there is not appearing on the list). Comments should be sent to [the ECOS Help Desk](#).

Species Name	Bird of Conservation Concern (BCC)	Species Profile	Seasonal Occurrence in Project Area
American Oystercatcher ( <i>Haematopus palliatus</i> )	Yes	<a href="#">species info</a>	Year-round
Bald eagle ( <i>Haliaeetus leucocephalus</i> )	Yes	<a href="#">species info</a>	Year-round
Black-billed Cuckoo ( <i>Coccyzus erythrophthalmus</i> )	Yes	<a href="#">species info</a>	Breeding
Kentucky Warbler ( <i>Oporornis formosus</i> )	Yes	<a href="#">species info</a>	Breeding
Purple Sandpiper ( <i>Calidris maritima</i> )	Yes	<a href="#">species info</a>	Wintering
Rusty Blackbird ( <i>Euphagus carolinus</i> )	Yes	<a href="#">species info</a>	Wintering
Short-billed Dowitcher ( <i>Limnodromus griseus</i> )	Yes	<a href="#">species info</a>	Wintering
Wood Thrush ( <i>Hylocichla mustelina</i> )	Yes	<a href="#">species info</a>	Breeding
Worm eating Warbler ( <i>Helmitheros vermivorum</i> )	Yes	<a href="#">species info</a>	Breeding

### ***NWI Wetlands ([USFWS National Wetlands Inventory](#))***

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to



## Trust Resources List

wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

### **Data Limitations, Exclusions and Precautions**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery and/or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

**Exclusions** - Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

**Precautions** - Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

*IPaC is unable to display wetland information at this time.*



U.S. Fish and Wildlife Service

## Trust Resources List



**DEPARTMENT OF THE NAVY**  
NAVAL SUPPORT ACTIVITY SOUTH POTOMAC  
6509 SAMPSON ROAD, SUITE 217  
DAHLGREN, VIRGINIA 22448-5108

IN REPLY REFER TO

5090  
Ser PRSI42SB/138

DEC 23 2014

Ms. Lori Byrne  
Environmental Review Coordinator  
Wildlife and Heritage Service  
Maryland Department of Natural Resources  
Tawes State Office Building  
580 Taylor Avenue  
Annapolis, MD 21401

Subj: ENVIRONMENTAL ASSESSMENT FOR ADVANCED ENERGETICS  
RESEARCH LABORATORY COMPLEX, PHASE 2 (MILCON P-190)  
FOR NAVAL SUPPORT FACILITY INDIAN HEAD, INDIAN HEAD,  
MARYLAND

Dear Ms. Byrne:

The Department of the Navy is preparing an Environmental Assessment (EA) to evaluate the potential effects of the proposed construction and operation of Phase 2 (Military Construction Project 190 [MILCON P-190]) of the Advanced Energetics Research Laboratory Complex at Naval Support Facility Indian Head (NSFIH), Maryland (Enclosure 1).

This EA is being prepared pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 United States Code 4331 et seq.), the Council on Environmental Quality regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), the Navy's NEPA procedures contained in 32 CFR Part 775), the Navy's Environmental and Natural Resources Program Manual, Chief of Naval Operations Instruction (OPNAVINST 5090.1C CH-1, Chapter 5), and the Supplemental Environmental Planning Policy, 23 September 2004.

The purpose of the proposed construction and operation of Phase 2 (MILCON P-190) of the Advanced Energetics Research Laboratory Complex is to provide a modern, reliable, and efficient research laboratory facility at NSFIH to allow the Naval Surface Warfare Center Indian Head Explosive Ordnance Disposal Technology Division (NAVSURFWARCENIHEODTECHDIV) to

discover and exploit new and advanced energetic materials to support the warfighter.

The proposed action is described in detail below. The Phase 2 (MILCON P-190) of the Advanced Energetics Research Laboratory Complex construction and operation comprises the following components:

a. Construction of a 21,030 SF, two-story research laboratory facility with conductive floors and chemical storage space for approximately 60 NAVSURFWARCENIHEODTECHDIV scientists and engineers (Enclosure 2);

b. Construction of 17,159 SF of parking and sidewalks and a back-up generator (Enclosure 2);

c. Consolidation of personnel and operations from building 600 and ancillary facilities, including building 438 and building 922;

d. Demolition of building 600 (Enclosure 3), and;

e. Restoration of building 600 footprint to a vegetated condition (Enclosure 3).

The construction of the proposed new research laboratory and associated infrastructure will clear approximately 32,962 SF of forest. In addition to the forested area, the new laboratory and associated new parking will require the removal of approximately 13,652 SF of urban landscaping (grass) and young, woody vegetation (mostly saplings). Temporarily disturbed areas not converted to impervious surface would be replanted with an approved seed mix from the sediment and erosion control plan. Following demolition of building 600, an approved seed mix would also be used to stabilize this site.

The EA analyzes an alternative to the construction of Phase 2 (MILCON P-190) of the Advanced Energetics Research Laboratory Complex. This alternative consists of renovation of the existing building 600. Activities would be primarily contained within the existing building footprint, resulting in minimal temporary impacts to vegetation during construction. Disturbed areas will be revegetated after completion of renovation.

The EA will also evaluate the No-Action Alternative as required by NEPA. The No-Action Alternative describes the conditions at NSFIIH should the proposed action not occur and

also performs the important function of acting as an environmental baseline against which the environmental consequences of the action alternatives are measured. Under the No-Action Alternative, the construction of a new modern, reliable and efficient laboratory facility and associated infrastructure, consolidation of personnel and operations, or demolition of building 600 would not occur.

The purpose of this correspondence is to request a list of state listed species that may be adversely affected by this proposed project and to solicit Maryland Department of Natural Resources concerns related to these species. Based upon a review of available information and habitat types present at the proposed action location, we do not believe there would be any effects to federally-listed rare, threatened, or endangered species.

A letter is also being sent to the United States Fish and Wildlife Service to solicit its input.

Please direct all written correspondence to:

ATTN: Director, Environmental Division  
Department of Navy  
NAVFAC Washington, PWD South Potomac  
3972 Ward Road, Suite 101  
Indian Head, MD 20640-5157

If there are any comments or questions during your review, please contact Mr. Seth Berry at (301) 744-2273 or [seth.m.berry@navy.mil](mailto:seth.m.berry@navy.mil).

Sincerely,



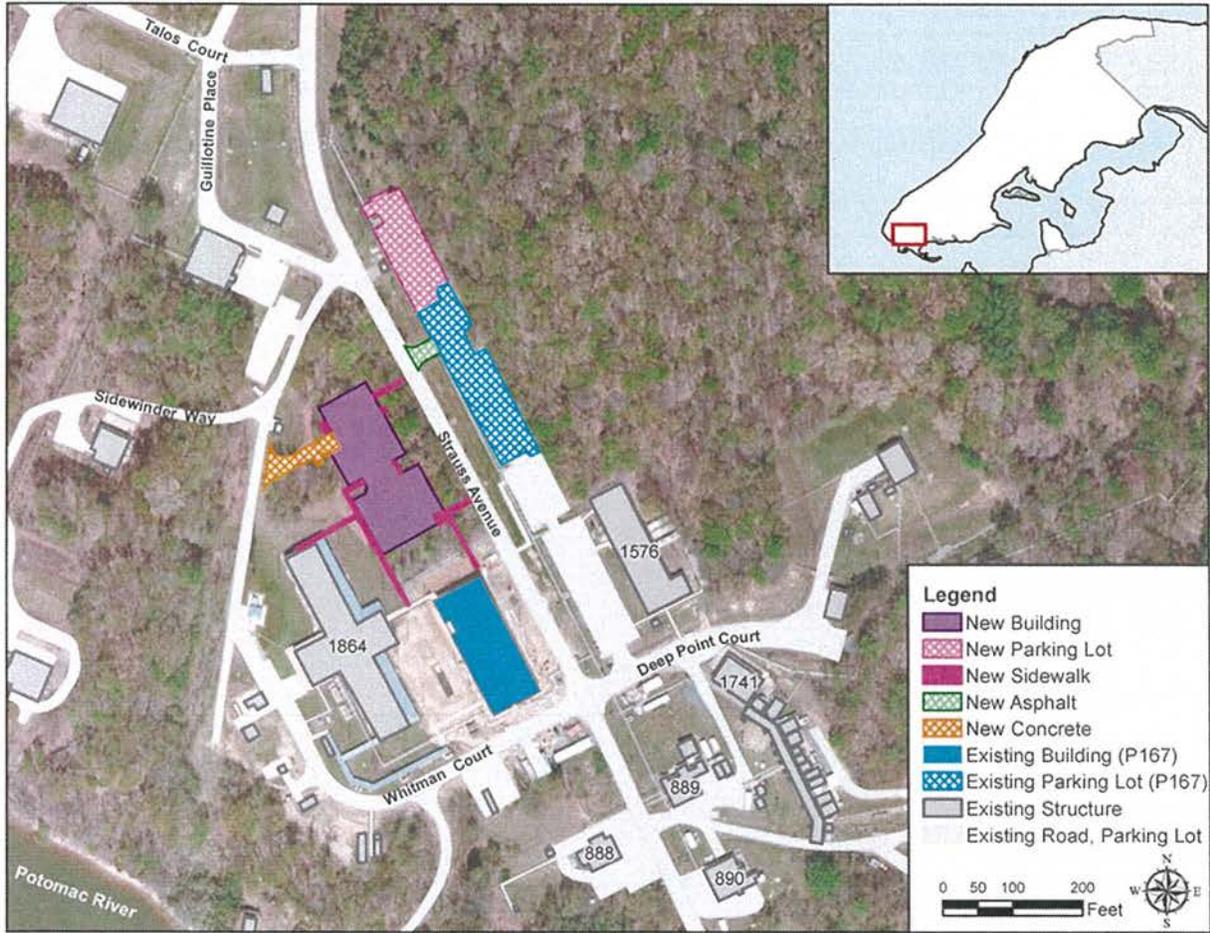
JEFFREY C. BOSSART  
By direction

Enclosures: (1) NSFIIH Regional Map  
(2) Location of MILCON P-190  
(3) Location of Building 600 Demolition

Enclosures 1: NSFIIH Regional Map



Enclosure 2: Location of MILCON P-190



Enclosure 3: Location of Building 600 Demolition





*Martin O'Malley, Governor*  
*Anthony G. Brown, Lt. Governor*  
*Joseph P. Gill, Secretary*  
*Frank W. Dawson III, Deputy Secretary*

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January 21, 2015

Jeffery Bossart  
Department of the Navy  
6509 Sampson Rd. Suite 217  
Dahlgren, VA 22448-5108

**RE: Environmental Review for EA for Advanced Energetics Research Laboratory Complex, Phase 2, MILCON P-190, for Naval Support Facility Indian Head, Charles County, MD.**

Dear Mr. Bossart:

The Wildlife and Heritage Service has determined that there are no State or Federal records for rare, threatened or endangered species within the boundaries of the project site as delineated. As a result, we have no specific comments or requirements pertaining to protection measures at this time. This statement should not be interpreted however as meaning that rare, threatened or endangered species are not in fact present. If appropriate habitat is available, certain species could be present without documentation because adequate surveys have not been conducted.

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

Sincerely,

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

ER# 2014.1955.ch





**DEPARTMENT OF THE NAVY**  
NAVAL SUPPORT ACTIVITY SOUTH POTOMAC  
6509 SAMPSON ROAD, SUITE 217  
DAHLGREN, VIRGINIA 22448-5108

IN REPLY REFER TO

5090  
Ser PRSI42SB/136  
DEC 19 2014

Elder A. Ghigiaerelli, Jr.  
Federal Consistency Coordinator  
Wetlands and Waterways Program  
Maryland Department of the Environment  
1800 Washington Boulevard, Suite 430  
Baltimore, Maryland 21230

Dear Mr. Ghigiaerelli:

In accordance with the Federal Coastal Zone Management Act (CZMA) of 1972, as amended, and the CZMA Memorandum of Understanding (MOU) between the State of Maryland and the United States Department of Defense, Naval Support Facility Indian Head (NSFIH) requests concurrence with the Federal Consistency Determination for the construction of a new energetics research laboratory and demolition of the existing Research, Development, Testing and Evaluation (RDT&E) laboratory, building 600.

As required by the MOU, enclosures (1) through (3) provide the proposed project description, site location and the basis for this Federal Consistency Determination as relevant to the enforceable coastal policies.

NSFIH Head requests the Maryland Department of the Environment's concurrence with its Federal Consistency Determination for activities associated with the demolition of the existing RDT&E laboratory and construction of the new energetics laboratory. NSFIH will presume concurrence if a response is not received within 60 days.

Please direct all written correspondence to:

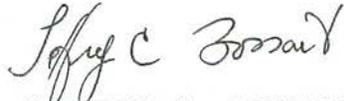
ATTN: Director, Environmental Division  
Department of the Navy  
NAVFAC Washington, PWD South Potomac  
3972 Ward Road, Suite 101  
Indian Head, MD 20640-5157

5090

Ser PRSI42SB/136

If there are any comments or questions concerning this matter, please contact Mr. Seth Berry at (301) 744-2273.

Sincerely,



JEFFREY C. BOSSART

By direction

Enclosures: (1) Proposed Project Description  
(2) Site Location, Picture and Design (combined)  
(3) Basis of Determination

Copy to: Maryland Department of Natural Resources (J. Abe)

## Enclosures 1: Project Description and Site Location

The Proposed Action would construct Phase 2 (MILCON P190) of the Advanced Energetics Research Laboratory Complex at NSF Indian Head in the southern portion of Cornwallis Neck (Figure 1). The Proposed Action would construct the new facility adjacent to Building 1864, which is known as the Whitman Laboratory (Figure 2).

The 21,030-square foot (SF), two-story facility would include modern, consolidated RDT&E laboratory space with conductive floors and chemical storage space for approximately 60 scientists and engineers. Personnel and operations would be consolidated from Building 600 and ancillary facilities, including Building 438 and Building 922. The Proposed Action would provide 17,150 SF of parking, sidewalks, a loading dock, and a back-up generator. The approximately 9,800 SF expanded parking area would utilize pervious pavement techniques. The complex would be constructed to accommodate explosive materials and would likely include a catenary lightning protection system. The Proposed Action would remove approximately 32,962 SF of forest to construct the new facility. Once the new facility is constructed and occupied, Building 600 would be demolished (Figure 3).

Sustainable design principles would be included in the design and construction of the facility and supporting infrastructure in accordance with EO 13423 and other laws and EOs. The facility would meet Leadership in Energy and Environmental Design (LEED) ratings and comply with the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007 (EISA). Low impact development (LID) would also be included in the design and construction of the facility, as appropriate.

ENCLOSURE (i)

Enclosure 2: Site Location, Picture, and Design

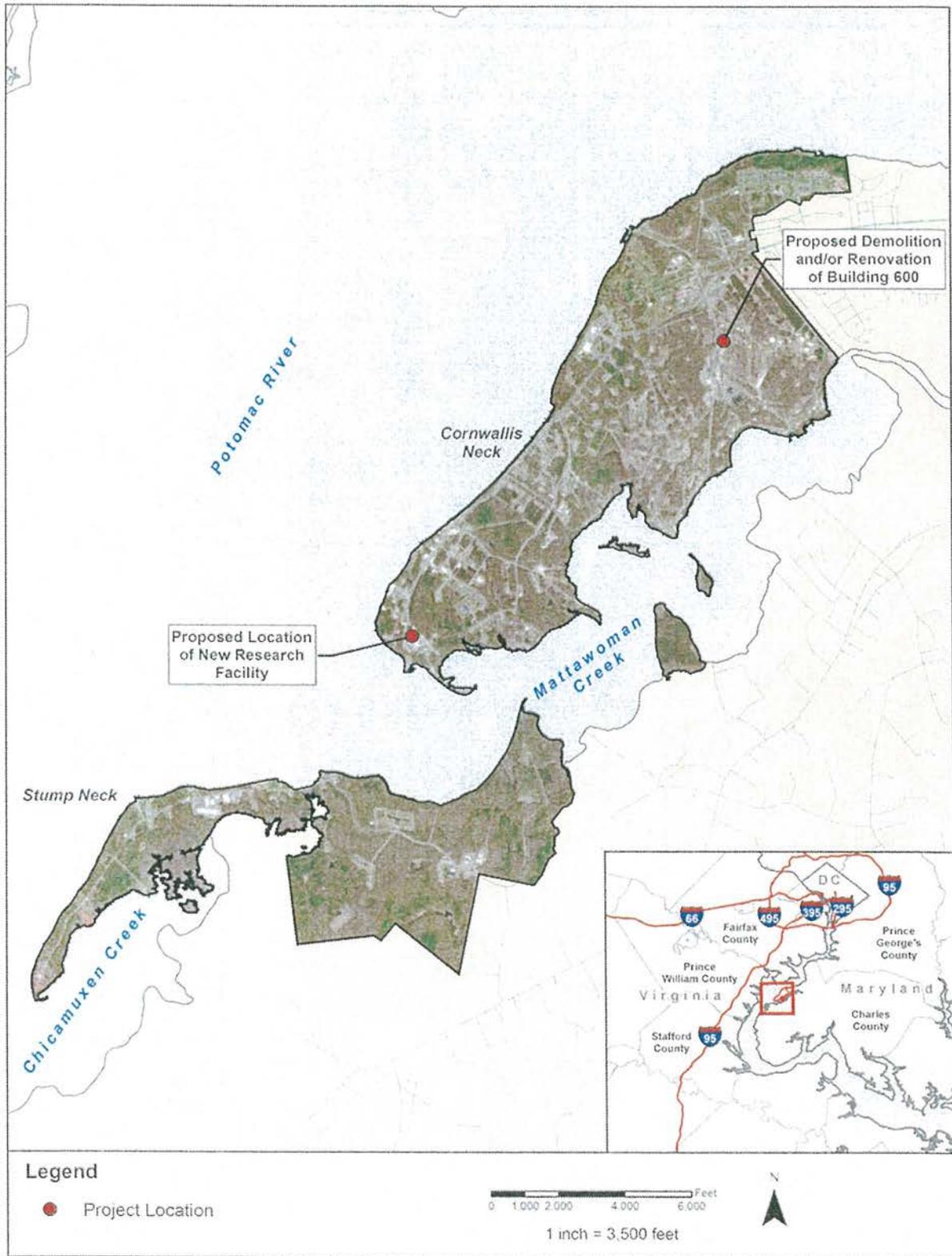


Figure 1: General Location Map

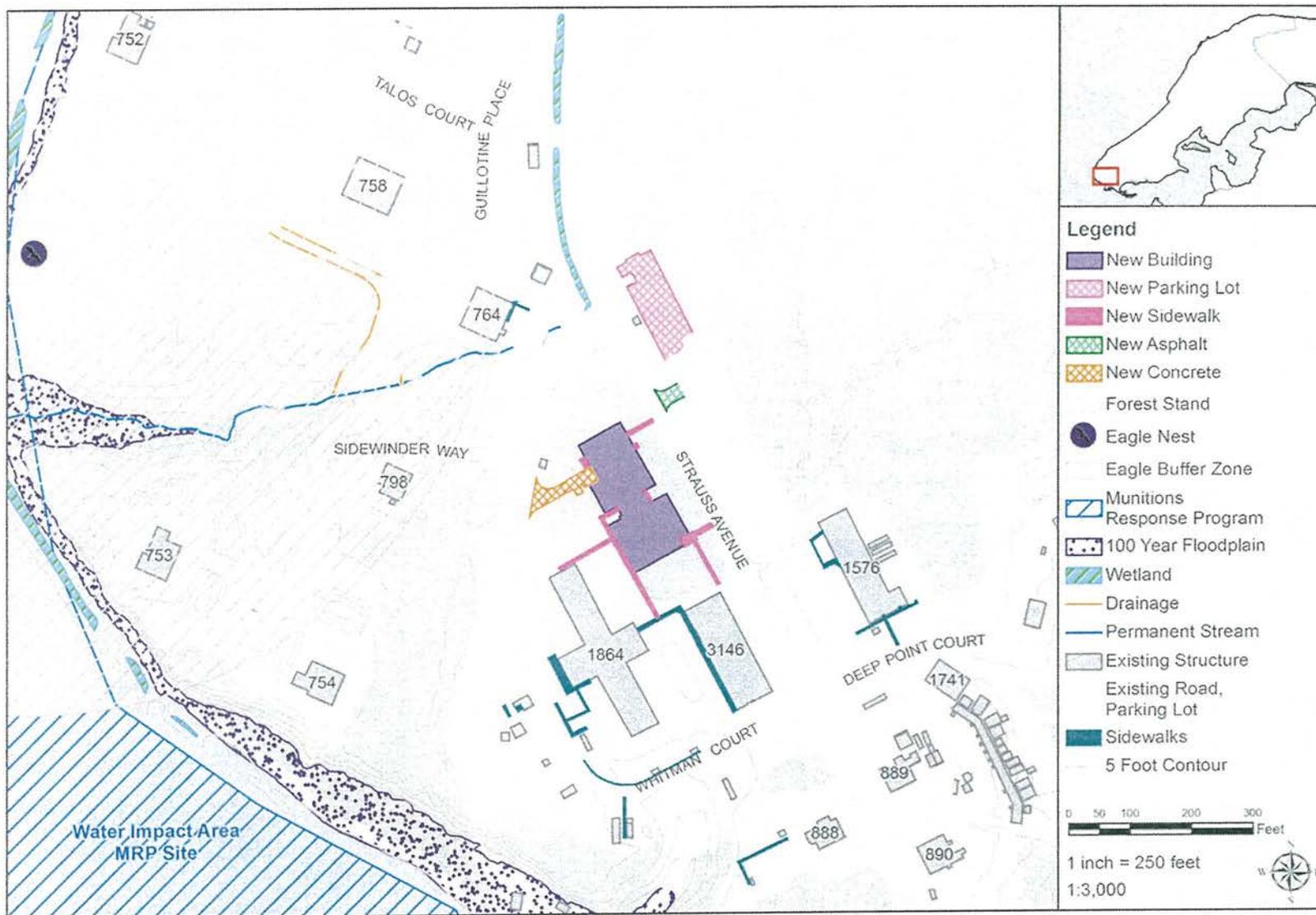


Figure 2: Proposed Site for New Construction

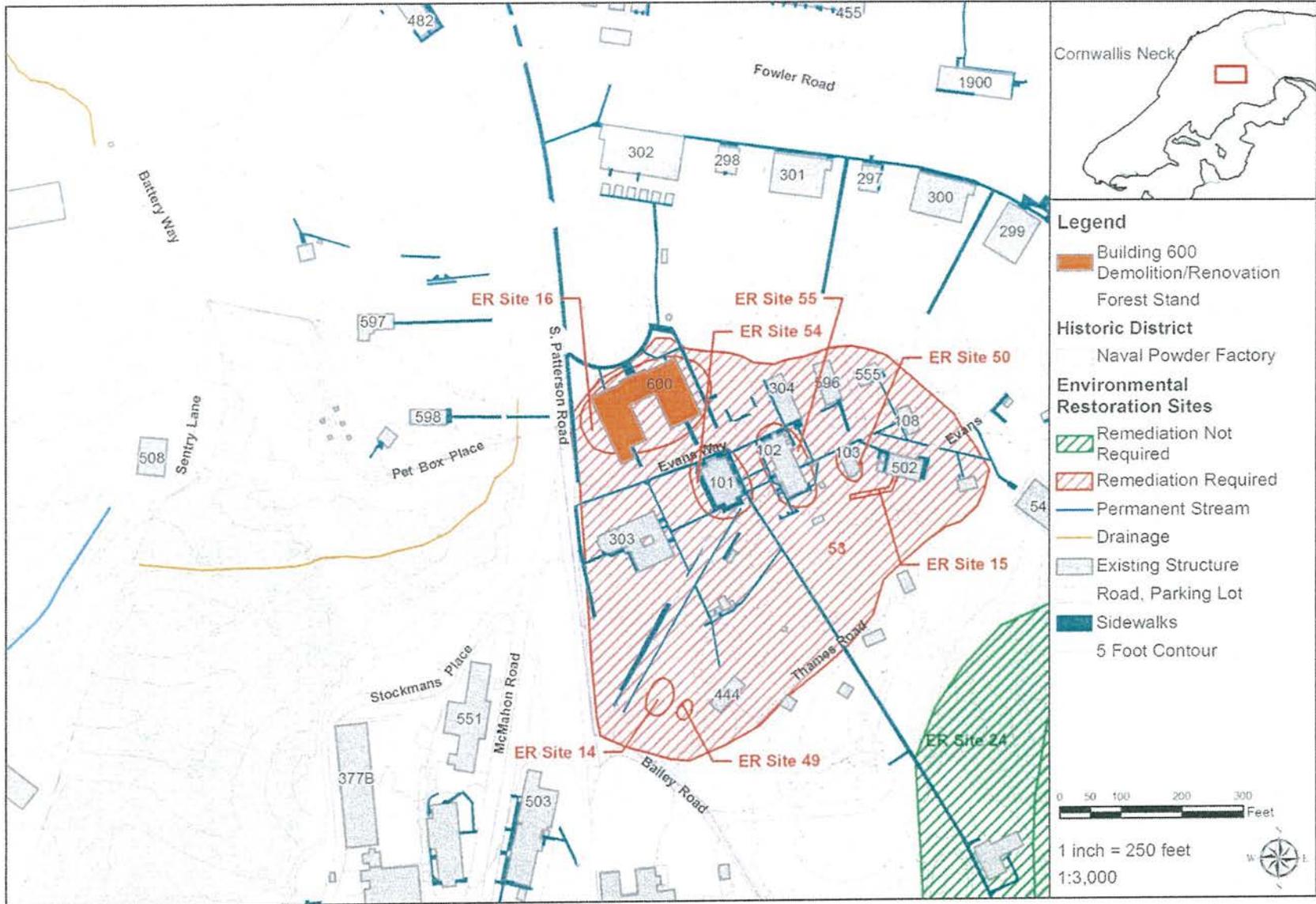


Figure 3: Location of Building 600

Enclosure 3: Basis of Determination - Advanced Energetics Research Laboratory Complex,  
Phase 2 (MILCON P190), NSF Indian Head

	Enforceable Policy	Relevant to Project	Not Relevant to Project	Impacts to Resource
General Policy				
	Core Policies	X		There would be negligible, temporary impacts to air quality from fugitive dust and construction vehicle emissions during construction and demolition and the Navy would apply for a permit to construct from Maryland Department of the Environment. Although there would be temporary noise impacts during demolition and construction, these impacts would not exceed thresholds or violate any noise ordinances. Sediment and erosion control measures would prevent impacts from stormwater runoff. No land use impacts other than a minor change of undeveloped land to developed land; the project is consistent with the land use of energetics operations as designated by the NSF Indian Head Master Plan.
	Water Quality	X		No new discharges would be associated with the project. A sediment and erosion control plan and associated measures

	Enforceable Policy	Relevant to Project	Not Relevant to Project	Impacts to Resource
				would mitigate impacts from construction and environmental site design. A stormwater management plan and associated low impact development techniques would mitigate potential impacts from increased stormwater following construction. Although there are discharges of stormwater, process wastewater, and non-contact cooling water, the Navy has permits from Maryland Department of the Environment to limit these discharges and protect the water quality of the Potomac River and Mattawoman Creek.
	Flood Hazards		X	Project activities would not take place within the 100-year floodplain. There would be no flooding hazards and no impact to floodplains.
<b>Coastal Resources</b>				
	The Chesapeake and Atlantic Coastal Bays Critical Area	X		Although no critical area is designated on federal government property, the project would require soil disturbance and tree clearing within the 1,000-foot shoreline buffer. A sediment and erosion control plan and best management

	Enforceable Policy	Relevant to Project	Not Relevant to Project	Impacts to Resource
				practices would prevent sediment loading to surface waters. Stormwater management measures would minimize impacts from runoff. There would be no impact to streams, floodplains, or the riparian buffer. The Building 600 footprint area would be revegetated after demolition.
	Tidal Wetlands		X	No tidal wetlands within 100 feet of the project. Stormwater and erosion and sediment control plans would be developed and implemented thereby preventing indirect effects on surface and ground water quality, habitat, and aquatic ecosystems.
	Non-tidal Wetlands		X	No non-tidal wetlands within 25 feet of the project. Stormwater and erosion and sediment control plans would be developed and implemented thereby preventing indirect effects on surface and ground water quality, habitat, and aquatic ecosystems.
	Forests	X		Approximately 32,962 square feet of mature hardwood forest and saplings would be removed during project construction.
	Historical and Archaeological Sites	X		The demolition of Building 600, a contributing resource of the Indian Head Naval Powder Factory Historic District would have

	Enforceable Policy	Relevant to Project	Not Relevant to Project	Impacts to Resource
				adverse impacts on historic architectural resources. However, the Navy has coordinated with the Maryland Historical Trust (MHT), the State Historic Preservation Office (SHPO) and would pursue an amendment to the Disposition of Excess Structures Memorandum of Agreement (MOA) to minimize or mitigate these adverse impacts. There would be no impacts on archaeological sites.
	Living Aquatic Resources		X	No in-stream work would take place. Indirect impacts to surface waters and aquatic species during construction would be avoided through the implementation of stormwater and erosion and sediment control plans and measures. There would be no impact on fisheries, riparian forest buffers, or migratory fish species.
Coastal Uses				
	Mineral Extraction		X	
	Electrical Generation and Transmission		X	There would be no new electrical generation activities. The project would connect to the existing electrical transmission lines at the site.
	Tidal Shore		X	

	Enforceable Policy	Relevant to Project	Not Relevant to Project	Impacts to Resource
	Erosion Control			
	Oil and Natural Gas Facilities		X	
	Dredging and Disposal of Dredged Material		X	
	Navigation		X	
	Transportation		X	
	Agriculture		X	
	Development	X		The construction and demolition activities would not impact water quality. A sediment and erosion control plan would be implemented and low impact development practices and other control measures applied to prevent alteration to water quality. All utilities needs would be accommodated by the existing infrastructure at the site.
	Sewage Treatment	X		The project would connect to the existing sewage disposal infrastructure at the site and installation of low flow fixtures in the new laboratory would result in the generation of less sanitary wastewater. Additionally, the potential decontamination of Building 600 prior to demolition may generate

	Enforceable Policy	Relevant to Project	Not Relevant to Project	Impacts to Resource
				wastewater contaminated with mercury and energetic materials. This wastewater would be tested prior to release into the sewer system. If the level of contamination is too high, the wastewater will be transported off-site for disposal instead of into the sewer system.



**DEPARTMENT OF THE NAVY**  
NAVAL SUPPORT ACTIVITY SOUTH POTOMAC  
6509 SAMPSON ROAD, SUITE 217  
DAHLGREN, VIRGINIA 22448-5108

IN REPLY REFER TO

5090  
Ser PRSI42TW/39  
APR 28 2015

Ms. Amanda Apple  
Preservation Officer  
Maryland Historical Trust  
100 Community Place  
Crownsville, MD 21032-2023

Dear Ms. Apple:

Per 36 CFR 800.6(a) Naval Support Facility Indian Head (NSFIH), located in Charles County, Maryland requests to Section 106 consultation with the Maryland Historical Trust, State Historic Preservation Officer (SHPO) regarding the proposed Military Construction Project 190 (MILCON P190) Advanced Energetics Research Laboratory Complex, Phase 2.

The undertaking would provide a modern, reliable and efficient facility enabling the Naval Surface Warfare Center Indian Head Explosive Ordnance Disposal Technology Division (NSWCIHEODTD) to discover and exploit new and advanced energetic materials. The undertaking will have an adverse effect on Building 600, a contributing element to the Naval Powder Factory Historic District (CH491). Documentation required under 36 CFR 800.11(e) is provided in enclosure (1).

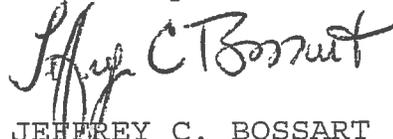
In summary, the Navy requests concurrence that 1) the undertaking will have an adverse effect on the Naval Powder Factory Historic District; 2) the previously submitted Historic American Engineering Record (HAER) report for the Naval Powder Factory Historic District is sufficient mitigation for the adverse effect; and 3) amending attachment B of the Memorandum of Agreement between Commandant, Naval District Washington, Commanding Officer, Naval Support Activity South Potomac and the Maryland State Historic Preservation Officer for the Disposition of Excess Structures at Naval Support Facility Indian Head, Indian Head, Maryland, September 2010 to include Building 600 and meet the requirements of Sections 101.b.3.I and 106 of the National Historic Preservation Act.

Please mail all correspondence to:

ATTN: Director, Environmental Division  
Department of Navy  
NAVFAC Washington, PWD South Potomac  
3972 Ward Road, Suite 101  
Indian Head, MD 20640-5157

We look forward to continuous communication and consultation on this matter. The point-of-contact for this project will be Mr. Tommy Wright at (301) 744-2260 or thomas.a.wright@navy.mil.

Sincerely,



JEFFREY C. BOSSART  
By direction

Enclosures: (1) Project Description, Alternatives, and Mitigation

Copy to: NAVFACWASH (J. Darsie)

## Project Description, Alternatives, and Mitigation

Description of Undertaking: The proposed undertaking is to construct a 21,030-square-foot (1,954 square-meter), two-story energetics research laboratory and associated infrastructure including a parking lot, sidewalks, and emergency generator in the southern portion of NSFIH (attachment 1). The Area of Potential Effect (APE) includes the Naval Surface Warfare Center Indian Head Explosive Ordnance Disposal Technology Division (NSWCIEODTD) Building 600 (attachment 2). This building serves as the main laboratory for the Navy's Research, Development, Testing and Evaluation (RDT&E) of energetics.

Identification of Historic Properties and Affected Historic Properties: National Historic Preservation Act Section 110 surveys have been conducted on nearly all buildings constructed before 1970 at NSFIH. The Naval Powder Factory Historic District (CH-491) was found eligible for the National Register in 1996 (attachment 3). The district was found to be eligible under Criterion A as the first major chemical powder factory operated by the Navy and as an important supplier of smokeless powder in World War I and World War II. It is also eligible under Criterion C for its industrial buildings that were designed to house specific machinery and processes. The original nomination form evaluated buildings constructed before 1938. An amendment to the nomination in 1998 evaluated an additional 61 buildings constructed between 1938 and 1945, adding an additional 22 contributing and 39 noncontributing resources.

Building 600 was identified as a contributing resource in the historic district as part of the 1998 amendment. Although the building has undergone some changes, it retains sufficient integrity for inclusion in the historic district. Constructed in 1945, Building 600 is a large, two-story, U-shaped, common bond brick building with exposed basement. The building is sited facing north off of Patterson Road (attachment 4). The building is a two-and-one-half story steel and concrete structure with brick facing, steel framed 3x3 and 2x4 pane windows. The building, measuring 102 long by 153 feet wide, was designed by the Department of Navy Bureau of Yards and Docks. A unique feature is the ability of the interior walls to be moved allowing for the expansion of laboratory space depending upon the research needs. The north elevation

ENCLOSURE (1)

features a three-bay plan with a protruding center bay that is highlighted by a center entry door that is accessed by concrete steps and protected by a flat roofed porch. Center entry doors are also visible on the other two bays. A decorative section of brick headers located between the first and second story windows highlights each elevation.

A concrete belt course is located directly above the second story windows. Between the belt course and the roof line are metal louvered ventilation windows which vary in number on each elevation. A center entry metal door is visible on the south elevations of each section.

Attached to the south elevation of the west wing is a one-story, shed roof, common bond brick addition with two, fixed-pane windows on the west elevation. A single center entry metal door with a single, fixed pane window are located on the south elevation of both wings. Portable air conditioning window units occupy a majority of the windows (attachment 4).

Building 600 was built as the Research and Development and supported three major divisions: Research; Engineering Development; and, Ballistic Performance. Building 600 was established to replace the original Chemical Laboratory (Building 101). Although Building 101 served as the main laboratory associated with issues relating to powder production until the mid-1980's, work in Building 600 focused on high explosives, propellants, and related ordnance materials. It was constructed to accommodate the expanded research mission of the installation and its expanded role in energetics and ordnance development during the Cold War.

In 2005, NSFIIH conducted an intensive-level architectural survey to determine National Register eligibility of buildings which included the proposed construction site for the new laboratory. The study (*Historical and Architectural Investigation of 1950's Era Industrial Areas and Miscellaneous Buildings Indian Head Division, Naval Surface Warfare Center, Indian Head, Charles County, MD*) evaluated buildings greater than 50 years old. The buildings were found not to have the integrity and significance necessary to be eligible for the National Register, and no further work was recommended. The remaining buildings in the area are less than 50 years old and are not eligible for the National Register. Maryland Historical Trust concurred with this determination on February 10, 2005.

The Goddard Power Plant and Steam Lines were found eligible for the National Register in 2011. In addition to the power plant itself, the resource includes the network of above and below ground steam lines that provided steam, heat and, in places, supported compressed air piping. The Goddard Power Plant and Steam Lines are eligible under Criteria A and C for their significant association with industrial processes at NSFIH that contributed to the research, development, and production of weapons ammunition. Steam lines are found in most areas of NSFIH, including along the east side of Strauss Avenue across the street from the proposed construction site of the new research laboratory.

The site of the proposed new building underwent Phase I archaeological survey in 2008 (Phase I Archeological Survey for BRACON P002V and MILCON P167 At Naval Support Facility, Indian Head, Charles County, Maryland). No archaeological sites were found and NSFIH received concurrence from the Maryland Historical Trust on June 4, 2008.

Analysis of Effects: The proposed undertaking will have an adverse effect on the Naval Powder Factory Historic District due to the demolition of Building 600. The proposed undertaking will have no effect on the Goddard Power Plant and Steam Lines because the undertaking will not alter their association with industrial processes or their engineering and design.

Alternatives Considered: The Navy considered a No-Action Alternative. The No-Action Alternative would continue with ongoing repairs and maintenance of Building 600. Under this alternative, Building 600 would still be in violation of various building codes, not allow for overnight storage of explosives, or improve its long-term suitability for energetics research. RDT&E operations would remain in Building 600 and ancillary facilities including Building 438 and Building 922. The No-Action Alternative would not provide a modern, reliable, efficient RDT&E facility, and as a result, is considered undesirable.

The Navy also considered leased facilities. However, working with energetics materials poses certain risks. Buildings suitable for this type of operations require a level of security and explosives safety that is not available for lease through commercial sources for buildings. In addition,

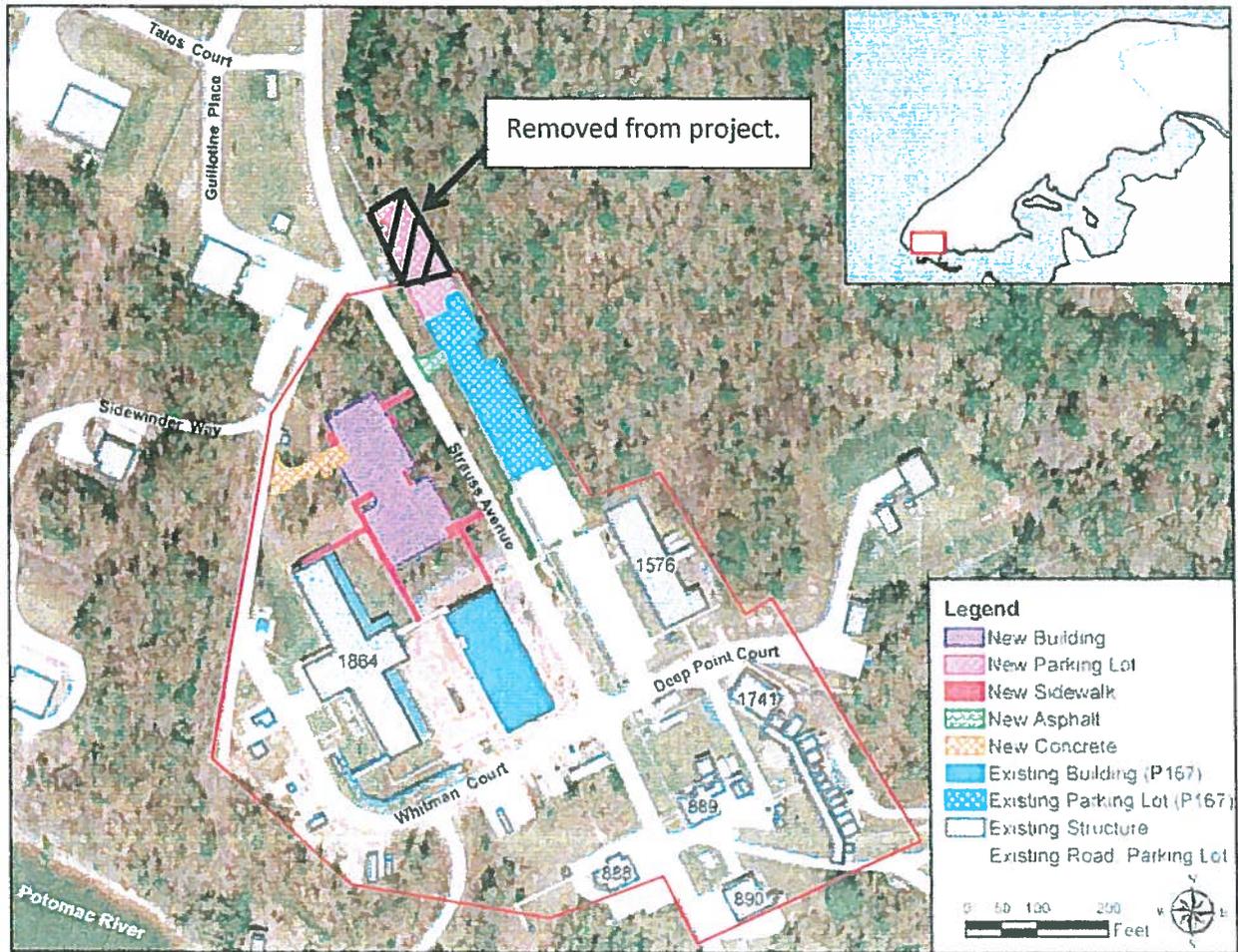
leasing a facility offsite would hinder collaboration between research groups based at NSFIH.

Finally, the Navy considered renovation of other existing facilities. In addition to requiring costly upgrades to many facilities, this alternative would not consolidate RDT&E operations in a single location.

The Navy evaluated re-use opportunities for Building 600 as required by the National Historic Preservation Act (NHPA), OPNAV Instruction 5090.1D, and UFC\_1\_200\_02. However, the extent of renovations combined with the explosive and hazardous contamination render the building undesirable.

Proposed Mitigation: Naval District Washington (NDW) has an existing Memorandum of Agreement (MOA) with the Maryland SHPO for the Disposition of Excess Structures at Naval Support Facility Indian Head, Indian Head, Maryland, dated September 2010. This MOA addressed the demolition of 69 historic buildings at NSFIH and were listed in Attachment B of the MOA. Building 600 was not identified for demolition and therefore not included in this attachment. Stipulation A.1 required the development of a Historic American Engineering Record (HAER) report for the Naval Powder Factory Historic District. NSFIH submitted the final HAER report to the Maryland SHPO on September 9, 2014. The HAER report included documentation of Building 600. The Navy believes the previously-completed documentation is sufficient mitigation for the demolition of Building 600.

Proposed Location MILCON P190 located at Naval Support Facility Indian Head, Indian Head, MD





Map of  
**Building 600 APE**



Document Generated from GeoReadiness Explorer



Building 600

Naval Powder Factory  
Historic District

Sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Geomapping, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

**Building 600 and the Naval Powder Factory Historic District**  
**Naval Support Facility Indian Head**

- Legend**
- Building 600
  - Naval Powder Factory Historic District
  - Installation Area



NOTE: This map was created using data from the NSA South Potomac GeoReadiness database.

## Building 600 Images



Main entrance of Building 600. Northwest elevation looking southeast.



View of rear of Building 600 with showing west and east wings. Southeast elevation looking northwest.



Northeast elevation of east wing. View east looking west.



Northwest elevation. North looking South.



Building 600. Southwest view facing South Patterson Road. South looking North.

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**APPENDIX B:**

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**Draft Applicability Analysis and Record of Non-Applicability**

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## AIR QUALITY APPLICABILITY ANALYSIS

1  
2 The Clean Air Act requires federal actions in air pollutant nonattainment or maintenance areas to  
3 conform to the applicable State Implementation Plan. The State Implementation Plan is designed to  
4 achieve or maintain an attainment designation of air pollutants as defined by the National Ambient  
5 Air Quality Standards. The regulations governing this requirement are found in 40 Code of Federal  
6 Regulations (CFR) Part 93, also known as the General Conformity Rule (GCR), which applies to federal  
7 actions occurring in regions designated as nonattainment or areas subject to maintenance plans. The  
8 threshold (*de minimis*) emission rates have been established for actions with the potential to have  
9 significant air quality impacts that are not otherwise exempt. In addition, exemptions to the GCR have  
10 been established for actions that are clearly below *de minimis* thresholds. As specified in 40 CFR  
11 93.153(c)(2), Conformity Determination regulations for federal actions shall not apply for “actions  
12 which would result in no emissions increase or an increase in emissions that is clearly *de minimis*.”  
13 Pursuant to the requirements of the GCR, this document was prepared to determine the applicability  
14 of the GCR to the proposed action.

15 **Proposed Action.** The Proposed Action is to construct and operate Phase 2 (Military Construction  
16 [MILCON] P190) of the Advanced Energetics Research Laboratory Complex at Naval Support Facility  
17 Indian Head (NSF Indian Head), Maryland. The Proposed Action (Preferred Alternative) would  
18 construct a 21,030-square-foot (1,954 square-meter), two-story energetics research laboratory and  
19 associated infrastructure including a parking lot, sidewalks, and emergency generator in the  
20 southern portion of Cornwallis Neck, the mainside area of NSF Indian Head. Building 600, the primary  
21 existing Research, Development, Testing, and Evaluation facility at NSF Indian Head would be  
22 demolished and the area would be revegetated. Personnel and operations from Building 600 and  
23 several ancillary facilities at NSF Indian Head would be consolidated in the new facility. The  
24 Alternative Action would extensively renovate Building 600 to meet required building codes and  
25 make the building a more suitable facility for energetics research. Under the No-Action Alternative,  
26 NSF Indian Head would not construct a new research facility or demolish Building 600.

27 **Relationship to Applicable Nonattainment or Maintenance Areas.** The U.S. Environmental  
28 Protection Agency designated the Metropolitan Washington Region, Air Quality Control Region  
29 (AQCR) 47, which includes Charles County, as in marginal nonattainment for O<sub>3</sub> and in moderate  
30 nonattainment for the PM<sub>2.5</sub>. In addition, AQCR 47 is in the O<sub>3</sub> transport region, which is the  
31 northeastern section of the United States, where O<sub>3</sub> is transported by air currents into regions from  
32 other areas of the United States. Charles County is an attainment area for CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, and Pb  
33 (40 CFR 81.321).

34 The *de minimis* values established in 40 CFR 93.153 (b) are:

- 35
- 36 • NO<sub>x</sub>: 100 tons/year
  - 37 • VOCs: 50 tons/year
  - 38 • SO<sub>2</sub>: 100 tons/year
  - 39 • PM<sub>2.5</sub>: 100 tons/year
  - O<sub>3</sub>: 50 tons/year\*

40 \*The Washington DC-MD-VA AQCR is located in an ozone transport region and the Ozone threshold  
41 is reduced to 50 tons/year.

42 **Emissions, Assumptions and Results.** The Proposed Action would have the potential to minimally  
43 affect air emissions due to equipment installation and temporary emissions from demolition and  
44 construction activities. The Proposed Action would include the installation of an emergency

1 generator. If the capacity of the generator engine exceeds 373 kilowatts, the Navy would apply for,  
2 and obtain, a permit to construct (PTC) from the Maryland Department of the Environment prior to  
3 installation. The proposed laboratory would have fume hoods, similar to those currently in place at  
4 Building 600. The Navy would evaluate potential toxic air pollutant emissions and, if necessary,  
5 obtain a PTC and apply best available control technology for toxics to ensure that emissions do not  
6 present a concern to public health. The fume hoods and vents would remain listed as insignificant  
7 activities per the installation's Title V Permit.

8 Although emissions would result from equipment installation and construction activities, projects of  
9 a similar size and scope have fallen well below the *de minimis* thresholds for General Conformity Rule  
10 applicability. To demonstrate that construction emissions would be less than the *de minimis*  
11 thresholds, the Proposed Action was compared to a larger project for which detailed construction  
12 emissions analysis was performed. The Medical Facilities Development and University Expansion  
13 Final Environmental Impact Statement (EIS) at Naval Support Activity Bethesda (June 2013)  
14 included 122,700 square feet (SF) (11,399 square meters [SM]) of building demolitions, construction  
15 of a 573,000-SF (53,233-SM) medical building, a 500-space parking garage, a 341,000-SF (31,680-  
16 SM) education/research facility and 144,000-SF (13,378-SM) associated above-ground parking  
17 garage at Uniformed Services University of the Health Sciences. In comparison, the Proposed Action  
18 involves a 21,030-SF (1,954-SM) building and approximately 30 parking spaces. Therefore, based on  
19 the difference in the size of projects, it can be concluded that the construction for the Proposed Action  
20 would be substantially less than the emissions for actions analyzed in the Naval Support Activity  
21 Bethesda EIS.

22 The EIS peak construction emissions are summarized below in Table B-1 and are well below the  
23 applicable *de minimis* thresholds. The construction emissions of the Proposed Action analyzed in this  
24 Environmental Assessment would be at least an order of magnitude lower and also below the *de*  
25 *minimis* thresholds.

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**Table B-1. NSA Bethesda Final EIS, Peak Construction Year Emissions**

	<i>de minimis</i> threshold	Bethesda - Medical Facilities w/underground parking	Bethesda-University Expansion	Total Peak Construction Year emissions
NO <sub>x</sub>	100	18.98	7.80	26.79
VOCs	50	5.22	1.09	6.31
PM <sub>2.5</sub>	100	2.01	0.70	2.71
SO <sub>2</sub>	100	0.54	0.23	0.77

2

3 In addition, the Proposed Action would not result in any new research testing activities, but rather  
4 would consolidate existing operations. Therefore, the Proposed Action would not require a  
5 conformity determination and would not conflict with regional efforts to reach attainment status for  
6 all criteria pollutants. A Record of Non-applicability has been prepared (see next section).

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1                                   **GENERAL CONFORMITY – RECORD OF NON-APPLICABILITY**

2   Project/Action

3   Name: Environmental Assessment for Advanced Energetics Research Laboratory Complex, Phase 2  
4   (MILCON P190), Naval Support Facility Indian Head, Maryland, Naval Support Activity South  
5   Potomac, Naval District Washington

6   Project/Action

7   Point of Contact:       Mr. Jeffrey Bossart, Installation Environmental Program Director  
8                               Naval Support Activity South Potomac, Public Works Department  
9                               Naval Support Activity Indian Head

10   General Conformity under the Clean Air Act, Section 176 has been evaluated for the project described  
11   above according to the requirements of 40 CFR 93, Subpart B. The General Conformity Rule applies  
12   to federal actions occurring in regions designated as being in non-attainment for the National  
13   Ambient Air Quality Standards or attainment areas subject to maintenance plans (maintenance  
14   areas). Threshold (*de minimis*) rates of emissions have been established for federal actions with the  
15   potential to have significant air quality impacts. If a project/action located in an area designated as  
16   non-attainment exceeds these *de minimis* levels, a general conformity analysis is required. Charles  
17   County is designated as a marginal ozone (8-hour) non-attainment area in an ozone transport region  
18   and a moderate non-attainment area for PM<sub>2.5</sub>; thus, the NO<sub>x</sub>, VOC, PM<sub>2.5</sub>, and SO<sub>2</sub> thresholds apply.

19   A General Conformity Analysis of this project/action is not required because:

20   Total direct emissions from this project would include minor short-term effects from demolition and  
21   construction. Long-term emissions from the construction of a proposed laboratory would be similar  
22   to the existing emission from Building 600 and would include the continuation of existing boiler  
23   emissions and commuter vehicle trips similar to those currently generated. Emissions from slightly  
24   longer vehicle trips may increase emissions, but not significantly. These emissions would be less than  
25   the *de minimis* values.

26   The *de minimis* values established in 40 CFR 93.153 (b) are:

- 27       • NO<sub>x</sub>: 100 tons
- 28       • VOCs: 50 tons
- 29       • SO<sub>2</sub>: 100 tons
- 30       • PM<sub>2.5</sub>: 100 tons

31   Furthermore, the project/action is not considered regionally significant under 40 CFR 93.153 (i).

32   Charles County is in attainment for criteria pollutants NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, CO, and Pb and therefore these  
33   pollutants are not subject to conformity review.

1 Supporting documentation and emissions estimates:

2 (X) Are Included

3 (X) Appear in the NEPA Documentation

4 ( ) Other (Not Necessary)

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\_\_\_\_\_  
Jeffrey Bossart  
Installation Environmental Program Director

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