ENVIRONMENTAL ASSESSMENT
FOR
IMPLEMENTATION OF ENERGY CONSERVATION MEASURES
AT
NORFOLK NAVAL SHIPYARD, PORTSMOUTH, VIRGINIA

September 2019

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ABSTRACT

Designation:	**Environmental Assessment**
Title Of Proposed Action:	**Implementation Of Energy Conservation Measures**
Project Location:	**Norfolk Naval Shipyard, Portsmouth, Virginia**
Lead Agency For The EA:	**Department of the Navy**
Cooperating Agency:	**None**
Affected Region:	**Portsmouth, & Chesapeake Counties, Virginia**
Action Proponent:	**Commander, Norfolk Naval Shipyard**
Point Of Contact:	**Ms. Mary Stuck, NAVFAC PWD Portsmouth PRM4** **Norfolk Naval Shipyard** **Building 1500** **1500 Pennock Street** **Portsmouth, Virginia 23709**
eMail Address:	**Mary.Stuck@navy.mil**
Date:	**September 2019**

The Norfolk Naval Shipyard (NNSY), an installation of the United States (U.S.) Navy (hereinafter, jointly referred to as the Navy), has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA), as implemented by the Council on Environmental Quality (CEQ) Regulations and Navy regulations for implementing the NEPA. The Proposed Action would implement Energy Conservation Measures (ECM) through an award of an Energy Savings Performance Contract (ESPC) that would provide for infrastructure updates and improve energy efficiency of the NNSY Mainsite, Scott Center, Southgate, and St. Juliens Creek annexes to maintain reliable operations in support of mission requirements.

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EXECUTIVE SUMMARY

ES-1 Proposed Action:

The Navy proposes to implement Energy Conservation Measures (ECMs) through an award of an Energy Savings Performance Contract (ESPC) that would provide for infrastructure updates and improve energy efficiency of the Norfolk Naval Shipyard (NNSY) Mainsite, Scott Center, Southgate, and St. Juliens Creek annexes to maintain reliable operations in support of mission requirements (Figure ES-1).

ES-2 Purpose Of & Need For The Proposed Action:

The purpose of the Proposed Action is to reduce the Navy's energy use and increase energy security, strategic flexibility, and resource availability at NNSY Mainsite, the Navy's Scott Center, Southgate, and St. Juliens Creek annexes. The Proposed Action is needed to assist the Navy in meeting Federal policies, goals, and standards concerning energy security through enhancing resiliency and finding efficiencies by reducing energy and water use.

ES-3 Alternatives Considered:

In accordance with the Chief of Naval Operations (CNO) Shore Energy Management Return on Investment criteria, potential alternatives (i.e., ECMs) were evaluated against the following five screening factors: 1) total ownership costs must be minimized; 2) shore energy consumption must be minimized, 3) reliable energy must be provided to critical infrastructure, 4) regulatory compliance and stakeholder expectations must be achieved; and 5) enabling infrastructure must be developed.

Based on the evaluation of the five screening factors, the Navy determined that the Action Alternative would meet the purpose of and need for the Proposed Action. Under the Action Alternative, ECM 10 (Combined Heat and Power [CHP] Plant) and ECM 16 (Industrial Wastewater Treatment Plant [IWTP]) would be implemented and evaluated in detail in the Environmental Assessment (EA). Numerous other ECMs would also be implemented under the Action Alternative as part of an ESPC with the Navy. ECMs 8 and 14 would consist primarily of upgrading and installing efficient energy systems and fixtures within existing facilities to manage and reduce energy consumption. These independent ECMs have been Categorically Excluded (CatExed) from detailed analysis; however, they are addressed collectively and qualitatively and as part of the Cumulative Impacts discussion in the EA.

Under the No Action Alternative, the Navy would not implement ECMs through an ESPC at NNSY. As a result, no energy cost savings or needed infrastructure improvements would be realized. The No Action Alternative would not meet the purpose and need for the Proposed Action; however, the No Action Alternative is carried forward for analysis in this EA. The No Action Alternative will be used to analyze the consequences of not undertaking the Proposed Action and will serve to establish a comparative baseline for analysis.

ES-4 Summary Of Environmental Resources Evaluated In The EA:

Council on Environmental Quality (CEQ) regulations, National Environmental Policy Act (NEPA), and Navy instructions for implementing the NEPA, specify that an EA should address those resource areas potentially subject to impacts. In addition, the level of analysis should be commensurate with the anticipated level of environmental impact.

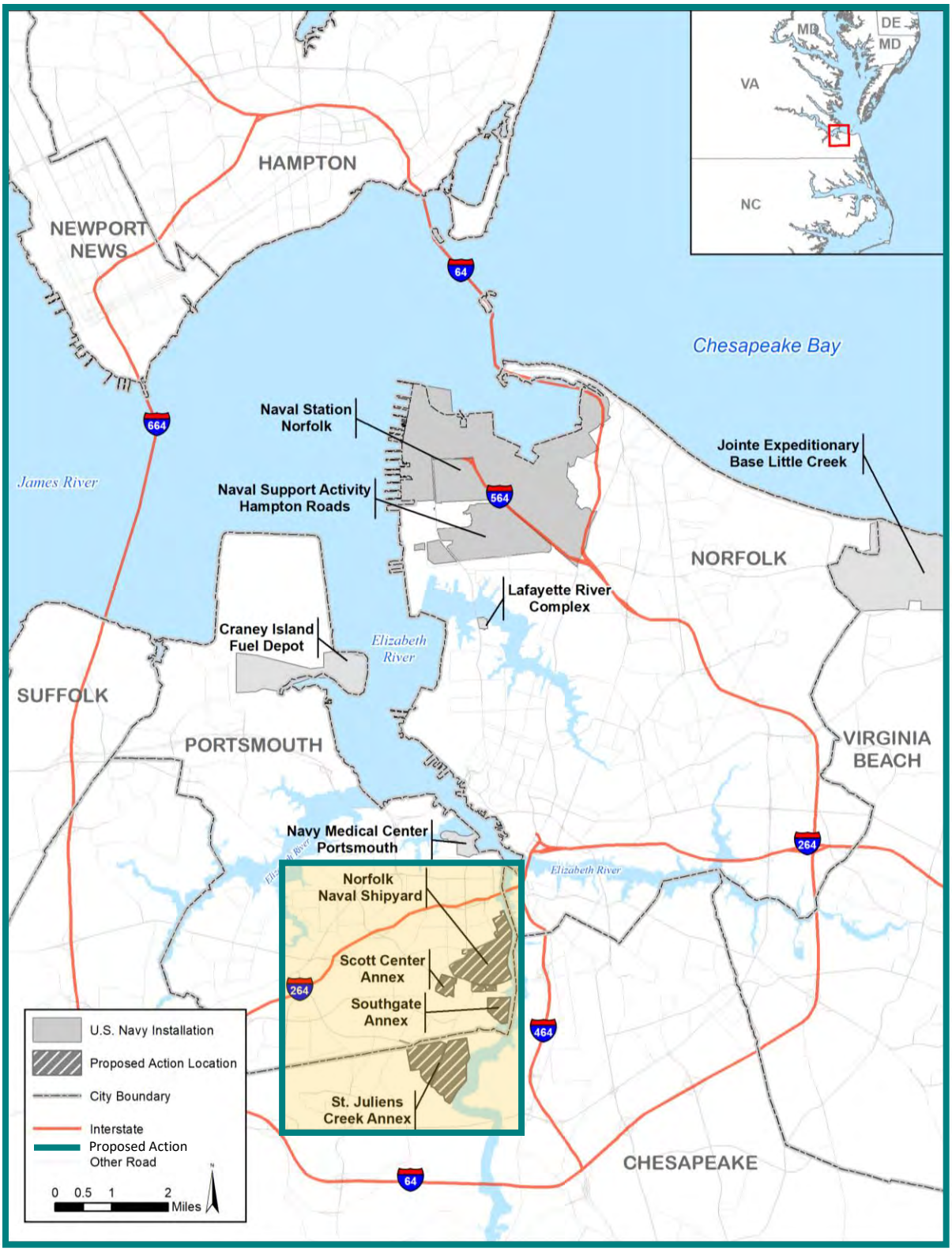

Figure ES-1: Location Of Proposed Action & Navy Installations In The Hampton Roads Region

The following resource areas have been addressed in this EA: air quality, water resources, cultural resources, visual resources, biological resources, infrastructure, hazardous materials and wastes, and environmental justice. Because potential impacts were considered to be negligible or nonexistent, the following resources were not evaluated in this EA: airspace, land use, noise, public health and safety, socioeconomics, and traffic and transportation.

ES-5 Summary Of Potential Environmental Consequences Of The Action Alternatives & Major Mitigating Actions:

Table ES.5-1 provides a summary of the potential impacts to the resources associated with each of the alternatives analyzed.

Table ES.5-1: Summary Of Potential Impacts To Resource Areas

Resource Area	*No Action Alternative*	*Action Alternative*
Air Quality	No change to existing emissions or sources beyond those considered under baseline conditions. NNSY would continue to operate under the existing Title V Operating Permit (No. TRO-60326).	Short-term impacts to air quality during the CHP Plant & IWTP construction phases; criteria pollutant emissions would be less than significant. The Title V permit would require major modification for the new stationary sources. Operation of the CHP Plant would result in a substantial increase in GHG emissions; the GHGs would be limited as much as possible through good combustion & work practices.
Water Resources	No change to water resources beyond baseline conditions. NNSY would continue to maintain their Storm Water Pollution Prevention Plan & implement best management practices to minimize pollutants that could contaminate the area waters.	No significant short-term, long-term, direct or indirect impacts to water resources from CHP Plant & IWTP construction or operational activities. IWTP treated effluent would continue to be discharged to the Southern Branch of the Elizabeth River in accordance with Virginia Pollutant Discharge Elimination System (VPDES) permit VA0005215.
Cultural Resources	No change to cultural resources beyond baseline conditions.	No significant impacts to cultural resources. There would be no adverse effect on the NNSY Historic District or the Norfolk & Portsmouth Belt Line Railroad Bridge, & no effect on any other known historic properties within the area of potential effects.
Visual Resources	No change to visual resources beyond baseline conditions.	No significant impact with implementing ECMs 10 & 16. The industrial setting at NNSY would not be affected by the construction or operation of the CHP Plant or IWTP, respectively.
Biological Resources	No change to biological (i.e., wildlife, vegetation, & threatened & endangered species) resources beyond baseline conditions.	There would be no significant direct or indirect impacts to biological resources. There would be no habitat loss from construction activities. The Action Alternative would have no effect on threatened & endangered species.

Table ES.5-1: Summary Of Potential Impacts To Resource Areas

Resource Area	*No Action Alternative*	*Action Alternative*
Infrastructure	No change to the existing infrastructure beyond baseline conditions. Implementation of the No Action Alternative could potentially have a minor negative impact on infrastructure at NNSY as the shipyard would continue to rely on outside utilities for electricity & steam, municipal water, & a dated IWTP.	No significant short-term impacts would be anticipated. Implementation of ECM 10 would allow NNSY to be self-reliant for electricity & steam in the event of a grid failure. Implementation of ECM 16 would increase wastewater treatment capacity & no longer require the purchase of approximately 300,000 gallons of municipal water per year. IWTP operations would continue during construction of the new IWTP. Implementation of ECMs 10 & 16 would be anticipated to have a long-term positive impact on infrastructure at NNSY.
Hazardous Materials & Wastes	No change associated with hazardous materials & wastes beyond those considered under baseline conditions.	No significant short- or long-term impacts anticipated to this resource. The handling of hazardous materials & wastes would continue to be conducted in accordance with Federal & State regulations & NNSY's standard operating procedures & permit VA1170024813.
Environmental Justice & Protection Of Children	No change to minority or low-income populations or children's environmental health & safety beyond baseline conditions.	No disproportionate impact to minority or low-income populations or to children's environmental health & safety.

ES-6 Public Involvement:

Regulations from the CEQ direct agencies to involve the public in preparing and implementing their NEPA procedures. The Navy published a Notice Of Preparation (NOP) to prepare an EA in the *Virginian Pilot* newspaper on May 26, 2019, which included instructions on how to acquire project information and provide comments. The Navy also provided the public with the Installation's public access website, which included a subject specific "Fact Sheet". The Fact Sheet briefly describes the Proposed Action. The Navy solicited public comments during a comment period from May 26, 2019 through June 07, 2019. No public comments were received during the comment period. Copies of the Public Involvement publications are contained in Appendix A.

Environmental Assessment For Implementation Of Energy Conservation Measures At Norfolk Naval Shipyard, Portsmouth, Virginia

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ABBREVIATIONS & ACRONYMS

Acronym	Definition
ACHP	Advisory Council on Historic Preservation
ACM	Asbestos Containing Material
ADA	Americans With Disabilities Act
AHPA	Archaeological and Historic Preservation Act
AIRFA	American Indian Religious Freedom Act
APE	Area of Potential Effects
ARPA	Archaeological Resources Protection Act of 1979
ATFP	Anti-Terrorism Force Protection
BACT	Best Available Control Technology
BGEPA	Bald and Golden Eagle Protection Act
BESS	Battery Energy Storage System
CAA	Clean Air Act
CatEx	Categorical Exclusion
CCD	Coastal Consistency Determination
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CHP	Combined Heat and Power
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_{2e}	Carbon Dioxide Equivalent
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DERP	Defense Environmental Restoration Program
DEQ	Department of Environmental Quality
DoD	Department of Defense
DOE	Department of Energy
EA	Environmental Assessment
ECM	Energy Conservation Measure

Acronym	Definition
EISA	Energy Independence and Security Act
EO	Executive Order
ESA	Endangered Species Act
ESCO	Energy Service Company
ESPC	Energy Saving Performance Contract
FY	Fiscal Year
GHG	Greenhouse Gas
HAP	Hazardous Air Pollutant
HVAC	Heating, Ventilation, & Air Conditioning
ICRMP	Integrated Cultural Resources Management Plan
IGA	Investment Grade Audit
IPaC	Information for Planning and Consultation
IRP	Installation Restoration Program
IWTP	Industrial Wastewater Treatment Plant
LBP	Lead Based Paint
LUC	Land Use Control
MBTA	Migratory Bird Treaty Act
MCS	Micro - Grid Control System
NHPA	National Historic Preservation Act
MIDLANT	Mid-Atlantic
MMPA	Marine Mammal Protection Act
MW	Megawatt
MWH	Megawatt Hour
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NAVSEA	Naval Sea Systems Command
NAVFAC	Naval Facilities Engineering Command
Navy	U.S. Department of the Navy
NECPA	National Energy Conservation Policy Act

Acronym	Definition
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NNSY	Norfolk Naval Shipyard
NOA	Notice Of Availability
NO_2	Nitrogen Dioxide
NO_X	Nitrogen Oxide
NOP	Notice Of Preparation
NRHP	National Register of Historic Places
NSA	Naval Support Activity
O_2	Oxygen
O_3	Ozone
OPNAVINST	Office of the Chief of Naval Operations Instruction
OSHA	Occupational Safety & Health Administration
PAH	Polycyclic Aromatic Hydrocarbon
Pb	Lead
PCB	Polychlorinated Biphenyls
$PM_{2.5}$	Particulate Matter, Less Than Or Equal To 2.5 Microns In Diameter
PM_{10}	Particulate Matter, Less Than Or Equal To 10 Microns In Diameter
POV	Privately Owned Vehicle
ppm	Parts Per Million
PSD	Prevention of Significant Deterioration
PWD	Public Works Department
RCRA	Resource Conservation and Recovery Act
SHPO	State Historic Preservation Officer
SO_2	Sulfur Dioxide
TPY	Tons Per Year
TSCA	Toxic Substances Control Act
U.S.	United States
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish & Wildlife Service
VOC	Volatile Organic Compound
VPDES	Virginia Pollutant Discharge Elimination System

1 PURPOSE OF & NEED FOR THE PROPOSED ACTION

1.1 Introduction:

Norfolk Naval Shipyard (NNSY), an Installation of the United States (U.S.) Navy (hereinafter, jointly referred to as the Navy), proposes to implement Energy Conservation Measures (ECMs) through an Energy Savings Performance Contract (ESPC).

Under the Proposed Action, ECMs would be implemented within the NNSY Mainsite, and the following shipyard annexes: Scott Center Annex, Southgate Annex (contiguous), and St. Juliens Creek Annex (non - contiguous). The ECMs would consist of construction of a Combined Heat And Power Plant; installation of a micro - grid control system and Battery Energy Storage System (BESS); replacement of an Industrial Wastewater Treatment Plant; and Heating, Ventilation, And Air Conditioning (HVAC) system upgrades, and lighting improvements. The ECMs would be owned and operated by the Navy, but, installed, and maintained by an Energy Service Company (ESCO), through an award of an ESPC.

The Navy has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA), as implemented by the Council on Environmental Quality (CEQ) Regulations and Navy regulations for implementing NEPA. This EA evaluates the potential environmental impacts of implementing specified ECMs under an ESPC at the Navy's NNSY Mainsite, Scott Center, Southgate, and St. Juliens Creek annexes.

1.2 Background:

The National Energy Conservation Policy Act of 1978 (NECPA) provides legislative authority for Federal agencies to enter into an ESPC with an ESCO. The ESCO provides its expertise to identify, evaluate, and implement ECMs at a Federal facility in accordance with the Federal agency mission and the U.S. Department of Energy (DOE) requirements under applicable laws and regulations. The costs to construct, install, and maintain the ECMs are incurred by the ESCO. As the ECMs result in cost savings to the Federal agency over the term of the contract, these savings are used to return payment to the ESCO. Additional information on ESPCs is available on the DOE Office of Energy, Efficiency, and Renewable Energy website (DOE, 2017).

In October 2009, the Secretary of the Navy set goals to improve energy security, increase energy independence, and reduce the reliance on petroleum by increasing the use of alternative energy (Navy, 2009a). These goals include:

- **Increase Alternative Energy Ashore:** By 2020, the Navy will produce at least 50 percent of shore-based energy requirements from alternative sources; 50 percent of Navy installations will be net-zero.
- **Increase Alternative Energy Use Navy - Wide:** By 2020, 50 percent of all Navy energy consumption will come from alternative sources.

Each region and each installation was required to build an energy plan to help achieve these (and related) goals. Leaders and planners considered the 50 percent level as a minimum "going - in" target for their energy plans while net-zero remained the full goal (Navy, 2012a). The principal means of achieving the 50 percent alternative energy goal was through the "1 Gigawatt of Renewable Energy" initiative. The initiative required the Navy to bring one gigawatt of renewable energy into procurement by the end of 2020 and integrate renewable energy into the installation electrical grid (Navy, 2012b). In

spring 2014, the Navy established the Renewable Energy Program Office to achieve the 1 Gigawatt of Renewable Energy initiative. The Navy achieved the one gigawatt initiative in 2015 (Navy, 2016).

In 2016, the Department of Defense (DoD) reissued guidance for energy resiliency on military installations updating the 2009 DoD Instruction 4170.11, *Installation Energy Management*, which approved the use of private sector partnerships as a crucial tool for financing energy and infrastructure improvements (DoD, 2016).

In November 2016, *Ameresco*, a DOE - designated ESCO, completed a preliminary assessment of the NNSY Mainsite, and St. Juliens Creek Annex (Ameresco, 2016). The 2016 Preliminary Assessment focused primarily on the consumption of utilities (i.e., electricity, water, and gas) used in facilities located in the industrial activities area. Fourteen categories of ECMs were identified focusing on reductions in energy and water use, onsite energy generation systems, and installation of renewable energy systems (e.g., solar photovoltaic power).

In 2017, the Navy developed guidelines for setting, assessing, and prioritizing energy security improvements through the identification of the "Three Pillars Of Energy Security" (Figure 1.2-1): 1) Reliability, 2) Resilience, and 3) Efficiency (Navy, 2017a). The National Defense Authorization Act (NDAA) Section for fiscal year 2019 (H.R. 5515) modified Title 10 U.S.C. Section 101(e) by adding an additional subsection "(8) Military Installation Resilience". The term "military installation resilience" is defined as, "… the capability of a military installation to avoid, prepare for, minimize the effect of, adapt to, and recover from extreme weather events, or from anticipated or unanticipated changes in environmental conditions, that do, or have the potential to, adversely affect the military installation or essential transportation, logistical, or other necessary resources outside of the military installation that are necessary in order to maintain, improve, or rapidly reestablish installation mission assurance and mission - essential functions".

The Navy used the energy security guidelines to approve the ECMs that were carried forward to the next phase of the ESPC process, an Investment Grade Audit (IGA). The IGA evaluated the cost of implementation and expected cost savings for each of the ECMs presented in *Ameresco's* 2016 Preliminary Assessment. In October 2018, *Ameresco* completed its IGA technical proposal. Documentation from the IGA as well as preliminary engineering drawings were used as the basis for defining the Proposed Action in this EA.

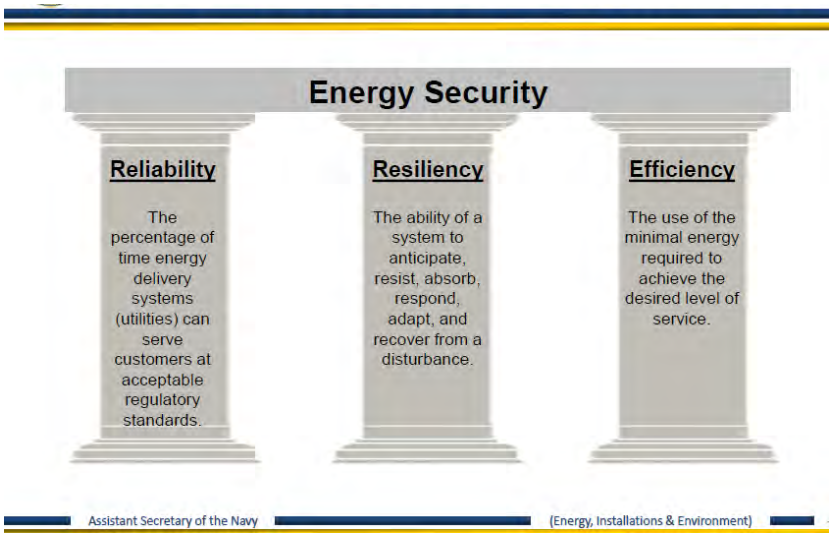

Figure 1.2-1: The Navy's Three Pillars Of Energy Security

1.3 Location:

NNSY is located in the Hampton Roads region of southeastern Virginia. The region is home to numerous Navy installations and support activities (Figure 1.3-1).

NNSY is the oldest continuously operated shipyard in the U.S., devoted exclusively to ship repair and overhaul dating to 1767.

Norfolk Naval Shipyard, Portsmouth, Virginia

The mission of NNSY is to: provide logistics support for assigned ships and service craft; conversion, overhaul, repair, alteration, and dry dock work and outfitting of ships; manufacture, research, development, and test work; and other services and materials. NNSY Mainsite occupies approximately 498 acres. Industrial activities are centered at the waterfront operations area, which consists of facilities for ship berthing, maintenance, and repair. With five operable dry docks and four major piers, NNSY is capable of servicing any ship in the fleet. NNSY Mainsite lies within the corporate boundaries of the City of Portsmouth to the north and west and by the Southern Branch of the Elizabeth River to the east (refer to Figure 1.3-1).

Scott Center Annex is located south of NNSY Mainsite in the City of Portsmouth (refer to Figure 1.3-1). The Navy purchased the 62-acre parcel in 1942 and established an administration building, barracks, and various other buildings. The Scott Center Annex currently provides housing and a recreation center.

Southgate Annex is an 83 - acre riverfront parcel located in the City of Portsmouth (refer to Figure 1.3-1). The site was purchased by the Navy in 1942 and 1944 and was used temporarily for ships returning from World War II. Southgate Annex now houses the Inactive Ship Facility and Intra-Fleet Supply Support Operations.

St. Juliens Creek Annex occupies approximately 490 acres located approximately one mile south of NNSY in the City of Chesapeake (refer to Figure 1.3-1). St. Juliens Creek Annex dates to 1849 when it began as

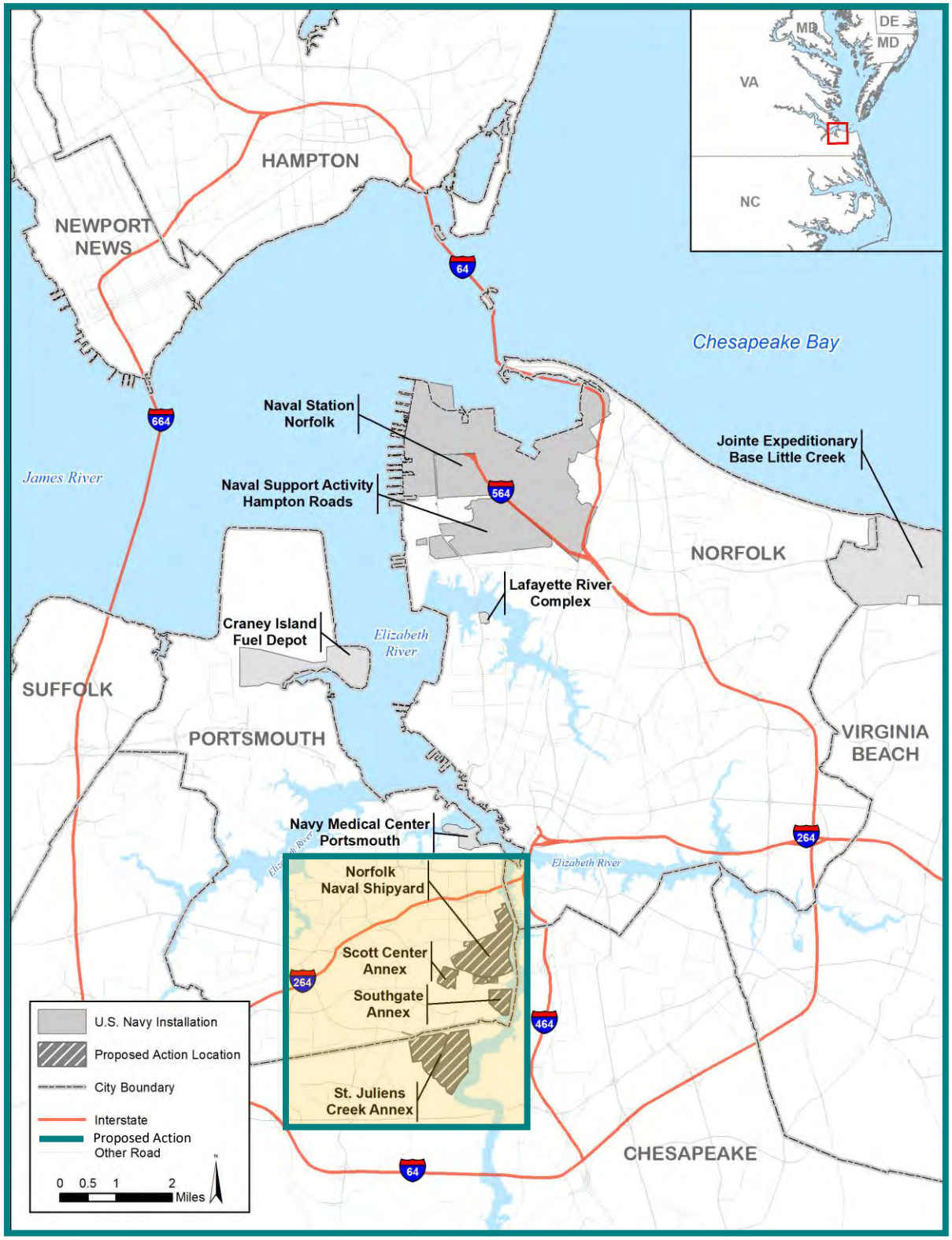

Figure 1.3-1: Location Of Proposed Action & Navy Installations In The Hampton Roads Region

an ordnance and material storage facility. The primary mission of St. Juliens Creek Annex is to provide a radar testing range and various administrative offices, light industrial shops, and storage facilities for tenant naval commands at NNSY.

***10 U.S.C. Section 5062*: "The Navy shall be organized, trained, and equipped primarily for prompt and sustained combat incident to operations at sea. It is responsible for the preparation of Naval Forces necessary for the effective prosecution of war; except, as otherwise assigned and, in accordance with Integrated Joint Mobilization Plans, for the expansion of the peacetime components of the Navy to meet the needs of war."**

1.4 Purpose Of & Need For The Proposed Action:

The purpose of the Proposed Action is to reduce the Navy's energy use and increase energy security, strategic flexibility, and resource availability at NNSY Mainsite, the Navy's Scott Center, Southgate, and St. Juliens Creek annexes. The Proposed Action is needed to assist the Navy in meeting Federal policies, goals, and standards concerning energy security through enhancing resiliency and finding efficiencies by reducing energy and water use.

1.5 Scope Of Environmental Analysis:

This EA focuses on the potential environmental impacts associated with implementing various ECMs proposed under an ESPC at NNSY Mainsite, the Navy's Scott Center, Southgate, and St. Juliens Creek annexes. The ECMs proposed would generate and store energy and reduce utility costs and water usage. The environmental resource areas analyzed within this EA include: air quality, water resources, cultural resources, visual resources, biological resources, infrastructure, hazardous materials and wastes, and environmental justice.

1.6 Key Documents:

Key documents are sources of information incorporated into this EA. Documents are considered to be key because of similar actions, analyses, or impacts that may apply to this Proposed Action. CEQ guidance encourages incorporating documents by reference. Documents incorporated by reference in part or in whole include:

- **Final EA For Installation & Operation Of The Z312 Cogeneration - Retrofit Facility At Naval Station Norfolk, Norfolk, Virginia (2013)**. In 2013, the Navy prepared an EA that analyzed the Navy's proposal to expand the existing utility infrastructure at steam plant building Z312 by installing three 5 Megawatt (MW) multi-fuel (natural gas / biofuel / fuel oil) capable combustion electrical - generating turbines that would provide heat recovery steam - generation capacity. The cogeneration - retrofit facility, along with an adjacent facility to house four natural gas compressors, would be constructed at the site of steam plant Building Z312's paved parking lot. The Navy found that the proposed action would not result in significant direct, indirect, or cumulative environmental impacts. A Finding of No Significant Impact (FONSI) was signed on February 22, 2013 (Navy, 2013).
- **Regional Integrated Cultural Resources Management Plan (ICRMP) For Naval Installations In Hampton Roads, Virginia (2012)**. In 2012, the Navy approved the ICRMP that sets guidelines for managing cultural resources and conserving and protecting significant cultural resources at the six naval installations and associated facilities located within Hampton Roads, Virginia and controlled by Commander, Navy Region Mid-Atlantic (CNRMA). The ICRMP provides the history

and descriptions of the historic properties, sites, and districts identified at NNSY and its support annexes (Navy, 2012c).

1.7 Relevant Laws, & Regulations:

The Navy has prepared this EA based upon Federal and state laws, statutes, regulations, and policies pertinent to the implementation of the Proposed Action, including but not limited to the following:

- **NEPA** (42 U.S. Code [U.S.C.] sections 4321–4370h), which requires an environmental analysis for major Federal actions that have the potential to significantly impact the quality of the human environment;
- **CEQ Regulations For Implementing The Procedural Provisions Of NEPA** (40 Code of Federal Regulations [CFR] parts 1500–1508);
- **Navy Regulations For Implementing NEPA** (32 CFR part 775), which provides Navy policy for implementing CEQ regulations and NEPA;
- **Clean Air Act** (42 U.S.C. section 7401 et seq.);
- **Clean Water Act** (33 U.S.C. section 1251 et seq.);
- **Coastal Zone Management Act** (16 U.S.C. sections 1451–1465);
- **National Historic Preservation Act** (54 U.S.C. section 306108 et seq.);
- **Endangered Species Act** (16 U.S.C. section 1531 et seq.);
- **Migratory Bird Treaty Act** (16 U.S.C. sections 703–712);
- **Bald And Golden Eagle Protection Act** (16 U.S.C. section 668–668d);
- **Comprehensive Environmental Response and Liability Act** (42 U.S.C. section 9601 et seq.);
- **Resource Conservation and Recovery Act** (42 U.S.C. section 6901 et seq.);
- **Toxic Substances Control Act** (15 U.S.C. sections 2601–2629);
- National Energy Conservation Policy Act of 1978 (42 U.S.C. 8287);
- **Energy Policy Act of 2005** (42 U.S.C. section 15801);
- **Energy Independence and Security Act of 2007** (42 U.S.C. chapter 152);
- **Executive Order (EO) 11988:** *Floodplain Management*;
- **EO 12898:** *Federal Actions To Address Environmental Justice In Minority Populations And Low-Income Populations*;
- **EO 13045:** P*rotection Of Children From Environmental Health Risks And Safety Risks*;
- **EO 13783:** *Promoting Energy Independence and Economic Growth*;
- **EO 13834:** *Efficient Federal Operations*.

A description of the Proposed Action's consistency with these laws, policies and regulations, as well as the names of regulatory agencies responsible for their implementation, is presented in Chapter 5, Table 5.1-1.

1.8 Public & Agency Participation, & Intergovernmental Coordination:

Regulations from the CEQ direct agencies to involve the public in preparing and implementing their NEPA procedures. The Navy published a Notice of Preparation (NOP) to prepare an EA in the *Virginian*

Pilot newspaper on May 26, 2019 (Appendix A). A "Fact Sheet" was also posted on the Naval Facilities (NAVFAC) Engineering Command, Mid-Atlantic (MidLant) public access website. The Fact Sheet briefly described the Proposed Action and solicited public comments. The public comment period was from May 26, 2019 through June 07, 2019. No comments were received during the comment period.

Pursuant to Section 106 of the National Historic Preservation Act (NHPA), the Navy consulted with the Virginia Department of Historic Resources State Historic Preservation Officer regarding potential effects of the Proposed Action on historic properties. Appendix B provides copies of the correspondence.

Pursuant to Section 7 under the Endangered Species Act (ESA), the Navy initiated coordination with the U.S. Fish and Wildlife Service (USFWS) using the Service's Information for Planning and Consultation (IPaC) on - line review process. Appendix C provides the USFWS IPaC package.

Pursuant to its responsibilities under the Coastal Zone Management Act (CZMA), the Navy prepared and submitted a Coastal Consistency Determination (CCD) to the Virginia Department of Environmental Quality (VADEQ). Appendix D provides copies of the correspondence.

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2 PROPOSED ACTION & ALTERNATIVES

2.1 Proposed Action:

The Navy proposes to implement Energy Conservation Measures (ECMs) through an award of an Energy Savings Performance Contract (ESPC) that would provide for infrastructure updates and improve energy efficiency of the Norfolk Naval Shipyard (NNSY) Mainsite, Scott Center, Southgate, and St. Juliens Creek annexes to maintain reliable operations in support of mission requirements. Under the Proposed Action, the Navy would execute an ESPC with an Energy Service Company (ESCO). The ESCO would construct, install, maintain, and finance the ECMs encompassed by the ESPC; the Navy would own and operate the ECMs.

The ECMs proposed meet the Navy's "Three Pillars Of Energy Security": 1) Reliability, 2) Resilience, and 3) efficiency (refer to Section 1.2). For purposes of this Environmental Assessment (EA), the ECMs have been divided into two groups as shown in Table 2.1-1 as the ECMs carried forward for detailed analysis and ECMs Categorically Excluded (CatExed) from detailed analysis.

Table 2.1-1: Energy Conservation Measures

ECMs Carried Forward For Detailed Analysis	
Description	Activity Overview
ECM 10 - Energy Security	10.1 – Construct a Combined Heat & Power (CHP) Plant; would include installation of a new high-pressure natural gas line; provide dual fuel burner and controls to new, Navy-installed, boiler in Building 283 at St. Julien's. 10.2 – Install a Micro - grid Control System (MCS) & Battery Energy Storage System (BESS).
ECM 16 - Industrial Wastewater Treatment Plant	16 - Construct a new Industrial Wastewater Treatment Plant (IWTP) to replace the existing IWTP, at the same location.
ECMs Excluded From Detailed Analysis	
Description	Activity Overview
ECM 8 - Steam Distribution Upgrades	8.1 – Repair insulation on steam pipe & fittings in 74 buildings. 8.4 – Replace failed steam traps in 70 buildings. 8.5 – Repair steam leaks by fixing valves or replacing faulty sections of pipe & replace the St. Juliens Creek Annex Service Area 2 steam overhead distribution piping & install new concrete piers for the overhead pipe supports.
ECM 14 - Transformer Modernization	14 - Replace transformers with high efficiency models in 33 buildings throughout NNSY Mainsite.

Sources: Ameresco, 2016; 2018.

2.1.1 ECMS Carried Forward For Detailed Analysis:

Table 2.1-1 provides the ECMs that are carried forward for detailed analysis in this EA. ECM 10 - Energy Security, and ECM 16 - Industrial Wastewater Treatment Plant will be analyzed in detail because they would either involve new construction or potentially have a more than minimal environmental effect on various resource areas. Figure 2.1-1 shows the locations proposed for ECM 10 – Energy Security (CHP Plant / MCS / BESS) and ECM 16 - IWTP.

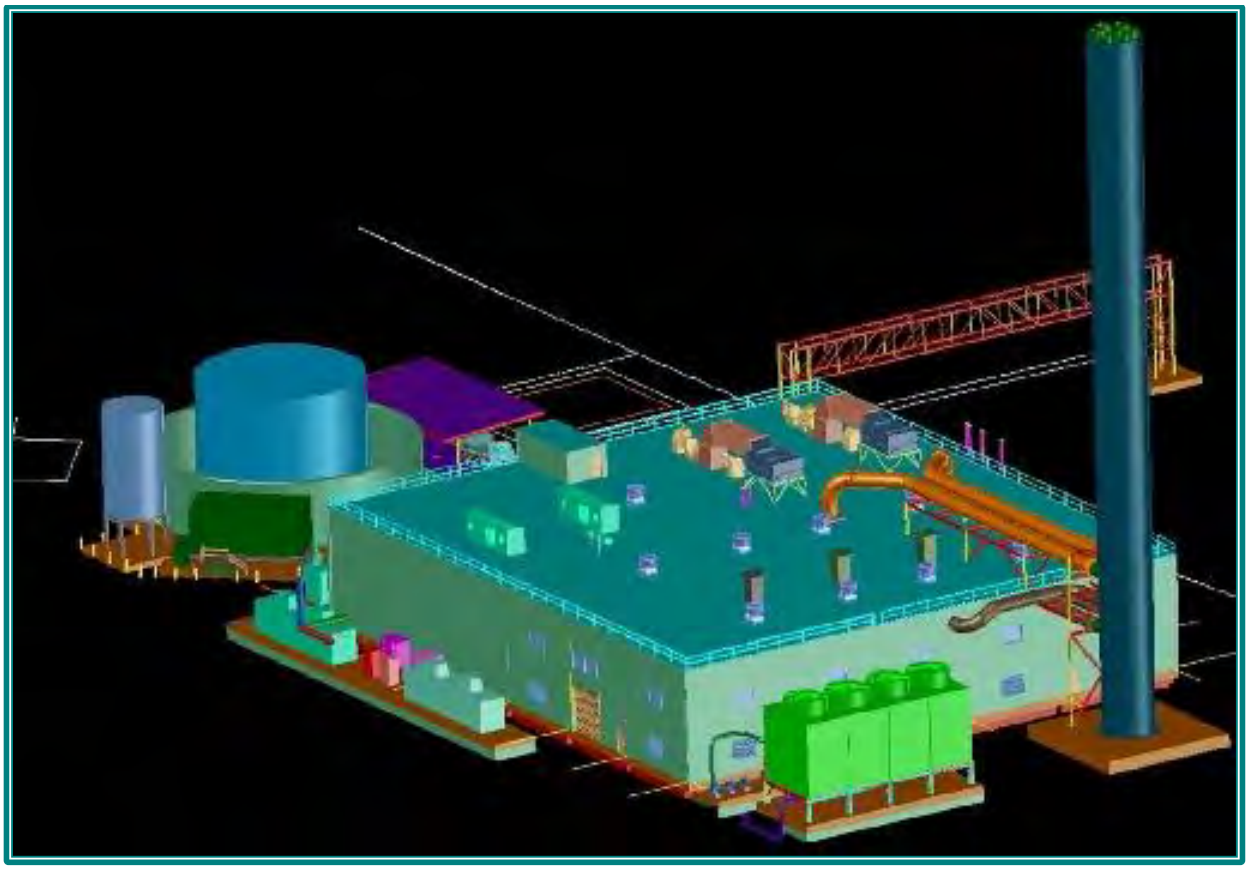

Figure 2.1-1: Combined Heat & Power Plant, Conceptual Layout

2.1.1.1 ECM 10.1 - Combined Heat & Power Plant:

ECM 10.1 would construct and operate a Combined Heat & Power (CHP) Plant (Figure 2.1-1) that would be located on NNSY Mainsite adjacent to the Gosport Ring - Tie (Gosport) Substation (see Figure 2.1-3). A two-story, 30,000 square foot (SF) building would be constructed to house the CHP Plant. The CHP Plant would provide the installation with its own source of steam and electricity.

The proposed plant would consist of the following equipment: two 7-megawatt (MW) dual fuel fired turbines, two heat recovery steam generators, three dual - fueled boilers, one diesel fired non - emergency generator, one 550,000 gallon diesel fuel tank, and one cooling water tower. The turbines would be fired with natural gas, with Ultra Low Sulfur Diesel (ULSD) as back-up in times when natural gas is unavailable. The turbine would have a maximum heat input of 78.0 Million British Thermal Units (MBTUs) per hour and would potentially operate 8,760 hours per year. Each turbine would be limited to 1,000 hours of ULSD firing per year, with the remaining balance operating on natural gas. To meet the high natural gas demand of the proposed CHP Plant, a new high - pressure natural gas line is proposed that would be installed by the local utility company, *Columbia Natural Gas*. The proposed natural gas line would run from an existing transport line on Military Highway (U.S. Route 13) north along area roads through St. Juliens Creek Annex to the site of the proposed CHP Plant (Figure 2.1-2) and would not require the installation of a new gas compressor. Additional real estate interests would be acquired as necessary for the proposed line. A “tee” off the line would extend service to the St. Juliens Creek Annex boiler plant (Building 283).

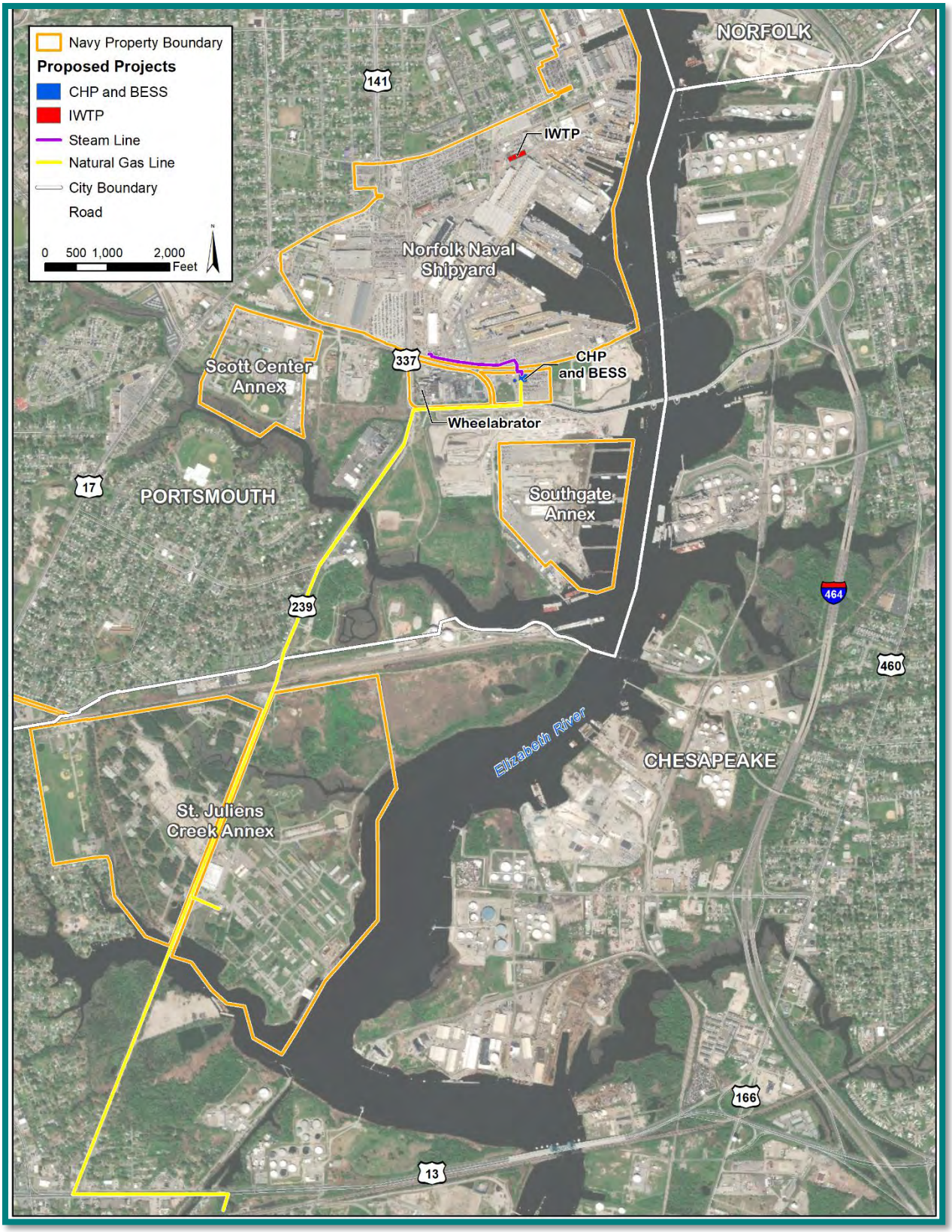

Figure 2.1-2: Location Of Proposed Energy Conservation Measures 10 & 16

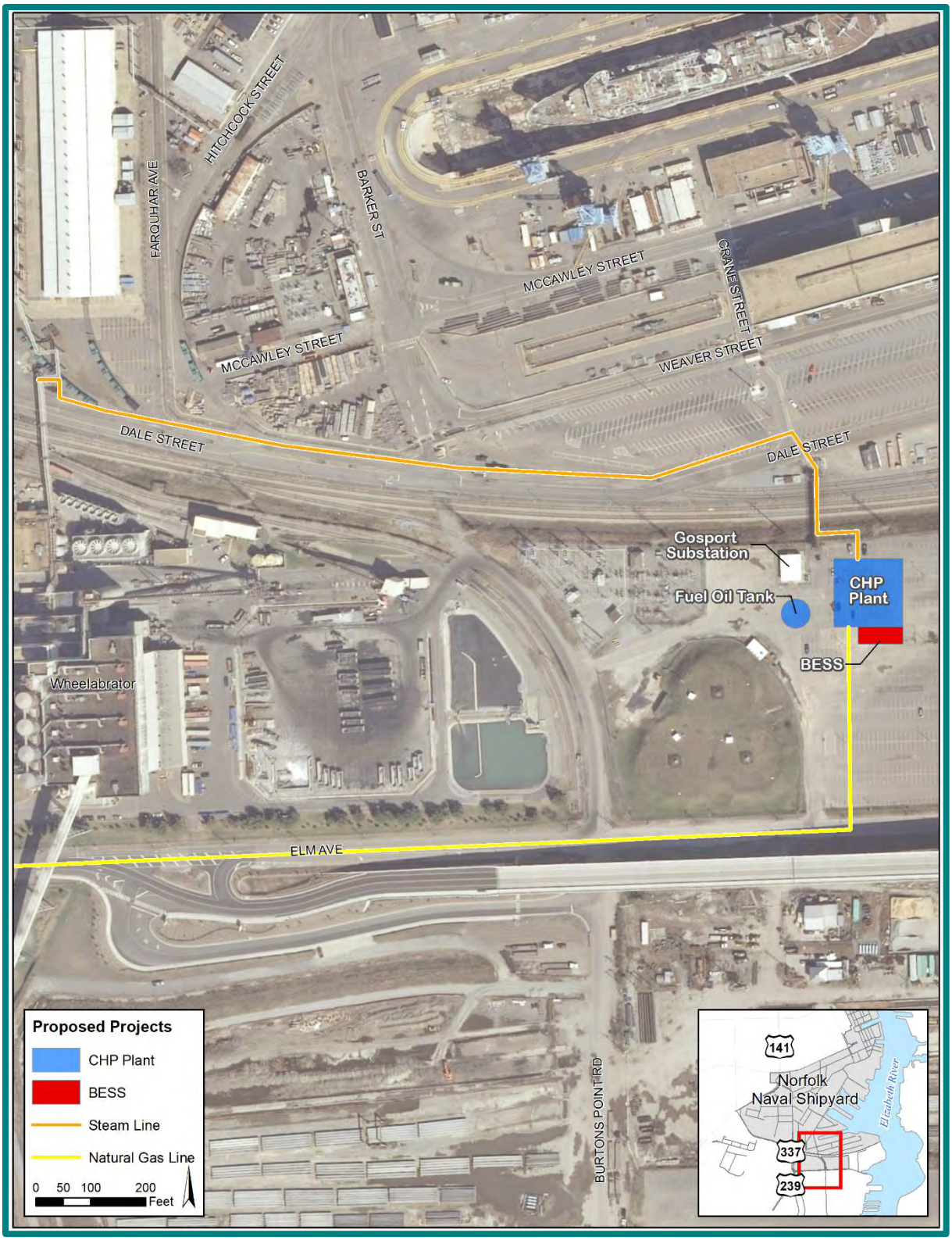

Figure 2.1-3: Location Of The Proposed Combined Heat & Power Plant

The Navy is replacing the old fuel oil boiler in Building 283, and the ESCO will install a dual fuel burner and fuel controls in the new boiler as part of the ESPC to provide additional energy savings, reliability, and redundancy. The natural gas line would primarily be installed using horizontal directional boring to minimize excavation. A new steam distribution line would run from the CHP Plant to connect to existing main steam lines along Dale Street (Figure 2.1-3). The steam distribution line would be installed on overhead supports, identical to existing steam distribution line supports on NNSY.

Steam is currently purchased from *Wheelabrator Portsmouth* (*Wheelabrator*), a refuse derived fuel plant adjacent to the NNSY (Figure 2.1-2) under a long - term contract that will expire in January 2023. The Navy would continue to purchase steam from *Wheelabrator* until that contract expires, at which time the CHP Plant would provide steam to NNSY. Electricity is currently purchased from *Dominion Power* with the electrical service originating from the Gosport Substation. During an outage, all of NNSY Mainsite experiences a complete loss of power. The proposed CHP Plant would tie into the proposed MCS (Section 2.1.1.2) and proposed BESS (Section 2.1.1.3) with the systems working together to provide NNSY Mainsite with consistent, uninterrupted utilities.

The CHP Plant building would be built on concrete piles with the floor elevation built to either the 500 - year flood elevation or 4 feet above the 100 - year flood elevation, whichever is higher. The building would include a 24,000 SF equipment room and a 6,000 SF electrical switch gear room. A 550,000 gallon diesel fuel tank would be constructed on the west side of the building; a 213 foot tall, multi flue chimney would be constructed on the east side of the building.

The location proposed for the CHP Plant is currently within an 880 vehicle parking lot. Approximately 360 parking spaces would be required to implement ECM 10 – Energy Security. Site preparation at the location for the proposed CHP Plant would include asphalt / concrete and equipment demolition, grading, boring for the concrete piles, excavation, building construction, construction of the 550,000 gallon diesel fuel tank, construction of a secondary containment berm using both concrete and earth, trenching to extend the gas line 16,000 feet to the proposed plant site, and paving. Utilities (communications, electrical, natural gas, potable water, and sanitary sewer) would be tied - in and routed to the CHP Plant.

2.1.1.2 ECM 10.2 - Micro-Grid Control System, & Battery Energy Storage System:

ECM 10.2 would involve installation of a Micro-grid Control System (MCS) controller and interface dashboard at NNSY Mainsite. The MCS would be located inside the CHP Plant (Figure 2.1-3). The MCS would control various feeder circuits throughout the electrical distribution system at NNSY. In the event of a grid or outside power source failure, this system would have the capability to decouple the CHP Plant from the Gosport Substation. The MCS would automatically “island NNSY” by shedding non - critical loads to provide balanced electrical distribution to the most critical loads. The majority of work establishing the MCS would focus on upgrades to the switchgear housing the existing protective relaying at each substation throughout the installation.

ECM 10.2 would also install a new 3 MW / 5 MWH lithium - ion battery energy storage system (BESS) at NNSY Mainsite. Lithium - ion battery systems are versatile in their ability provide high power with very fast response times. The BESS would be located in a 140 feet by 15 feet outdoor area located immediately adjacent to the south side of the proposed CHP Plant (Figure 2.1-3). The BESS would be integrated into the electrical distribution system to provide “bridge power” for the few minutes it would take to bring the existing eight (8) 1.6 MW standby emergency diesel generators online. Building 1580,

located approximately ¾ mile north of the proposed CHP Plant (and adjacent to the proposed IWTP (Figure 2.1-4), houses the emergency generators with a total capacity of 12.8 MW. These generators would be refurbished with new controls and switchgear.

Site preparation for the proposed BESS would include surface clearing, installation of underground electrical conduit, concrete foundations, compacted gravel, BESS equipment, and electrical interconnection to the base's electrical distribution system.

2.1.1.3 ECM 16 - Industrial Wastewater Treatment Plant:

ECM 16 - IWTP would involve constructing a new Industrial Wastewater Treatment Plant (IWTP) to replace the existing IWTP currently located at Building 1485 at NNSY Mainsite. Figure 2.1-4 shows the location of the proposed and existing IWTP. All components of the existing IWTP would be demolished and the new IWTP would be constructed in its place. Two existing diesel fuel tanks (1586, and 1587) and an associated 8,000-gallon underground spill containment tank (utilized in the event there was spillage during diesel fuel unloading) would be demolished to make room for the new IWTP. New above ground diesel fuel tanks to replace the demolished diesel fuel tanks would be provided closer to the emergency generators in Building 1580. The proposed IWTP would be constructed in phases so that the existing plant could remain in operation while the new plant was being built. The Treatment Plant Building (highlighted in light red) would be constructed first and would be put into operational service prior to construction of the next two building sections. The treatment plant would be enclosed in a 7,475 SF metal frame building with insulated metal panel siding and steel joists. Once the new treatment plant was operational, the existing treatment plant would be demolished and the Operations Building and Storage Building would be constructed.

The Operations Building (highlighted in light green) would be constructed next. The 5,460 SF two - story Operations Building would house a 5,460 SF shop room on the first floor; the second floor would encompass a 1,000 SF control room, a 1,000 SF break room with restroom, and showers, 1,200 SF training room, and 1,200 SF administration office space. Functions that occur in the Operations Building, such as the plant control room, would be in temporary trailers while the Operations Building was being constructed. The Storage Building (highlighted in light blue) would be constructed last. The 4,225 SF building would be used to store dry bulk chemicals for water treatment.

The existing IWTP is currently located inside the controlled industrial area fence. However, because the work performed at the IWTP is not information - sensitive, the plant could be located outside of the controlled industrial area. The fence line is proposed to be relocated to the south of the IWTP (Figure 2.1-4). The new fence would include a personnel gate to provide direct access from the IWTP to the controlled industrial area.

Currently, approximately 1.9 million gallons of wastewater is treated per year. Wastewater is held in an equalization tank, pumped to a reaction tank, then to a thickener tank and finally run through a sand filter. Heavy metal sludge is dewatered with a filter press. The treated effluent is discharged to the Southern Branch of the Elizabeth River, in accordance with Virginia Pollutant Discharge Elimination System (VPDES) permit VA0005215.

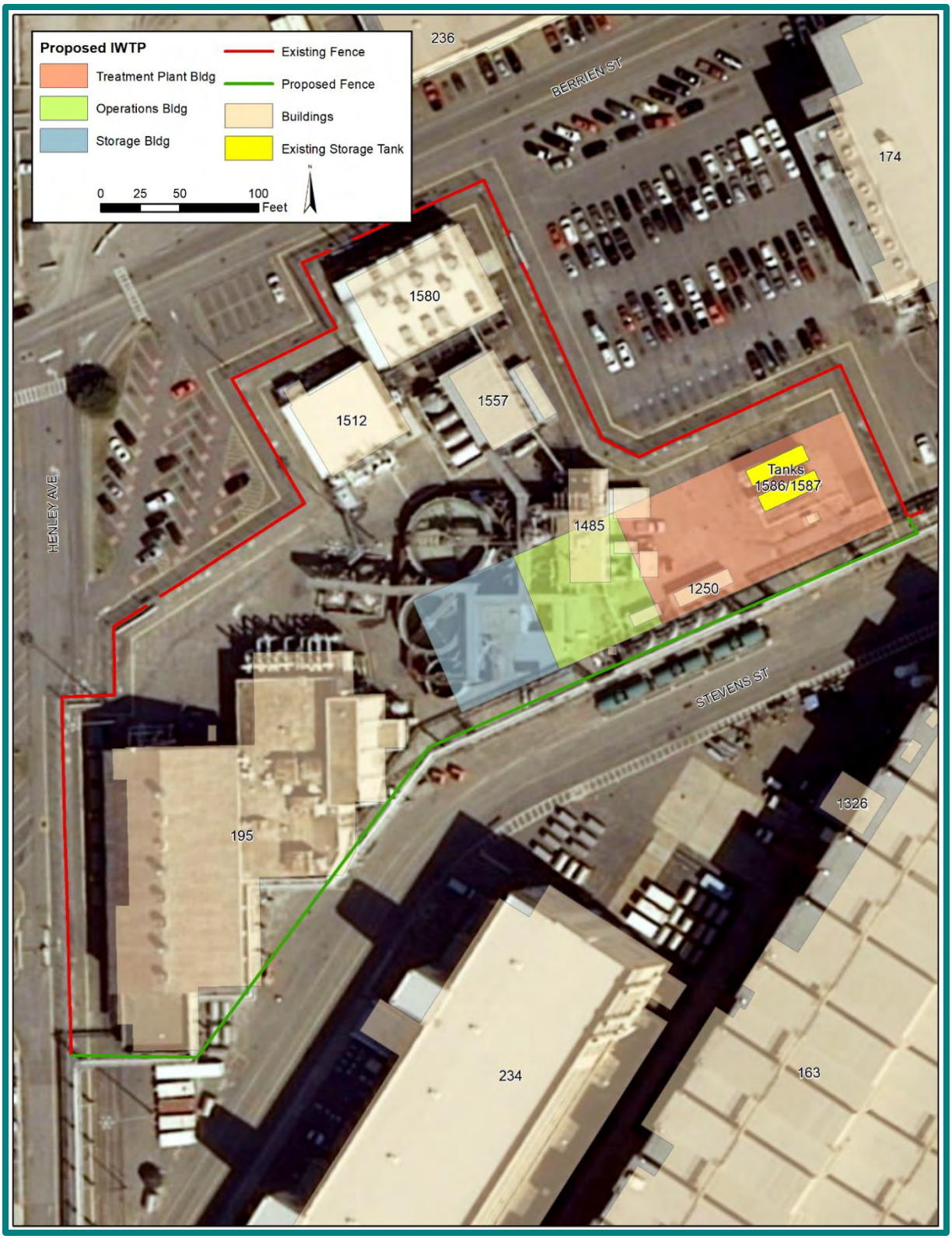

Figure 2.1-4: Location Of The Existing & Proposed Industrial Wastewater Treatment Plant

The proposed IWTP would include two parallel batch treatment trains, each with a capacity of 1.35 million gallons per year, which can treat two different wastewater streams simultaneously using different treatment chemicals and methods. The wastewater treatment process would remain essentially the same as it is currently; the same treatment chemicals, batch processing, residence times, and test methods would continue to be used. The discharge permit and actual permitted contaminant discharge would not change, but would remain the same as the existing plant. Treated effluent would be discharged to the Southern Branch of the Elizabeth River or stored in a 10,000 - gallon non - potable tank included with the proposed IWTP. Various tanks and totes are currently used to transfer wastewater from the generation source to the IWTP via transport trucks. After being emptied, the tanks and totes are currently washed using municipal water. However, under this proposal, after washing the tanks, the wash down water would be captured and then circulated back through the IWTP treatment process, making it a closed-loop system. The use of the treated effluent / non - potable water to wash down the wastewater transport tanks and totes would eliminate the need to purchase roughly 300,000 gallons of municipal water annually for this purpose (Ameresco, 2018).

In addition to the demolition / removal of the existing IWTP building, two diesel fuel tanks, and an underground spill containment tank, site preparation would include surface clearing, installation of underground utilities and connections to existing piping, electrical, and instrumentation systems, and paving.

2.1.2 ECMs Categorically Excluded From Detailed Analysis:

NEPA regulations allow Federal agencies to identify actions, which do not individually or cumulatively have a significant effect on the quality of the human environment as categorically excluded from additional NEPA review. The Navy has identified 45 categories of actions that are listed in 32 Code of Federal Regulations (CFR) Part 775, called “Categorical Exclusions (CatExs). If a proposed Navy action fits one of these CatExs and has no extenuating circumstances that could result in a significant impact (such as certain adverse effects to historic properties or endangered species), the action is excluded from the requirement to prepare an EA.

ECMs 8 and 14 would be implemented at NNSY Mainsite, Scott Center, Southgate and St. Juliens Creek annexes. These independent ECMs would contribute to the Navy’s goals for energy efficiency as defined in Executive Order (EO) 13834: *Efficient Federal Operations*. They consist primarily of upgrading and installing efficient energy systems and fixtures within existing facilities to manage and reduce energy consumption. ECMs 8 and 14 would not individually or cumulatively have a significant effect on the human environment as defined in 40 CFR 1508.4. As such, each of these ECMs would individually qualify for CatEx under 32 CFR part 775. However, because these ECMs would be part of an ESPC, they would be considered connected actions per 40 CFR 1508.25. Therefore, ECMs 8 and 14 have been excluded from detailed analysis in this EA; they are addressed collectively and qualitatively and as part of the cumulative impacts discussion in Chapter 4.

Appendix E provides project descriptions, building and site locations, and the applicable CatEx number for ECMs 8 and 14.

2.2 Screening Factors:

NEPA implementing regulations provide guidance on the consideration of alternatives to a Federally proposed action and require rigorous exploration and objective evaluation of reasonable alternatives.

Only those alternatives determined to be reasonable and to meet the purpose and need require analysis.

In support of NNSY's sustainability goals, the Navy arranged to have *Ameresco* evaluate the ECM opportunities presented in the 2016 Preliminary Assessment for energy and cost savings (Ameresco, 2016). The subsequent Investment Grade Audit (IGA) evaluated and identified all ECMs that would be feasible to implement under the terms of an ESPC (Ameresco, 2018).

In accordance with the Chief of Naval Operations (CNO) Shore Energy Management Return on Investment criteria, potential alternatives (i.e., ECMs) were evaluated against the following screening factors (Navy, 2012a):

- Must minimize total ownership costs;
- Must minimize shore energy consumption;
- Must provide reliable energy to critical infrastructure;
- Must achieve regulatory compliance and stakeholder expectations; and
- Must develop enabling infrastructure.

2.3 Alternatives Carried Forward For Analysis:

Based on the reasonable alternative screening factors and meeting the purpose and need for the Proposed Action, the Action Alternative and the No Action Alternative were identified and will be analyzed within this EA.

2.3.1 No Action Alternative:

Under the No Action Alternative, the Navy would not implement ECMs through award of an ESPC at NNSY. As a result, no energy cost savings or needed infrastructure improvements would be realized. The No Action Alternative would not meet the purpose and need for the Proposed Action; however, as required by NEPA, the No Action Alternative is carried forward for analysis in this EA. The No Action Alternative will be used to analyze the consequences of not undertaking the Proposed Action, not simply conclude no impact, and will serve to establish a comparative baseline for analysis.

2.3.2 Action Alternative:

Under the Action Alternative, the Navy would implement the ECMs, presented in Table 2.1-1, through an ESPC that would be executed with an ESCO. The ESCO would construct, install, maintain, and finance the ECMs as encompassed by the ESPC. The Navy would own and operate the ECMs.

2.4 Alternatives Considered But Not Carried Forward:

Ameresco's 2016 Preliminary Assessment and subsequent 2018 IGA evaluated numerous measures to reduce energy and water usage throughout NNSY mainsite and annexes. Several categories of ECMs were removed from further consideration in the IGA because they would not substantially contribute to the goals of the ESPC or satisfy the reasonable alternative screening factors presented in Section 2.2.

2.4.1 Central Steam Plant & Steam Condensate Return System:

Ameresco's preliminary assessment considered development of a central steam plant and steam condensate return system under ECM 10. The steam plant would have been constructed within Building

174; operationally, it would have reduced and potentially eliminated the need to purchase steam from *Wheelabrator*. The steam condensate return system would have returned steam to the *Wheelabrator* plant to reduce water consumption, treatment, and disposal costs. Development of the central steam plant and steam condensate return system would have excluded development of the CHP Plant, MCS, and BESS. During the IGA, the Navy and *Ameresco* determined that the central steam plant and steam condensate return system would not have met the "Three Pillars Of Energy Security": 1) Reliability, 2) Resilience, and 3) Efficiency, that could be met with the development of the CHP Plant, MCS, and BESS. As such, the central steam plant and steam condensate return system projects were not carried forward.

2.4.2 Solar Photovoltaic Systems:

ECM 11 considered installation of ground - mounted solar photovoltaic systems at Paradise Creek Disposal Area, and St. Juliens Creek Annex. The ground - mounted systems would have required land disturbing activities which could not be implemented due to existing Land Use Controls (LUCs) at both sites. The development of solar parking decks and solar wall systems were also considered; but, determined not feasible and not considered further.

2.4.3 Other Energy / Water Efficiency Alternatives:

Ameresco's Preliminary Assessment evaluated various measures to reduce energy use and water use throughout NNSY. Several categories of ECMs were removed from further consideration in the IGA because they would not have substantially contributed to the goals of the ESPC or satisfied the reasonable alternative screening factors presented in Section 2.2. These ECMs consisted of boiler and chiller plant improvements, installation of low - flow plumbing fixtures and flow control valves, and tanks to reuse water in various test areas such as cable assembly hydrostatic tests, dynamometer motor tests, pipe pressure tests, and fire hose tests.

3 AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

This chapter presents a description of the environmental resources and baseline conditions that could be affected, including potential direct and indirect effects, from implementing the Energy Conservation Measures (ECMs) under the Proposed Action as described in Section 2.1.

All potentially relevant environmental resource areas were initially considered for analysis in this Environmental Assessment (EA). In compliance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ), and Department of Navy (Navy) guidelines; the discussion of the affected environment (i.e., existing conditions) focuses only on those resource areas potentially subject to impacts. Additionally, the level of detail used in describing a resource is commensurate with the anticipated level of potential environmental impact.

"Significantly," as used in the NEPA, requires considerations of both context and intensity. Context means that the significance of an action must be analyzed in several contexts such as society as a whole (e.g., human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of a proposed action. For instance, in the case of a site-specific action, significance would usually depend on the effects in the locale rather than in the world as a whole. Both short - and long - term effects are relevant. Intensity refers to the severity or extent of the potential environmental impact, which can be thought of in terms of the potential amount of the likely change. In general, the more sensitive the context, the less intense a potential impact needs to be in order to be considered significant. Likewise, the less sensitive the context, the more intense a potential impact would be expected to be significant.

This section includes analysis of: air quality, water resources, cultural resources, visual resources, biological resources, infrastructure, hazardous materials and wastes, and environmental justice.

The potential impacts to the following resource areas are considered negligible or nonexistent so they were not analyzed in detail in this EA:

Airspace: No aspect of the Proposed Action to implement ECMs at Norfolk Naval Shipyard (NNSY) would involve aircraft operations or equipment. As such, airspace was eliminated from further analysis in this EA.

Land Use: Land use refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. NNSY Mainsite occupies approximately 800 acres of developed land. Of this total, approximately 500 acres are designated for industrial purposes. ECMs 10 and 16 would be constructed in the industrial areas of NNSY Mainsite. Implementing the Proposed Action would not require a change in land use or affect the industrial land use designation of the surrounding areas at NNSY Mainsite. Section 3.2, Water Resources provides a discussion of Virginia's coastal zone management and resources.

Noise: Noise is often defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, diminishes the quality of the environment, or is otherwise annoying. Noise sources within and near NNSY are predominantly related to industrial activities, automobile traffic, rail traffic, and neighborhood activities. Machinery associated with installation operations generates noise primarily during daytime hours. A noise study has not been performed; however, the typical background noise level at busy areas of NNSY would be expected to be approximately 50 to 90 decibels, depending on the proximity to the source of the noise (Navy, 2011).

Noise from demolition, site preparation, and construction activities would be short - term and intermittent, resulting in no measurable effect to the adjacent facilities. Noise generated from operations at the proposed Combined Heat and Power (CHP) plant and industrial Wastewater Treatment Plant (IWTP) would be anticipated to produce noise levels consistent with existing conditions and would not produce noticeable impacts due to the industrial nature of NNSY. As such, this resource has been eliminated from future discussion in this EA.

Public Health & Safety: The Proposed Action would involve demolition and construction activities. These activities would be performed by qualified personnel who are trained to operate the appropriate equipment safely; appropriate signage and fencing would be placed to alert pedestrians and motorists of project activities, as well as any temporary changes in traffic patterns. Personnel would follow Standard Operating Procedures (SOPs) and all associated demolition and construction activities would be conducted in accordance with Federal and State Occupational Safety and Health Administration (OSHA) regulations. Negligible impacts to public health and safety would be anticipated; therefore, this resource is not carried forward for further analysis in this EA.

Socioeconomics: The Proposed Action would provide a short - term beneficial impact to the local economy from the purchase of goods and services during the construction phase. The long - term impact during the operational and maintenance phases would be considered negligible as labor would be drawn from existing manpower positions. The beneficial impacts to the local economy would not be considered significant. As such, no further evaluation of this resource is warranted.

Traffic & Transportation: Regional access to NNSY is provided primarily by Interstate 264 (I 264). Commercial vehicle routes to NNSY are generally via arterial roadways George Washington Highway (U.S. Route 17), Portsmouth Boulevard, Victory Boulevard, and Frederick Boulevard (also U.S. Route 17). Primary local roadways providing access to NNSY from the arterial roadways are Effingham Street (State Route 141), Port Centre Parkway, and Lincoln Street. A minor short- term increase in vehicle traffic during the transport of equipment, materials, and contract workers for implementation of the proposed ECMs would be anticipated; however, a long - term increase in local vehicular traffic would not occur and no modification to existing roads for the duration of the projects would be required. The heavy equipment and materials needed for site preparation and construction would be the same as those typically required for road construction projects and would not pose unique transportation considerations. Operation of the ECMs is expected to be the responsibility of on - base personnel, and no additional traffic related to new jobs is expected. During operations, a limited number of personnel would access the installation regularly or periodically to perform activities such as monitoring operations and servicing project equipment; potential impacts on traffic and transportation as a result of operational and maintenance activities would be negligible and temporary. Potential impacts on traffic and transportation as a result of construction / installation and operation would be negligible and temporary; therefore, these resources do not warrant detailed analysis in the EA. The loss of approximately 360 parking spaces to implement ECM 10 – Energy Security would be negligible as the parking area is sporadically used and another large parking area is located a ¼ quarter mile south of the proposed site.

3.1 Air Quality:

This discussion of air quality includes criteria pollutants, standards, sources, permitting, and Greenhouse Gases (GHG). Air quality in a given location is defined by the concentration of various pollutants in the atmosphere. A region's air quality is influenced by many factors, including the type and amount of

pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Most air pollutants originate from human - made sources, including mobile sources (e.g., cars, trucks, buses) and stationary sources (e.g., factories, refineries, power plants), as well as indoor sources (e.g., some building materials and cleaning solvents). Air pollutants are also released from natural sources such as forest fires or volcano eruptions.

3.1.1 Regulatory Setting:

3.1.1.1 Criteria Pollutants & National Ambient Air Quality Standards:

The principal pollutants defining the air quality, called "criteria pollutants," include carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), suspended particulate matter less than or equal to 10 microns in diameter (PM_{10}), fine particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), and lead (Pb). CO, SO_2, Pb, and some particulates are emitted directly into the atmosphere from emissions sources. O_3, NO_2, and some particulates are formed through atmospheric chemical reactions that are influenced by weather, ultraviolet (UV) light, and other atmospheric processes. Volatile organic compounds (VOCs) and nitrogen oxides (NO_X) are precursors for O_3 formation.

Under the Clean Air Act (CAA), the U.S. Environmental Protection Agency (USEPA) has established National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) for these pollutants. NAAQS are classified as primary or secondary. Primary standards protect against adverse health effects; secondary standards protect against welfare effects, such as damage to farm crops and vegetation and damage to buildings. Some pollutants have long - term and short - term standards. Short - term standards are designed to protect against acute, or short - term, health effects, while long - term standards were established to protect against chronic health effects.

Areas that are and have historically been in compliance with the NAAQS are designated as "Attainment Areas". Areas that violate a Federal air quality standard are designated as "Nonattainment Areas". Areas that have transitioned from nonattainment to attainment are designated as "Maintenance Areas" and are required to adhere to maintenance plans to ensure continued attainment. NNSY is located in a region that is categorized as attainment for all criteria pollutants. As a result, regulations such as the General Conformity Rule (GCR) do not apply.

The CAA requires States that have nonattainment designations to develop a general plan to attain and maintain the NAAQS in all areas of the country and a specific plan to attain the standards for each area designated nonattainment for a NAAQS. These plans, known as State Implementation Plans (SIPs), are developed by State and Local air quality management agencies and submitted to USEPA for approval.

In addition to the NAAQS for criteria pollutants, national standards exist for Hazardous Air Pollutants (HAPs), which are regulated under Section 112(b) of the 1990 CAA Amendments. The National Emission Standards for Hazardous Air Pollutants regulate HAP emissions from stationary sources (40 CFR part 61).

3.1.1.2 Mobile Sources:

HAPs emitted from mobile sources are called "Mobile Source Air Toxics". These are compounds emitted from highway vehicles and non - road equipment that are known or suspected to cause cancer or other serious health and environmental effects. The primary control methodologies for these pollutants for mobile sources involves reducing their content in fuel and altering the engine operating characteristics

to reduce the volume of pollutant generated during combustion. Mobile source air toxics would be the primary HAPs emitted by mobile sources during construction. The equipment used during construction would likely vary in age and have a range of pollution reduction effectiveness. Construction equipment, however, would be operated intermittently, for the duration of construction, and would produce negligible ambient HAPs in a localized area. Therefore, mobile source air toxics emissions are not considered further in this analysis.

3.1.1.3 Permitting:

New Source Review (Preconstruction Permit):

New major stationary sources and major modifications at existing major stationary sources are required by the CAA to obtain an air pollution permit before commencing construction. This permitting process for major stationary sources is called "New Source Review" and is required when a major source or major modification is planned for nonattainment areas or attainment and unclassifiable areas. In general, permits for sources in attainment areas and for other pollutants regulated under the major source program are referred to as Prevention of Significant Deterioration (PSD) permits. Additional PSD permitting thresholds apply to increases in stationary source GHG emissions. Navy installations shall comply with applicable permit requirements under the PSD program per 40 CFR Section 51.166.

Title V (Operating Permit):

The Title V Operating Permit Program consolidates all CAA requirements applicable to the operation of a source, including requirements from the state implementation plan, preconstruction permits, and the air toxics program. It applies to stationary sources of air pollution that exceed the major stationary source emission thresholds, as well as other non - major sources specified in a particular regulation. The program includes a requirement for payment of permit fees to finance the operating permit program whether implemented by USEPA or a State or Local regulator. Navy installations subject to Title V permitting shall comply with the requirements of the Title V Operating Permit Program, which are detailed in 40 CFR Part 70 and all specific requirements contained in their individual permits.

3.1.1.4 Greenhouse Gases:

GHGs are gas emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. Scientific evidence indicates increasing global temperature over the past century due to an increase in GHG emissions from human activities. The climate change associated with this global warming is producing negative economic and social consequences across the globe that will increase in frequency and severity in future years.

USEPA issued the *Final Mandatory Reporting of Greenhouse Gases Rule* on September 22, 2009. GHGs covered under the *Final Mandatory Reporting of Greenhouse Gases Rule* are carbon dioxide (CO_2), methane (CH_4), nitrogen oxide (NO_X), hydrofluorocarbons (HFC), perfluorocarbons (PFC), sulfur hexafluoride (SF_6), and other fluorinated gases including nitrogen trifluoride (NF_3) and hydrofluorinated ethers (HFE). Each GHG is assigned a global warming potential. The global warming potential is the ability of a gas or aerosol to trap heat in the atmosphere. The global warming potential rating system is standardized to CO_2, which has a value of one. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of mobile sources and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions as CO_{2e} (carbon dioxide equivalent) are required to submit annual reports to USEPA.

GHG emissions are also regulated under PSD and Title V permitting programs, which was initiated by a USEPA rulemaking issued on June 3, 2010 known as the GHG Tailoring Rule (75 Federal Register 31514). While GHG emissions alone cannot be a basis for CAA permitting, sources that are already Title V major emission sources can be considered major GHG emission sources. GHG emissions thresholds for permitting of stationary sources are an increase of 75,000 tons per year of CO_{2e} at existing major sources and facility - wide emissions of 100,000 tons per year of CO_{2e} for a new source or a modification of an existing minor source. The 100,000 tons per year of CO_{2e} threshold defines a major GHG source for both construction (PSD) and operating (Title V) permitting, respectively.

However, on June 23, 2014, the U.S. Supreme Court issued its decision in Utility Air Regulatory Group v. USEPA (No. 12-1146). As a result of the decision USEPA will no longer apply or enforce Federal regulatory provisions or the USEPA approved PSD state implementation plan provisions that require a stationary source to obtain a PSD permit if GHGs are the only pollutant that the source emits or has the potential to emit above the major source thresholds, or for which there is a significant emissions increase and a significant net emissions increase from a modification (e.g., 40 CFR Section 52.21 (b)(49)(v)). Nor does USEPA intend to continue applying regulations that would require that States include in their SIPs a requirement that such sources obtain PSD permits.

Similarly, USEPA will no longer apply or enforce Federal regulatory provisions or provisions of the USEPA approved Title V programs that require a stationary source to obtain a Title V permit solely because the source emits or has the potential to emit GHGs above the major source thresholds (e.g., the regulatory provision relating to GHG subject to regulation in 40 CFR section 71.2). USEPA also does not intend to continue applying regulations that would require Title V programs submitted for approval by USEPA to require that such sources obtain Title V permits.

At this time, Virginia has no mandatory GHG reporting requirements beyond the Federal mandatory GHG reporting rule.

3.1.2 Affected Environment:

NNSY operates under a Title V Operating Permit (No. TRO-60326) issued by the Commonwealth of Virginia. The facility is a Title V major source for all criteria pollutants. It is also a major source of HAPs and is therefore, subject to the maximum achievable control technology for shipbuilding (Subpart II), chrome plating (Subpart N), reciprocating internal combustion engines (Subpart ZZZZ), and the Asbestos National Emission Standards for Hazardous Air Pollutants (Subpart M). It is also a PSD major source because of its relationship with *Wheelabrator*, which is a support facility for NNSY by supplying steam to the shipyard. Recent (2017) annual criteria pollutants emissions for NNSY are shown in Table 3.1-1. These emissions do not include the *Wheelabrator* facility emissions, which are separately covered under a Title V Operating Permit (No. TRO-61018).

Table 3.1-1: City Of Portsmouth, *Wheelabrator*, & Norfolk Naval Shipyard Air Emissions Inventories (Tons Per Year)

Location	VOC	CO	NO_x	SO_2	PM_{10}	$PM_{2.5}$
City Of Portsmouth (2014)	**3,904**	**9,818**	**3,105**	**817**	**353**	**153**
Wheelabrator (2017)	**4.51**	**387.68**	**1,324.49**	**227.09**	**9.00**	**0.12**
NNSY (2017)	**29.39**	**2.50**	**10.08**	**0.0**	**6.13**	**5.94**

Sources: USEPA, 2019; Virginia Department of Environmental Quality (DEQ), 2018.

3.1.3 Environmental Consequences:

Effects on air quality are based on estimated direct and indirect emissions associated with the action alternatives. The Region Of Influence (ROI) for assessing air quality impacts is the City of Portsmouth, where NNSY (and *Wheelabrator*) is located.

The primary emissions from the Proposed Action construction phase of the project would result from the burning of fossil fuels in mobile sources (e.g., earth moving equipment, trucks etc.). For the purposes of evaluating air quality impacts from these activities, emissions are considered to be minor if the Proposed Action would result in an increase 100 tons per year or less for any criteria pollutant. The proposed action's annual emissions were screened against the applicable General Conformity threshold values (*de minimis* values) as comparative thresholds or indicators for criteria pollutants (100 tons per year). Comparative thresholds do not trigger a regulatory requirement; however, they provide an indication or a warning, that the action could be potentially approaching a threshold that would trigger a regulatory requirement, and may require further evaluation or context. Lacking any mobile source emission regulatory thresholds, this threshold is used to equitably assess and compare mobile source emissions.

3.1.3.1 No Action Alternative:

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to existing emissions or sources beyond those considered under baseline conditions. Therefore, no significant impacts to air quality or air resources would occur with implementation of the No Action Alternative.

3.1.3.2 Action Alternative:

The study area for the analysis to air quality associated with the Action Alternative is the City of Portsmouth, which is part of the Hampton Roads Intrastate Air Quality Control Region.

Under the Action Alternative, the Navy would implement the ECMs presented in Section 2.1. Potential impacts from implementing ECM 10 and ECM 16 are discussed below. Potential impacts from implementing ECMs 8 and 14 are addressed collectively and qualitatively. Refer to Appendix E for ECM descriptions, building or site locations, and the applicable Categorical Exclusions (CatExes) for ECMs 8 and 14.

ECM 10 – Energy Security, & ECM 16 – Industrial Wastewater Treatment Plant:

Criteria Pollutant Construction Emissions:

All construction activities were estimated based on a single year of construction, even though the time frame for the projects could exceed one year. This was done to provide a conservative approach. Detailed calculations have been included in Appendix F. A summary is provided in Table 3.1-2.

A short - term impact to air quality during the construction period is expected. As indicated in Table 3.1-2, the criteria pollutant emissions estimated for the construction of the CHP Plant and IWTP facilities would be less than significant.

Table 3.1-2: Criteria Pollutant Construction Emissions For ECM 10 & ECM 16 (Tons Per Year)

Activity	VOC	CO	NOx	SO_2	PM_{10}	$PM_{2.5}$
Construction & Demolition	0.47	6.91	3.37	0.05	0.19	0.19
Comparative Threshold	*100*	*100*	*100*	*100*	*100*	*100*

Notes:
1. A comparative threshold of 100 tons per year for the criteria pollutants in this table were derived, for the most part, from 40 Code of Federal Regulations (CFR 93.153(b)(2): Determining Conformity Of General Federal Actions To State Or Federal Implementation Plans, by comparing the estimated emissions from construction activities for the Implementation of the ECMs against the maintenance pollutant General Conformity *de minimis* thresholds for a hypothetical Federal Action in an Ozone Maintenance Area which is located outside an Ozone Transport Region (OTR).
2. As stated in Section 3.1.1.1 of the EA, NNSY is located in a region that is categorized as in "Attainment For All Criteria Pollutants" & USEPA's most recent ozone implementation plans remove the conformity requirement for standards that have been revoked; thus far, the 1-hour ozone standard of 0.012 parts per million (ppm) and the 8-hour ozone standard of 0.08 ppm have been revoked.
3. Federal facilities in the Hampton Roads area do not need to conduct transportation or general conformity reviews.
4. See: https://www.deq.virginia.gov/Programs/Air/AirQualityPlanningEmissions/TransportationandGeneralConformity.aspx.

Criteria Pollutant Operational Emissions:

The CHP Plant would undergo review by the Virginia Department of Environmental Quality (DEQ) as a stationary source and would require permitting to meet regulatory requirements. Based on a previous determination made by the Virginia DEQ, NNSY has been determined to be a PSD major stationary source due to the relationship with the adjoining *Wheelabrator* power plant. As such, emissions are compared to PSD Significant Emission Rates to determine which must be evaluated under the PSD regulations. NO_X, PM_{10}, $PM_{2.5}$, and GHGs each are above their respective Significant Emission Rates and trigger a PSD analysis. A Best Available Control Technology (BACT) review is required for all triggered pollutants, and air dispersion modeling is required to analyze NO_X, PM_{10}, and $PM_{2.5}$ emissions under the PSD program. VOC exceeds the Virginia DEQ thresholds for Article 6 permitting per 9VAC5 – 50 - 260; and therefore, State BACT applies to VOC. The potential to emit for criteria pollutants and their respective SERs are indicated in Table 3.1-3.

Table 3.1-3: Prevention Of Significant Deterioration Permitting Analysis [1] (Tons Per Year)

Pollutant	Potential Emissions	Significant Emission Rates	PSD Triggered (Yes / No)
CO	95.97	100	**No**
NO_X	74.23	40	**Yes**
PM_{10}	17.76	15	**Yes**
$PM_{2.5}$	17.70	10	**Yes**
Total PMs	17.78	25	**No**
SO_2	6.81	40	**No**
VOC	13.08	40	**No[2]**
CO_{2e}	262,568	75,000	**Yes**

Source: [1] Trinity Consultants, May 2019.
Note: [2] While VOCs are exempt from Federal PSD regulations, they exceed the Virginia threshold for BACT determination. Hence, VOC emissions are analyzed along with the other pollutants exceeding the Federal thresholds.

A BACT analysis performed by Trinity Consultants concluded that using a Selective Reduction Catalyst system to reduce NO_X and VOCs would not be cost effective. It is not technically feasible to add a control to the operation for PM emissions. The recommended BACT for the CHP Plant is to employ clean fuels such as natural gas and ultra - low sulfur diesel fuel with low NO_X burners, and good combustion practices.

The CHP Plant requires a PSD construction permit due to the emissions anticipated. Because the CHP Plant would be constructed and operated solely for NNSY, it would be incorporated into the NNSY Title

V permit as a major modification. Operational emissions for the CHP Plant would be evaluated as part of the PSD permitting process in order to ensure that the facility would be in compliance with all relevant air quality standards. The emission sources must apply BACT and perform a modeling analysis to demonstrate compliance with the NAAQS and the PSD increments. The issuance of a PSD permit would signify that the CHP Plant would demonstrate compliance with all ambient standards and would result in no significant deterioration of air quality in the area. Table 3.1-4 compares 2017 emissions at NNSY and the proposed maximum emissions once the CHP Plant is constructed and operational. Future year emissions assume that all other activity emissions at NNSY stay the same.

Table 3.1-4: Net Change Emissions Associated With The Proposed Action (Tons Per Year)

Activity	VOC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$
NNSY, 2017 Emissions	**29.39**	**2.50**	**10.08**	**0.0**	**6.13**	**5.94**
NNSY, Future Emissions with CHP Plant	**42.47**	**98.47**	**84.31**	**6.81**	**23.89**	**23.64**
Net Change	**+ 13.08**	**+ 95.97**	**+ 74.23**	**+ 6.81**	**+ 17.76**	**+ 17.70**

It is unclear at what capacity the *Wheelabrator* facility would operate once the CHP Plant was operational. Since any changes to *Wheelabrator* are unknown, it is assumed that the facility would continue to operate under its current Title V permit.

The addition of the CHP Plant would result in increases to all criteria pollutants, particularly increases in NO_x and CO. Because the CHP Plant is a stationary source, it is regulated under the CAA and would be permitted and operated in accordance with Federal and State criteria pollutant requirements. It is not anticipated that operation of the CHP Plant would itself result in violations of the NAAQS and therefore implementation of the Proposed Action does not carry a significant impact.

Greenhouse Gases:

Implementation of the Action Alternative would contribute directly to emissions of GHGs from the combustion of fossil fuels. Demolition and construction activities would generate approximately 406 tons (368 metric tons) of CO_{2e}. Once the facility is operational, routine activities would generate up to approximately 262,568 tons per year from operations at the CHP Plant. While the operation of the CHP Plant would eliminate the need for NNSY to purchase the equivalent amount of electricity from an outside utility, the generation of that quantity of electricity may not be reduced at the utility. Therefore, all of the GHG emissions generated at the CHP Plant would be considered an increase in GHG emissions, as indicated in Table 3.1-5. The data in this table include the assumption that the *Wheelabrator* facility would continue to operate at levels similar to those occurring presently. GHGs would need to be reported to USEPA annually under the Greenhouse Gas Reporting Program.

Table 3.1-5: Estimated Annual Greenhouse Gas Operational Emissions For *Wheelabrator* Facility & Combined Heat & Power Plant (Tons Per Year)

Facility	GHGs in TPY CO_{2e}
Wheelabrator [1]	238,093
Combined Heat & Power Plant [2]	263,000
TOTAL	**501,093**

Sources: [1] USEPA, 2018; [2] Trinity Consultants, 2019.

While the GHG emissions generated from the construction activities and facility operations alone would not be enough to cause global warming, in combination with past and future emissions from all other sources they would contribute incrementally to the global warming that produces the adverse effects of climate change. Because the Proposed Action would likely cause a substantial increase in GHG

emissions, activities to reduce these emissions are recommended. These could include offsetting these emissions with documented actions at other area Navy activities or in other NNSY operations that would reduce GHGs, and participating in cap and trade of emissions once this program becomes available for Virginia facilities. GHGs would be limited as much as possible through good combustion and work practices.

ECMs Categorically Excluded:

ECMs 8 and 14 would be implemented at NNSY Mainsite, Scott Center, Southgate and St. Juliens Creek annexes. These ECMs consist primarily of upgrading and installing efficient energy systems and fixtures within existing facilities to manage and reduce energy consumption. None of these projects would result in a short - term or long - term increase in emissions generated by NNSY.

3.2 Water Resources:

This discussion of water resources includes: groundwater, surface water, wetlands, floodplains, and coastal zone. Wildlife is addressed in Section 3.5, Biological Resources.

3.2.1 Regulatory Setting:

Groundwater is water that flows or seeps downward and saturates soil or rock, supplying springs and wells. Groundwater quality and quantity are regulated under several statutes and regulations, including the Safe Drinking Water Act (SDWA), the Federal law that protects public drinking water supplies throughout the nation.

The Clean Water Act of 1977 (CWA), which amends the Federal Water Pollution Control Act of 1972, (FWPCA) and subsequent amendments were designed to assist in restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. The act covers the discharge of pollutants into navigable waters, wastewater treatment management, and protection of relevant fish, shellfish, and wildlife. Section 402 of the CWA established the National Pollutant Discharge Elimination System (NPDES) to regulate the discharge of effluents into waters of the United States. The Act establishes Federal limits, through the NPDES program, on the amounts of specific pollutants that can be discharged into surface waters to restore and maintain the chemical, physical, and biological integrity of the water. Surface water resources generally consist of wetlands, lakes, rivers, and streams. The NPDES program regulates the discharge of point (i.e., end of pipe) and nonpoint sources (i.e., stormwater) of water pollution.

The Virginia authorized NPDES stormwater program requires construction site operators engaged in clearing, grading, and excavating activities that disturb one acre or more to obtain coverage under an NPDES Construction General Permit for stormwater discharges. As part of the 2010 Final Rule for the CWA, titled *Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category*, activities covered by this permit must implement non - numeric erosion and sediment controls and pollution prevention measures. Section 438 of the Energy Independence and Security Act of 2007 (EISA) establishes storm water design requirements for development and redevelopment projects. Under these requirements, Federal facility projects larger than 5,000 SF must "maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow."

Wetlands are areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of

vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. EO 11990, *Protection of Wetlands,* requires that Federal agencies adopt a policy to avoid, to the extent possible, long - and short - term adverse impacts associated with destruction and modification of wetlands and to avoid the direct and indirect support of new construction in wetlands whenever there is a practicable alternative. Wetlands are currently regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the CWA. The Act requires that Virginia establish a Section 303(d) list to identify impaired waters and establish total maximum daily load for the sources causing the impairment.

Floodplains are areas of low - level ground present along rivers, stream channels, large wetlands, or coastal waters. Floodplain boundaries are most often defined in terms of frequency of inundation, that is, the 100 - year and 500 - year flood. Floodplain delineation maps are produced by the Federal Emergency Management Agency (FEMA) and provide a basis for comparing the locale of the Proposed Action to the floodplains. EO 11988, *Floodplain Management*, requires Federal agencies to avoid to the extent possible the long - and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development unless it is the only practicable alternative. Flood potential of a site is usually determined by the 100 - year floodplain, which is defined as the area that has a one percent chance of inundation by a flood event in a given year. EO 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, amends EO 11988 and establishes the Federal Flood Risk Management Standard (FFRMS) to improve the nation's resilience to current and future flood risks, which are anticipated to increase over time due to the effects of climate change and other threats.

Through the Coastal Zone Management Act of 1972 (CZMA), Congress established National policy to preserve, protect, develop, restore, or enhance resources in the coastal zone. This Act encourages coastal states to properly manage use of their coasts and coastal resources, prepare and implement coastal management programs, and provide for public and governmental participation in decisions affecting the coastal zone. Actions occurring within the coastal zone commonly have several resource areas (land or water use or natural resource) that may be relevant to the CZMA. Section 307 of the CZMA stipulates that when a Federal project involves reasonably foreseeable impacts on any coastal use or resource, the action must be consistent to the maximum extent practicable with the enforceable policies of the affected state's Federally approved coastal management plan. However, Federal lands, which are "lands the use of which is by law subject solely to the discretion of the Federal Government, its officers, or agents," are statutorily excluded from the State's "coastal uses or resources." If, however, the proposed Federal activity affects coastal uses or resources beyond the boundaries of the Federal property (i.e., has spillover effects), the CZMA Section 307 Federal consistency requirement applies.

As a Federal agency, the Navy is required to determine whether its proposed activities would affect the coastal zone. This takes the form of a Coastal Consistency Determination (CCD), a Negative Determination (ND), or a determination that no further action is necessary. The Commonwealth of Virginia has developed and implemented a Federally approved Coastal Zone Management Program describing coastal legislation and enforceable policies (Virginia DEQ June 30, 2009).

3.2.2 Affected Environment:

The following discussions provide a description of the existing conditions for each of the categories under water quality resources that have the potential to be affected by implementing the Proposed Action.

3.2.2.1 Ground Water:

Groundwater in the vicinity of NNSY is present in a series of shallow and deeper aquifers. The aquifers closest to ground surface are the Columbia aquifer (surficial) and the Yorktown-Eastover aquifer (deeper). The Columbia (surficial) aquifer occurs from ground surface to several feet below ground surface and is up to 25 feet thick in the vicinity of NNSY. It is typically found at NNSY within 15 feet below ground surface. The Yorktown - Eastover aquifer occurs from 75 to 100 feet below ground surface and is more than 100 feet thick in the vicinity of NNSY. The Yorktown - Eastover aquifer is widely used as a source of groundwater for industrial, municipal, commercial, and domestic uses (McFarland and Bruce, 2006). The water in the Columbia and Yorktown-Eastover aquifers is brackish and not used for drinking water in the vicinity of NNSY.

3.2.2.2 Surface Water:

NNSY mainsite is bounded on the east by the Southern Branch of the Elizabeth River, which flows north and is joined by the Eastern Branch approximately one mile downstream from NNSY. The main stem of the Elizabeth River joins the James River approximately ten miles north of NNSY and discharges to Chesapeake Bay approximately two miles farther north. NNSY is in the lower portion of the James River watershed, the largest watershed in Virginia (Virginia Department of Conservation and Recreation, 2017). The Southern Branch of the Elizabeth River is a tidal estuary with a mean tidal range at NNSY of approximately 3.2 feet. Several area creeks flow into the Southern Branch of the Elizabeth River, including Paradise Creek and St. Juliens Creek (Figure 3.2-1).

Sections 305(b) and 303(d) of the CWA require States to conduct water quality assessments and report water bodies that do not meet Federal water quality standards or that have impaired uses. Impaired waters contain levels of contamination higher than those allowed by water quality standards and therefore cannot support a particular designated use. The Southern Branch of the Elizabeth River and Paradise Creek are considered impaired waters (Virginia DEQ, 2014) although not all parts of the Elizabeth River are impaired in all categories. Total maximum daily load studies are under way for the Southern Branch of the Elizabeth River, Paradise Creek, and other area waters. Total maximum daily load is a measure of the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards. Under Section 303(d) of the CWA, States are required to develop total maximum daily loads for impaired water under their jurisdictions.

Industrial discharges to area waters are regulated, controlled, and monitored under the Virginia Pollutant Discharge Elimination System (VPDES) program administered by Virginia DEQ. Under VPDES permit VA0005215, NNSY maintains more than 75 permitted outfalls that empty into the Southern Branch of the Elizabeth River. Most of the permitted outfalls are stormwater outfalls. Under the VPDES permit, NNSY maintains a Stormwater Pollution Prevention Plan (SPPP) that identifies potential sources of stormwater contamination to area waters and Best Management Practices (BMP) to minimize pollutants that could contaminate those waters.

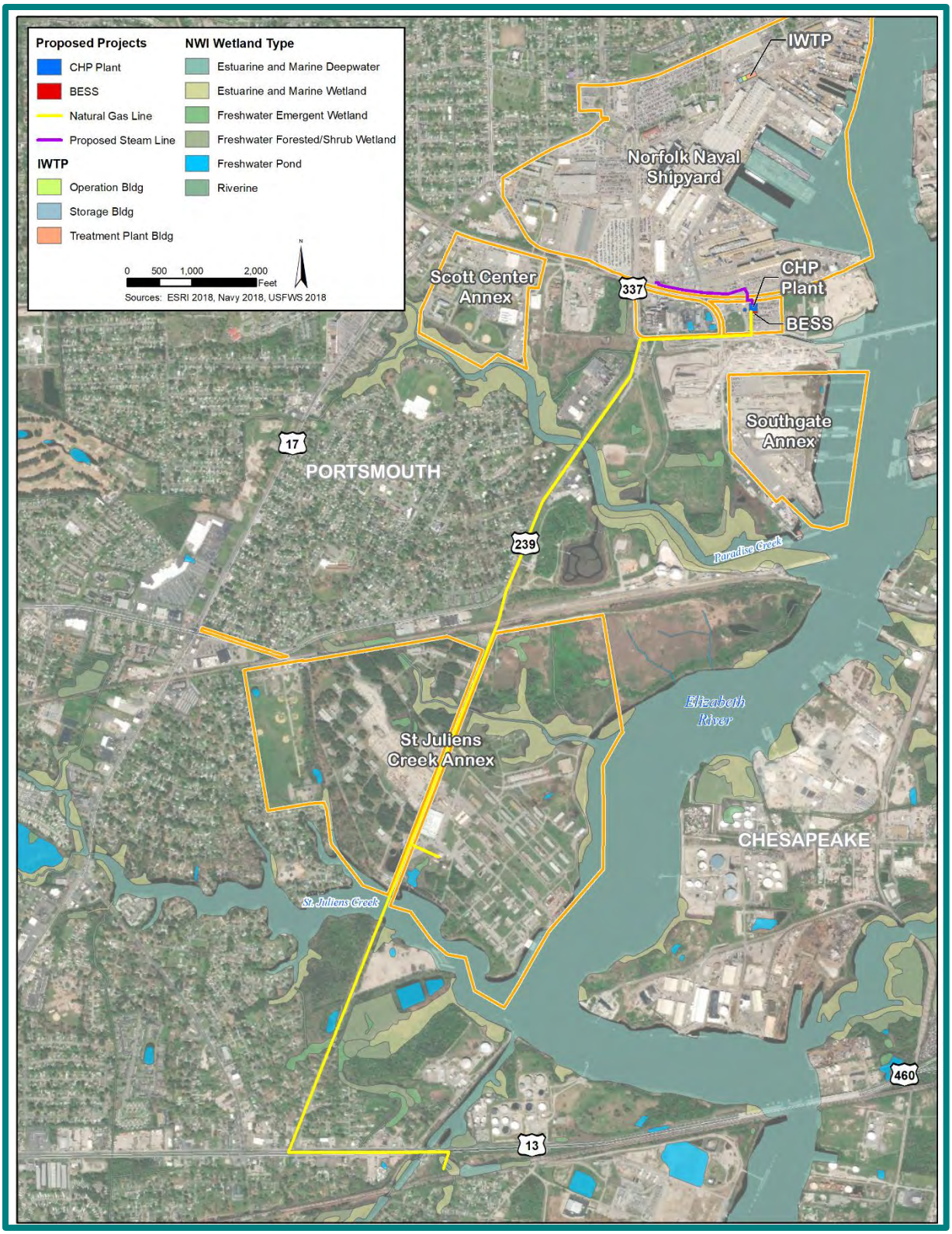

Figure 3.2-1: Location Of Water Resources In The Affected Environment

The Virginia Department of Conservation and Recreation regulates stormwater discharges from other sources, such as construction projects, under the Virginia Stormwater Management Program. Stormwater runoff from construction projects is regulated and controlled under the Virginia Stormwater Management Law and Regulations and erosion is regulated and controlled under the Virginia Erosion and Sediment Control Law and Regulations, as administered by the Virginia Department of Conservation and Recreation. South Gate Annex and St. Juliens Creek Annex maintain VPDES permitted stormwater outfalls for discharge to surface waters (VAR050375 and VAR051592, respectively). Scott Center Annex maintains a municipal separate storm sewer system (MS4) permit that regulates discharges under the Virginia Stormwater Management Act, the Virginia Stormwater Management Program, and the CWA as point source discharges.

3.2.2.3 Wetlands:

No jurisdictional wetlands are found on NNSY Mainsite; however, wetlands have been identified within the Scott Center and St. Juliens Creek annexes (Figure 3.2-1).

3.2.2.4 Floodplains:

Approximately 85 percent of NNSY Mainsite is within a 100 - year floodplain, as mapped by the FEMA. The floodplain is associated with the Southern Branch of the Elizabeth River. The remainder of NNSY is within the river's 500 - year floodplain. The land that makes up NNSY is densely developed and does not provide significant flood storage capacity (Navy, 2011).

3.2.2.5 Coastal Zone:

Federal lands, such as NNSY, are "lands the use of which is by law subject solely to the discretion of . . . the Federal Government, its officers, or agents" and are statutorily excluded from the CZMA's definition of Virginia's "coastal zone" (16 U.S.C. §1453(1)). If, however, the proposed Federal activity affects coastal resources or uses beyond the boundaries of the Federal property (i.e., has spillover effects) or is located outside Federal property, the CZMA Section 307 Federal consistency requirement applies.

Although NNSY is statutorily excluded from the coastal zone, the Proposed Action is subject to review under the CZMA Section 307 Federal consistency determination requirement because of its potential to affect coastal uses or resources of Virginia's coastal zone beyond the boundaries of the Federal property. The Virginia DEQ is the lead agency responsible for implementing the Commonwealth's Federally - approved Coastal Zone Management Program and coordinating Federal consistency reviews.

3.2.3 Environmental Consequences:

The analysis of water resources looks at the potential impacts on groundwater, surface water, wetlands, floodplains, and coastal zone. Groundwater analysis focuses on the potential for impacts to the quality, quantity, and accessibility of the water. The analysis of surface water quality considers the potential for impacts that may change the water quality, including both improvements and degradation of current water quality. The impact assessment of wetlands considers the potential for impacts that may change the local hydrology, soils, or vegetation that support a wetland. The analysis of floodplains considers if any new construction is proposed within a floodplain or may impede the functions of floodplains in conveying floodwaters.

3.2.3.1 No Action Alternative:

Under the No Action Alternative, the Proposed Action would not occur and there would be no impacts to water resources beyond baseline conditions. Therefore, no significant impacts to water resources would occur with implementation of the No Action Alternative.

3.2.3.2 Action Alternative:

The study area for the analysis of effects to water resources associated with the Action Alternative is NNSY Mainsite, Scott Center, Southgate and St. Juliens Creek annexes.

Under the Action Alternative, the Navy would implement numerous ECMs as presented in Section 2.1. Potential impacts from implementing ECM 10 and ECM 16 are discussed below. Potential impacts from implementing ECMs 8 and 14 are addressed collectively and qualitatively. Refer to Appendix E for ECM descriptions, building or site locations, and the applicable CatExes for ECMs 8 and 14.

The Navy prepared and submitted a CCD to the Virginia DEQ pursuant to its responsibilities under the CZMA for implementing the ECMs described under the Proposed Action and requested coordination concerning the potential effects on coastal resources within the study area. The Navy determined the projects under the Action Alternative would be consistent with the enforceable policies of the Virginia Coastal Zone Management Program. Appendix D provides this correspondence.

ECM 10 - Energy Security:

Site preparation and construction activities would not extend below the surface to a depth that would directly affect the underlying aquifers. Potential fuel or chemical spills could occur during construction activities; however, immediate cleanup would prevent infiltration into groundwater resources. No surface waters are located adjacent to the proposed construction location; however, BMPs would be employed during ground - disturbing activities to eliminate or reduce the potential for erosion, sedimentation, and storm water pollutants. A Virginia Erosion and Sediment Control Plan would be adhered to during construction. As part of NNSY's VPDES permit, outfalls for stormwater from industrial areas are monitored regularly for selected metals (e.g., copper and zinc), general water quality parameters (e.g., flow and pH), and other parameters depending on the outfall (Navy, 2011). With proper use of BMPs, impacts to surface water from runoff would be negligible. No United States Fish and Wildlife Service (USFWS) National Wetlands Inventory wetlands are mapped within NNSY Mainsite or in the vicinity of the proposed location of the CHP Plant and Battery Energy Storage System (BESS) thereby resulting in no significant impact to groundwater, surface water, or wetlands.

Installation of the natural gas pipeline would occur primarily within the existing utility easement and would involve horizontal directional boring to minimize excavation and disturbance to water resources (Figure 3.2-1). BMPs would be used during the installation process to reduce the potential for impacts. As such, no significant impact to water resources would be anticipated.

The location proposed for ECM 10 would be within the 100 - year floodplain. This location is currently covered with pavement, which does not provide any flood storage capacity. The CHP Plant would be built on concrete piles to raise the floor to 500 - year flood elevation or to 4 feet above the 100 - year flood elevation, whichever is higher. Consistent with EO 11988, the Navy would ensure compliance with all floodplain management regulations. Implementing ECM 10 at this location would not be expected to degrade the floodplain value. CHP Plant operations would not be expected to impact water resources as no new impervious surface would be constructed; stormwater runoff would continue to be monitored

regularly as part of NNSY's VPDES permit. No significant impact to water resources from implementing ECM 10 would be anticipated.

ECM 16 - Industrial Wastewater Treatment Plant:

Potential impacts to water resources from implementing ECM 16 would be similar as described for ECM 10. Impacts to groundwater and surface water during site preparation and construction would be negligible. A Virginia Erosion and Sediment Control Plan would be adhered to during construction. There would be no impact to wetlands as none exist within NNSY Mainsite. The location of the existing and proposed IWTP is within the 100 - year floodplain. Consistent with EO 11988, the Navy would ensure compliance with all floodplain management regulations. Operational activities would have negligible impacts to water resources. The type and amount of treated effluent discharged to the Southern Branch of the Elizabeth River would remain essentially the same and the discharged waters would continue to be monitored in accordance with VPDES permit VA0005215. As such, no significant impact to water resources from implementing ECM 16 would be anticipated.

ECMs Categorically Excluded:

ECMs 8 and 14 would be implemented at NNSY Mainsite, Scott Center, Southgate and St. Juliens Creek annexes. These ECMs consist primarily of upgrading and installing efficient energy systems and fixtures within existing facilities to manage and reduce energy consumption. Implementing these ECMs would not result in any direct or indirect impacts to water resources.

In summary, implementation of the Action Alternative would not result in any significant direct or indirect impacts to water resources (i.e., groundwater, surface water, wetlands, and floodplains) during the construction or operational phases through use of a Virginia Erosion and Sediment Control Plan, BMPs, and compliance with floodplain management regulations and VPDES permit VA0005215 permitted discharges. In correspondence dated August 5, 2019, the Virginia DEQ concurred with the Navy's Coastal Consistency Determination findings provided all applicable permits and approvals are obtained prior to implementing the actions proposed (see Appendix D).

3.3 Cultural Resources:

This discussion of cultural resources includes prehistoric and historic archaeological sites; historic buildings, structures, and districts; and physical entities and human - made or natural features important to a culture, a subculture, or a community for traditional, religious, or other reasons. Cultural resources can be divided into three major categories:

- **Archaeological Resources** (prehistoric and historic) are locations where human activity measurably altered the earth or left deposits of physical remains.
- **Architectural Resources** include standing buildings, structures, landscapes, and other built - environment resources of historic or aesthetic significance.
- **Traditional Cultural Properties** may include archaeological resources, structures, neighborhoods, prominent topographic features, habitat, plants, animals, and minerals that Native Americans or other groups consider essential for the preservation of traditional culture.

3.3.1 Regulatory Setting:

Cultural resources are governed by several Federal laws and regulations, including the National Historic Preservation Act (NHPA), Archaeological and Historic Preservation Act (AHPA), American Indian Religious

Freedom Act (AIRFA), Archaeological Resources Protection Act of 1979 (ARPA), and the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA). Federal agencies' responsibility for protecting historic properties is defined primarily by Sections 106 and 110 of the NHPA. Section 106 requires Federal agencies to take into account the effects of their undertakings on historic properties. Section 110 of the NHPA requires Federal agencies to establish—in conjunction with the Secretary of the Interior — historic preservation programs for the identification, evaluation, and protection of historic properties. Cultural resources also may be covered by State, Local, and Territorial laws.

3.3.2 Affected Environment:

Cultural resources listed in the National Register of Historic Places (NRHP) or eligible for listing in the NRHP are "historic properties" as defined by the NHPA. The list was established under the NHPA and is administered by the National Park Service (NPS) on behalf of the Secretary of the Interior. The NRHP includes properties on public and private land. Properties can be determined eligible for listing in the NRHP by the Secretary of the Interior or by a Federal agency official with concurrence from the applicable State Historic Preservation Officer (SHPO). A NRHP - eligible property has the same protections as a property listed in the NRHP. Historic properties include archaeological and architectural resources.

In addition, some cultural resources, such as Native American sacred sites or traditional resources may not be historic properties, but they are also evaluated under NEPA for potential adverse effects from a major Federal action. These resources are identified through consultation with appropriate Native American or other interested groups. The Federally recognized Native American Tribes in the Commonwealth of Virginia are: *Chickahominy Indian Tribe, Inc.*; *Chickahominy Indians - Eastern Division*; *Monacan Indian Nation*; *Nansemond Indian Tribe*; *Pamunkey Indian Tribe*; *Rappahannock Tribe, Inc.*; and *Upper Mattaponi Tribe*.

The Navy has conducted inventories of cultural resources at NNSY Mainsite, Scott Center, Southgate, and St. Juliens Creek annexes to identify properties that are listed or potentially eligible for listing in the NRHP (Navy, 2012c).

The Area of Potential Effects (APE) for cultural resources is the geographic area or areas within which an undertaking (project, activity, program or practice) may cause changes in the character or use of any historic properties present. The APE is influenced by the scale and nature of the undertaking and may be different for various kinds of effects caused by the undertaking. For this Proposed Action, the Navy determined that the APE is the NNSY Mainsite, Scott Center, Southgate, and St. Juliens Creek annexes. Due to potential visual effects from the construction of the CHP Plant and BESS, the APE also includes an area south and east of NNSY Mainsite (Figure 3.3-1). For archaeological resources, potential effects would be limited to the areas within the APE where ground disturbance would occur. Specifically, these areas are associated with the demolition, excavation, and construction activities for ECM 10 and ECM 16 (Figures 2.1-2 through 2.1-4).

3.3.2.1 Archaeological Resources:

A review of previous archaeological investigations at NNSY indicates that no archaeological sites have been identified within the proposed locations for either ECM 10 – Energy Security (CHP Plant / MCS / BESS) or ECM 16 - IWTP (Navy, 2012c). An archaeological resources overview and sensitivity model was completed for NNSY in 1997 (R. Christopher Goodwin and Associates, Inc., 1997), and revised in 2010

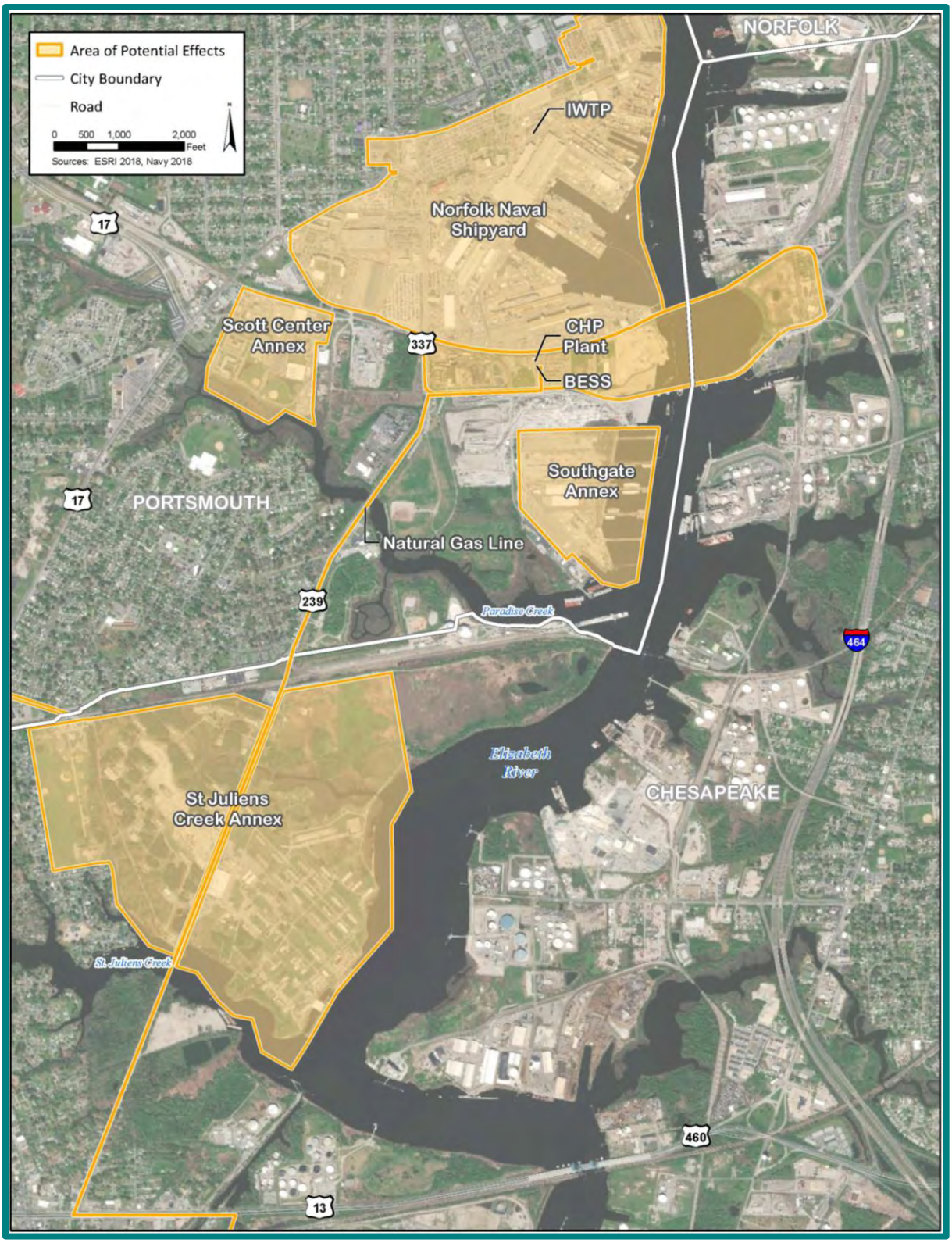

Figure 3.3-1: Area Of Potential Effects For Cultural Resources In The Affected Environment

(SEARCH, 2010). The sensitivity model divided the shipyard into study zones based on periods of historic development.

The proposed location for ECM 10 is within Archaeological Study Zone 4. R. Christopher Goodwin and Associates (1997) and SEARCH (2010) identified Archaeological Study Zone 4 as containing approximately six to eight feet of fill and having low potential for archaeological resources. There are no identified archaeological sites within Archaeological Study Zone 4. The proposed location for ECM 16 is in Archaeological Study Zone 3, an area that has been identified as having low archaeological potential (R. Christopher Goodwin and Associates, Inc., 1997; SEARCH, 2010).

Three archaeological investigations have been conducted at St. Juliens Creek Annex. They include two separate Phase I investigations, one in 1992 and another in 1997, and a Phase I investigation and characterization study in 2010. The 1992 survey identified three archaeological sites: 44PM0048, 44PM0049, and 44PM0050. The Virginia SHPO concurred that these three sites are potentially eligible for inclusion in the NRHP and need Phase II evaluation (Navy, 2004). The 2010 survey identified four sites (44CS0288, 44CS0289, 44CS0290, and 44CS0291); the SHPO concurred all four sites are not eligible. In addition, the 2010 Phase I investigation and characterization study determined the remainder of St. Juliens Creek Annex was disturbed and retained no potential to contain intact, significant archaeological resources (Navy, 2012c).

A search of the Virginia Cultural Resource Information System (V-CRIS) revealed that two Phase I cultural resources surveys have been conducted in an area along Elm Avenue that overlaps with an approximately 1,600 - foot long portion of the proposed natural gas line to the CHP Plant as part of ECM 10. A 2008 archaeological and historical survey of the Atlantic Wood Industries, Inc., Superfund site (Gougeon, 2008) and a 2009 Phase I cultural resources survey for the South Norfolk Jordan Bridge Project (Levinthal et al., 2009) did not identify any archaeological sites along Elm Avenue. No archaeological surveys have been conducted along any other portion of the proposed natural gas line under ECM 10, which consists of existing utility easements and road right – of - way. The route of the proposed natural gas line likely has been disturbed for installation of utilities and construction of the roads.

3.3.2.2 Architectural Resources:

The affected environment includes seven historic architectural properties (Table 3.3-1). Of these, two are listed in the NRHP, both of which are at NNSY: Quarters A, B, and C (Buildings 700, 701, and 702) and Dry Dock No. 1 (Building 911). Dry Dock No. 1 is also designated a National Historic Landmark (NHL). The other seven architectural properties in the affected environment have been determined eligible for listing in the NRHP or are considered to be potentially eligible (Navy, 2012c); (Virginia Department of Historic Resources, 2019). These properties include a historic district at NNSY, a historic district at St. Juliens Creek Annex, two bridges, and the site of a Civil War warship battle.

The NNSY Historic District was determined to be eligible for listing in the NRHP in 2004 (Navy, 2004). The NNSY Historic District is significant for its association with the development of the U.S. Navy from the nineteenth through the mid - twentieth centuries, particularly during the Civil War and World Wars I (WWI) and World War II (WWII), and for representing the evolution of naval transportation and the shipbuilding industry during this period. The District is also significant for embodying distinctive characteristics of Naval architectural and engineering. The period of significance is 1827 - 1945. The District contains 68 contributing resources (Navy, 2004; 2012c).

Table 3.3-1: Historic Architectural Properties In The Affected Environment

DHR No.	Property Name	Description	NRHP Status
114-5471	**Battle Of The Ironclads**	Site of first battle of ironclad ships in 1862; the areas that retain integrity are essentially on water	**Potentially Eligible**
124-0016; 124-0185-0211 – 0213	**Quarters A, B, and C (Buildings 700, 701, 702)**	Three 2.5-story, brick, Federal-style dwellings built in 1837	**Individually Listed 1974**
124-0029; 124-0185-0271	**Dry Dock No. 1 (Building 911)**	Constructed in 1827 of large blocks of granite that are stepped from top to bottom; metal gate (not original) at river end of dock; granite coping blocks and metal stanchions ring the edge of the dock	**Individually Listed 1970 National Historic Landmark 1971**
124-0054/ 124-0185	**Norfolk Naval Shipyard Historic District**	Military industrial complex associated with development of the U.S. Navy in the 19th and 20th centuries; distinctive examples of Naval architectural and engineering; 68 contributing resources; 1827–1945 period of significance	**Determined Eligible**
131-5001	**St. Juliens Creek Historic District**	Military industrial complex associated with naval munitions production and storage during World War I; primarily one-story, linear masonry or concrete industrial buildings; 45 contributing resources; 1897–1919 period of significance	**Determined Eligible**
131-5033	**Jordan Bridge**	Five-span Pratt camelback steel truss bridge built 1926–1928 across the Southern Branch, Elizabeth River	**Determined Eligible (Demolished)**
131-5383	**Norfolk & Portsmouth Belt Line Railroad Bridge**	Ca. 1920 four-span Pratt camelback steel truss lift bridge spanning Elizabeth River	**Determined Eligible**

Sources: Navy, 2012c; Virginia Department of Historic Resources, 2019.

The location of ECM 16 - IWTP is within the Industrial Area Precinct of the Norfolk Naval Shipyard Historic District (DHR ID No. 124-0054/124-0185). The Industrial Area Precinct is a large area within the District, encompassing the active, industrial waterfront of NNSY. The precinct includes 26 contributing resources dating from World War I to World War II. Contributing structures include dry docks, repair piers, dock cranes, and the portal crane rail system. Contributing buildings primarily consist of metal - clad shops of immense scale.

As described in Section 2.1.1.3, implementation of ECM 16 - IWTP would include demolishing the existing IWTP (Building 1485, and four component structures directly to the east and south), Building 1250, two aboveground diesel fuel tanks (1586 and 1587) and an underground spill containment tank, and constructing the new IWTP in their place. These buildings and structures are noncontributing resources to the Industrial Area Precinct. Construction of the IWTP would have potential indirect visual effects to three contributing resources within the Industrial Area Precinct, which are located adjacent to the south of the site. Five other buildings adjacent to the IWTP site are all noncontributing resources. Table 3.3-2 lists the buildings and structures within and adjacent to the site of ECM 16 - IWTP (Figure 2.1-3).

Table 3.3-2: Norfolk Naval Shipyard Historic District Buildings Within & Adjacent To Proposed ECM 16 Project Site

Building Number	Name	Year Built	Contributing to District ?
1250	Unknown	Unknown	*No*
1485	Industrial Wastewater Treatment Plant	1977	*No*
1586	Aboveground Diesel Tank	Unrecorded	*No*
1587	Aboveground Diesel Tank	Unrecorded	*No*
163	Shipfitters Shop	1918	**Yes**
174	Utility Building	1921	*No*
195	Galvanizing Shop	1920	**Yes**
234	Sheet Metal Shop	1937	**Yes**
1326	Equipment Repair Shop	1948	*No*
1512	Hazardous Materials Transfer Building	1951	*No*
1557	IWTP Pump Station	1990	*No*
1580	Diesel Generator Facility	ca. 1999	*No*

Sources: Navy, 2004, 2012c; Virginia Department of Historic Resources, 2019.

3.3.2.3 Traditional Cultural Properties:

There are no known traditional cultural properties with spiritual and / or cultural importance to a Native American Indian Tribes on NNSY. Hence, the Navy has not consulted with the seven Federally recognized Native American Tribes in the Commonwealth of Virginia (*Chickahominy Indian Tribe, Inc.*; *Chickahominy Indians-Eastern Division*; *Monacan Indian Nation*; *Nansemond Indian Tribe*; *Pamunkey Indian Tribe*; *Rappahannock Tribe, Inc.*; and *Upper Mattaponi Tribe*) to determine if the Proposed Action might affect resources of religious and cultural significance.

3.3.3 Environmental Consequences:

Analysis of potential impacts to cultural resources considers both direct and indirect impacts. Direct impacts may be the result of physically altering, damaging, or destroying all or part of a resource, altering characteristics of the surrounding environment that contribute to the importance of the resource, introducing visual, atmospheric, or audible elements that are out of character for the period the resource represents (thereby altering the setting), or neglecting the resource to the extent that it deteriorates or is destroyed.

3.3.3.1 No Action Alternative:

Under the No Action Alternative, the Proposed Action would not occur and there would be no effect to cultural resources beyond baseline conditions. Therefore, no significant impacts to cultural resources would occur with implementation of the No Action Alternative.

3.3.3.2 Action Alternative:

The study area for the analysis of effects to cultural resources associated with the Action Alternative is the same as the APE, which, as identified in Section 3.3.2, includes the NNSY Mainsite; Scott Center, Southgate, and St. Juliens Creek annexes; and an area south and east of NNSY Mainsite (Figure 3.3-1).

Under the Action Alternative, the Navy would implement numerous ECMs as presented in Section 2.1. Potential impacts from implementing ECM 10 and ECM 16 are discussed below. Potential impacts from

implementing ECMs 8 and 14 are addressed collectively and qualitatively. Refer to Appendix E for ECM descriptions, building or site locations, and the applicable CatExes for ECMs 8 and 14.

ECM 10 - Energy Security:

Archaeological Resources:

No previously identified archaeological sites are within areas of the APE where ground - disturbing activities for construction of the CHP Plant and associated structures (i.e., BESS, fuel oil tank), overhead steam line, and natural gas line would occur. Further, the ground - disturbing activities are within or adjacent to areas of NNSY and St. Juliens Creek Annex that have been identified as having low to no archaeological potential. The route of the proposed natural gas line follows existing utility (power line) easement or road right – of - way. The natural gas line would be directionally bored to minimize ground disturbance. Ground disturbance would be limited to preparation and spotting holes that may be excavated for bores along the route. Given the prior ground disturbance associated with installation of the power line and construction of the roads in the APE, the project area for the natural gas line has little to no potential for unidentified intact archaeological resources to be present. The Navy would work with *Columbia Natural Gas* to ensure that the final agreement for the installation of the natural gas line would include contract language to properly address and accommodate the discovery of any "unexpected archaeological resources." As such, implementation of ECM 10 would be anticipated to have no effect on archaeological resources.

Architectural Resources:

Implementation of ECM 10 would have no direct adverse effect on historic architectural resources. No architectural resources are present on the site of the CHP Plant, which is a vehicular parking lot.

The NNSY assessed the potential indirect effects from construction of the CHP Plant on historic architectural resources within the APE. The two-story CHP building would be approximately 34.5 feet tall and have a rectangular plan measuring 183 feet by 167 feet. A single, 213.5 - foot tall, multiflue steel stack would stand near the northeast corner of the building, and an approximately 40 - foot tall steel fuel oil tank would be constructed on the west side of the building. Although the proposed location of the CHP Plant is not within the NNSY Historic District, it is adjacent to the Industrial Area Precinct, and would be designed to be compatible with it. Specifically, the design of the CHP Plant would adhere to the NNSY Installation Appearance Plan (2017), and would include exterior corrugated metal wall panels and window frames in anodized bronze. These architectural features would be consistent with those found on the metal-clad shops that predominate the Industrial Area Precinct. Implementation of ECM 10 would have no adverse effect on the NNSY Historic District.

The NNSY considered the potential of construction of the CHP Plant to alter the settings of the other historic architectural resources within the APE (Table 3.3-1), and determined that in addition to the NNSY Historic District, the project site is within the viewshed of one other historic architectural property: the Norfolk and Portsmouth Belt Line Railroad Bridge. This bridge is a ca. 1920 four-span, steel truss lift bridge spanning the Elizabeth River. Because of the open views and level topography from the river to the project site, the CHP Plant, and its 213 - foot-tall stack in particular, would be visible from the bridge. The current setting of the bridge is characterized by the dry docks, cranes, and Naval ship traffic at the NNSY and the stacks, storage tanks, silos, and piers associated with the industrial plants, factories, and oil terminals that line both sides of the river in this area (Section 3.4.2). As described above, the design of the CHP Plant would be consistent with the historic character of the NNSY. As the latest in a series of large structures within this continually evolving industrial landscape,

the addition of the CHP Plant in this area would not be expected to diminish the bridge's integrity of setting. Implementation of ECM 10 would have no adverse effect on the Norfolk and Portsmouth Belt Line Railroad Bridge.

Implementing ECM 10 would have no significant impacts to cultural resources.

Traditional Cultural Properties:

No known traditional cultural properties have been identified within NNSY Mainsite or the Scott Center, Southgate, and St. Juliens Creek annexes. Hence, the Navy has not consulted with the seven Federally recognized Native American tribes of the Commonwealth of Virginia, to determine if the Proposed Action would affect any historic properties that are religious and have cultural significance to the tribes within, or in the vicinity of, the project.

ECM 16 - Industrial Wastewater Treatment Plant:

Archaeological Resources:

No previously identified archaeological sites are within areas of the APE where ground-disturbing activities for construction of the IWTP and relocation of the controlled industrial area fence would occur. Further, the ground - disturbing activities are within Archaeological Study Zone 3, an area of NNSY that has been identified as having low archaeological potential. In the event a potential archaeological resource is encountered during excavation, all work in the immediate area would stop and the NNSY Cultural Resources Manager would notify the SHPO and continue consultation. Therefore, it is anticipated that implementation of ECM 16 - IWTP would have no effect on archaeological resources.

Architectural Resources:

Implementation of ECM 16 would include demolishing Building 1485 and four component structures, Building 1250, two aboveground diesel fuel tanks (1586 and 1587), and an underground spill containment tank. These buildings and structures are noncontributing resources to the NNSY Historic District. Therefore, the demolition would have no adverse effect on the NNSY Historic District.

The overall size, scale, and exterior design of the new IWTP would be compatible with the existing physical context of the Industrial Area Precinct. In particular, the design for the new IWTP consolidates and reconfigures what currently are several disparate components and structures of the existing IWTP within a two - story, steel - frame structure with a rectangular footprint. The exterior of the new IWTP would be designed to follow the NNSY Installation Appearance Plan. For instance, the exterior of the IWTP (walls and gable roof) would be clad in metal, in keeping with the existing aesthetic of the Industrial Area Precinct. The two - story height of the new IWTP would be similar to the associated industrial buildings (Buildings 1512, 1557, and 1580; all noncontributing) adjacent to the north, as well as the three - story utility building (Building 174; noncontributing) to the northeast and the two - and - one-half-story shop (Building 195; contributing) to the west. Similarly, views from the massive four - and seven - story shops to the south (Buildings 163 and 234, respectively; both contributing) to the site of the IWTP would be consistent with current ones. Construction of the IWTP, therefore, would have no adverse effect on the NNSY Historic District.

Implementing ECM 16 - IWTP would have no significant impacts to cultural resources.

Traditional Cultural Properties:

Impacts to traditional cultural properties would be the same as those discussed for ECM 10 – Energy Security in Section 3.3.3.2.

ECMs Categorically Excluded:

ECMs 8 and 14 would be implemented at NNSY Mainsite, Scott Center, Southgate, and St. Juliens Creek annexes. These ECMs primarily consist of upgrading and installing efficient energy systems and fixtures within existing facilities to manage and reduce energy consumption. No ground - disturbing activities would be required to implement ECMs 8.1, 8.4, or 14; however, for ECM 8.5, ground - disturbing activities would be required to demolish the existing Service Area 2 outdoor steam line (6,732 linear feet) at St. Juliens Creek Annex and install new concrete piers for the overhead pipe supports for a new steam line. The new steam line would be placed within 5 feet on either side of the existing route. A segment of the steam line is adjacent to Site 44CS0291; this site was determined to be not eligible for inclusion in the NRHP (Navy, 2012c). The remainder of the steam line is in an area of St. Juliens Creek Annex that has been heavily disturbed and was determined to have no potential to contain intact archaeological resources (Navy, 2012c).

No exterior modifications or new building penetrations would be required to implement ECMs 8 or 14. The building penetrations would be near existing penetrations for conduit and located to avoid significant historic features.

Implementing ECMs 8 and 14 would have no significant impacts to cultural resources.

In summary, under Section 106 of the NHPA, implementation of the Action Alternative would have no adverse effect. The Navy consulted with the Virginia SHPO on its finding of no adverse effect on the NNSY Historic District or the Norfolk and Portsmouth Belt Line Railroad Bridge, and no effect on any other known historic properties within the APE. In correspondence dated May 22, 2019, the Virginia SHPO concurred with the Navy's finding. Appendix B provides this correspondence. Therefore, the Action Alternative would have no significant impacts to cultural resources pursuant to NEPA.

3.4 Visual Resources:

This discussion of visual resources includes the natural and built features of the landscape visible from public views that contribute to an area's visual quality. Visual perception is an important component of environmental quality that can be impacted through changes created by various projects. Visual impacts occur as a result of the relationship between people and the physical environment.

3.4.1 Regulatory Setting:

Industrial facilities and activities at NNSY are located in areas designated for such purposes.

3.4.2 Affected Environment:

The visual environment in and around NNSY is characterized by level topography and dense urban development. NNSY is situated approximately 10 feet above mean sea level (MSL) along the Southern Branch of the Elizabeth River. The river is lined with freighters and military vessels and is the major deep water port for the Hampton Roads area, a major area for commercial and naval ship traffic, and a link to the Intracoastal Waterway. Fertilizer and pesticide plants, creosote and cement factories, shipyards and dry docks, oil terminals, and coal loading operations give this location a "working river" atmosphere (Navy, 2011).

3.4.3 Environmental Consequences:

The evaluation of visual resources in the context of environmental analysis typically addresses the contrast between visible landscape elements. Collectively, these elements comprise the aesthetic environment, or landscape character. The landscape character is compared to the Proposed Action's visual qualities to determine the compatibility or contrast resulting from the activities associated with the Proposed Action.

3.4.3.1 No Action Alternative:

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to visual resources beyond baseline conditions. Therefore, no significant impacts would occur with implementation of the No Action Alternative.

3.4.3.2 Action Alternative:

The study area for the analysis of effects to visual resources associated with the Action Alternative is NNSY Mainsite, Scott Center, Southgate and St. Juliens Creek annexes.

Under the Action Alternative, the Navy would implement numerous ECMs as presented in Section 2.1. Potential impacts from implementing ECM 10 and ECM 16 are discussed below. Potential impacts from implementing ECMs 8 and 14 are addressed collectively and qualitatively. Refer to Appendix E for ECM descriptions, building or site locations, and the applicable CatExes for ECMs 8 and 14.

ECM 10 - Energy Security:

Construction of the proposed CHP Plant would not have an adverse effect on visual resources. The view from the surrounding area would change with construction of the proposed two - story building and associated features (i.e., BESS, fuel oil tank, and chimney) in place of an asphalt parking lot; however, the facility construction and proposed operations at the site would be consistent with the industrial land use designation of the surrounding areas at NNSY Mainsite.

ECM 16 - Industrial Wastewater Treatment Plant:

Construction of a proposed new IWTP to replace the existing IWTP would not have an adverse effect on visual resources. The facility construction and proposed operations at the site would be consistent with the industrial land use designation of the surrounding areas at NNSY Mainsite.

ECMs Categorically Excluded:

ECMs 8 and 14 would be implemented at NNSY Mainsite, Scott Center, Southgate, and St. Juliens Creek annexes. These ECMs consist primarily of upgrading and installing efficient energy systems and fixtures within existing facilities to manage and reduce energy consumption. Implementing these ECMs would not result in impacts to visual resources.

In summary, implementation of the Action Alternative would not result in significant impacts to visual resources.

3.5 Biological Resources:

Biological resources include living, native, or naturalized plant and animal species and the habitats within which they occur. Within this EA, biological resources are divided into two major categories: (1 Terrestrial vegetation, and (2 Terrestrial wildlife. Vegetation includes terrestrial plant as well as

freshwater aquatic communities and constituent plant species; wildlife includes all animal species (i.e. insects and other invertebrates, amphibians, reptiles, birds, and mammals) focusing on the species and habitat features of greatest importance or interest. Threatened, endangered, and other special status species are discussed in their respective categories.

3.5.1 Regulatory Setting:

Special status species, for the purposes of this assessment, are those species listed as threatened or endangered under the Endangered Species Act (ESA) and species afforded Federal protection under the Migratory Bird Treaty Act (MBTA).

The purpose of the ESA is to conserve the ecosystems upon which threatened and endangered species depend and to conserve and recover listed species. Section 7 of the ESA requires action proponents to consult with the USFWS to ensure that their actions are not likely to jeopardize the continued existence of Federally listed threatened and endangered species, or result in the destruction or adverse modification of designated critical habitat. Critical habitat cannot be designated on any areas owned, controlled, or designated for use by the DoD where an Integrated Natural Resources Management Plan (INRMP) has been developed that, as determined by the Department of Interior (DOI) or Department of Commerce (DOC) Secretary, provides a benefit to the species subject to critical habitat designation.

Birds, both migratory and most native - resident bird species, are protected under the MBTA, and their conservation by Federal agencies is mandated by EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*. Under the MBTA, it is unlawful by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, [or] possess migratory birds or their nests or eggs at any time, unless permitted by regulation.

Bald and Golden eagles are protected by the Bald and Golden Eagle Protection Act (BGEPA). This act prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald eagles, including their parts, nests, or eggs. The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

3.5.2 Affected Environment:

The following discussions provide a description of the existing conditions for each of the categories under biological resources, including threatened and endangered species, at NNSY Mainsite and St. Juliens Creek Annex that have the potential to be affected by implementing ECM 10 and ECM 16 under the Proposed Action.

Terrestrial Vegetation:

The vast majority of NNSY Mainsite and Southgate Annex have been developed and are covered with paved surfaces. No natural vegetative communities are present on the installation and vegetative cover is limited primarily to landscaped areas. Artificially landscaped areas contain: European lawn grasses, ornamental shrubs (e.g., azaleas, privet hedge, crape myrtle, and flowering plants), and occasional trees. Approximately two acres in the southwest corner of the NNSY Mainsite is undeveloped and is maintained as an open grassy area (Navy, 2011).

Scott Center Annex and St. Juliens Creek Annex include maintained lawns and mowed grass, with a few small stands of trees. While there are areas of native wetland vegetation along St. Juliens Creek, most

of the annex would be considered disturbed and would provide little native vegetation as suitable habitat for native species.

Wetlands are discussed in Section 3.2, Water Resources. No jurisdictional wetlands are found within NNSY Mainsite (Navy, 2011); however, wetlands are found on either side of St. Juliens Creek and have been identified within the Scott Center and St. Juliens Creek annexes (Figure 3.2-1).

Terrestrial Wildlife:

The diversity and abundance of wildlife species at NNSY is limited because of the absence of natural vegetative communities on the installation and in surrounding urban areas. Wildlife present on or near the shipyard include those species adapted to urban environments and tolerant of various levels of human disturbance. These species may include various passerine bird species such as the American robin, European starling, and house sparrow. Gulls, terns, and various shorebirds may also rest on piers, pavement, and outfall ditches on the shipyard.

Threatened & Endangered Species:

Suitable habitat does not exist on NNSY for any of the Federally and State - listed threatened and endangered species listed by the USFWS and the Virginia Department of Conservation and Recreation as occurring in the cities of Portsmouth and Chesapeake. The USFWS's Information for Planning and Consultation (IPaC) online review process lists the Northern Long - Eared Bat, *Myotis septentrionalis*, as the only Federally listed species likely to occur within the area (Appendix C). Within NNSY there is no suitable roosting habitat, as the Northern Long - Eared Bat prefers mature trees with loose bark for roosting; however, there is the potential for roosting habitat for the Northern Long - Eared Bat at St. Juliens Creek Annex. With the exception of an occasional transient occurrence of a Bald eagle or Peregrine falcon, occurrence of protected species at the shipyard is unlikely (Navy, 2011).

3.5.3 Environmental Consequences:

This analysis focuses on wildlife or vegetation types that are important to the function of the ecosystem or are protected under Federal or State law or statute.

3.5.3.1 No Action Alternative:

Under the No Action Alternative, the Proposed Action would not occur. There would be no change to biological resources beyond baseline conditions. Therefore, no significant impacts to biological resources would occur with implementation of the No Action Alternative.

3.5.3.2 Action Alternative:

The study area for the analysis of effects to biological resources associated with the Action Alternative is NNSY Mainsite, Scott Center, Southgate and St. Juliens Creek annexes.

Under the Action Alternative, the Navy would implement numerous ECMs as presented in Section 2.1. Potential impacts from implementing ECM 10 and ECM 16 are discussed below. Potential impacts from implementing ECMs 8 and 14 are addressed collectively and qualitatively. Refer to Appendix E for ECM descriptions, building or site locations, and the applicable CatExes for ECMs 8 and 14.

ECM 10 - Energy Security:

Terrestrial Vegetation:

Construction of ECM 10 would have no impact on terrestrial vegetation. ECM 10 would be sited within an existing parking lot that is currently paved with asphalt. All aspects of ECM 10 construction (CHP Plant, BESS, and new steam line) would occur on areas that are previously disturbed and currently covered in asphalt or concrete. As such, no vegetation is present at the proposed construction site.

Terrestrial Wildlife:

Construction of ECM 10 would similarly have negligible impacts to terrestrial wildlife. No suitable habitat exists for native wildlife within the proposed construction site.

Threatened & Endangered Species:

Only one threatened and endangered species, the Northern Long - Eared Bat, is likely to occur within the study area of the Action Alternative (USFWS, 2019). Suitable roosting habitat exists for the Northern Long - Eared Bat within St. Juliens Creek Annex, but not within NNSY Mainsite or Scott Center and Southgate annexes.

ECM 10 construction would occur in existing paved areas; therefore, there would be no habitat loss and no impact to suitable roosting habitat for the Northern Long - Eared Bat under the Action Alternative. Due to the absence of suitable roosting habitat at NNSY, increases in noise levels from construction activities to the ambient noise environment at NNSY would be negligible and temporary and would not affect the Northern Long - Eared Bat due to its lack of presence in the proposed construction area.

The natural gas line would be directionally bored across St. Juliens Creek Annex; no impacts to suitable roosting habitat would occur. Additionally, there would be no tree-clearing activity associated with ECM 10 construction. Construction activities would have no effect on the existence of any protected species or critical / sensitive habitats. Additionally, installation personnel would continue to manage habitats according to the INRMP, which is designed to protect and benefit threatened and endangered species.

ECM 16 - Industrial Wastewater Treatment Plant:

Terrestrial Vegetation:

Construction of the ECM 16 would occur in an area that is currently paved, covered in concrete, or currently has a structure standing within the construction footprint. No vegetation exists within the construction footprint of ECM 16. As such, there would be no impacts to vegetation from implementing ECM 16.

Terrestrial Wildlife:

Similarly, ECM 16 would have negligible impacts to terrestrial wildlife. No suitable habitat exists for wildlife within the construction footprint for ECM 16.

Threatened & Endangered Species:

There would be no effect to the Northern Long - Eared Bat from implementation of ECM 16. Construction of ECM 16 would occur in an area that is currently paved, covered in concrete, or currently has a structure standing within the construction footprint. No vegetation or suitable habitat for the Northern Long - Eared Bat exists within the construction footprint of ECM 16. As such, there would be no effect to threatened and endangered species from implementing ECM 16.

ECMs Categorically Excluded:

ECMs 8 and 14 would be implemented at NNSY Mainsite, Scott Center, Southgate and St. Juliens Creek annexes. These ECMs consist primarily of upgrading and installing efficient energy systems and fixtures within existing facilities to manage and reduce energy consumption. Implementing these ECMs would not result in any direct or indirect impacts to biological resources.

In summary, implementation of the Action Alternative would not result in any significant direct or indirect impacts to biological resources. There would be no effect on threatened and endangered species and no formal consultation between the Navy and USFWS would be required.

3.6 Infrastructure:

This section discusses infrastructure comprised of potable water storage and distribution; wastewater collection treatment and disposal; storm water management, solid waste management, and energy production, transmission, and distribution.

3.6.1 Regulatory Setting:

EO 13834, *Efficient Federal Operations*, requires Federal departments and agencies to enact specific actions and operations outlined within the EO to achieve and maintain annual reductions in building energy use and to implement energy efficiency measures to reduce costs. Pursuing clean sources of energy would improve energy and water security.

Chief of Naval Operations Instruction 4100.5E outlines the Secretary of the Navy's vision for shore energy management. The focus of this instruction is establishing the energy goals and implementing strategy to achieve energy efficiency.

Antiterrorism Force Protection (ATFP) Standards have been adopted by DoD through Instruction number 2000.16, *DoD Antiterrorism Standards*, of October 2006. The standards require all DoD Components to adopt and adhere to common criteria and minimum construction standards to mitigate antiterrorism vulnerabilities and terrorist threats.

3.6.2 Affected Environment:

The following discussions provide a description of the existing conditions for each of the infrastructure categories at NNSY that have the potential to be affected by implementing ECM 10 and ECM 16 under the Proposed Action.

3.6.2.1 Potable Water:

The City of Portsmouth provides water to NNSY, and will provide potable water for the CHP Plant, from its Lake Kilby water treatment plant. The water supply is drawn from a system of four lakes (Speight, Kilby, Meade, and Cahoon) and five deep wells located in the City of Suffolk, Virginia. Portsmouth's water treatment facility serves more than 120,000 customers in Portsmouth, Chesapeake, and Suffolk and has the capacity to treat 32 million gallons per day (City of Portsmouth, 2016).

3.6.2.2 Wastewater:

The Hampton Roads Sanitation District (HRSD) operates 13 wastewater treatment plants that treat domestic and commercial wastewater from the Hampton Roads region, with a combined capacity of 249

million gallons per day (HRSD, 2013). Wastewater is collected through municipal piped systems that lead to the HRSD's interceptor system of pipes and pump stations, which then lead to the treatment plants. Wastewater from NNSY is transported via the interceptor system to the Virginia Initiative Plant located in the western part of the City of Norfolk near the confluence of the Elizabeth and James Rivers. The Virginia Initiative Plant is undergoing improvements to bring capacity from 80 to 100 million gallons per day (HRSD, 2017). Wastewater from St. Juliens Creek Annex is pumped to a gravity manhole where it flows into the City of Portsmouth's wastewater treatment system.

NNSY's industrial wastewater and sanitary sewer system is operated under permit number 0275 issued by the HRSD.

3.6.2.3 Stormwater:

Surface runoff and stormwater runoff from the NNSY generally flows to catch basins and stormwater drains located throughout NNSY that direct the runoff to outfalls. Under VPDES permit VA0005215, NNSY maintains more than 75 permitted outfalls, most of which are stormwater outfalls that empty into the Southern Branch of the Elizabeth River. Runoff from the western portion of the shipyard is routed to Paradise Creek. NNSY is not currently required to treat stormwater runoff. As part of NNSY's VPDES permit, outfalls for stormwater from industrial areas are monitored regularly for selected metals (e.g., copper and zinc), general water quality parameters (e.g., flow and pH), and other parameters depending on the outfall (Navy, 2011).

3.6.2.4 Solid Waste Management:

Solid wastes, including municipal solid waste and non - contaminated construction and demolition waste, are recycled at NNSY to the extent practicable in accordance with shipyard and contracting procedures (Naval Facilities Engineering Command July 2006). Those waste minimization procedures are in support of DoD-mandated solid waste diversion rate goals to divert as much solid waste as possible from landfills. Recyclable and disposable solid wastes are collected by a contractor and transported off the installation to nearby approved recycling facilities and construction, demolition, and / or debris landfills, respectively (Navy, 2011).

3.6.2.5 Energy:

Electrical power for NNSY is provided by *Dominion Energy*. Steam is currently purchased from *Wheelabrator*, a refuse derived fuel plant adjacent to the NNSY under a long - term contract that will expire in January 2023. The Navy would continue to purchase steam from *Wheelabrator* until that contract expires.

3.6.3 Environmental Consequences:

This section analyzes the magnitude of anticipated increases or decreases in public works infrastructure demands considering historic levels, existing management practices, and storage capacity, and evaluates potential impacts to public works infrastructure associated with implementation of the alternatives. Impacts are evaluated by whether they would result in the use of a substantial proportion of the remaining system capacity, reach or exceed the current capacity of the system, or require development of facilities and sources beyond those existing or currently planned.

3.6.3.1 No Action Alternative:

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to the existing infrastructure beyond baseline conditions. ECM 10, intended to separate NNSY from the power grid in case of an outage and provide the shipyard with uninterrupted power service, would not be implemented. ECM 16, intended to replace the existing IWTP that would increase the shipyard's wastewater treatment capacity and decrease the demand on the municipal water system, would not be implemented. As such, implementation of the No Action Alternative could potentially have a minor negative impact on infrastructure at NNSY by causing the shipyard to rely on outside utilities for power service and relying on the old IWTP for wastewater treatment.

3.6.3.2 Action Alternative:

The study area for the analysis of effects to infrastructure associated with the Action Alternative is NNSY Mainsite, Scott Center, Southgate and St. Juliens Creek annexes.

Under the Action Alternative, the Navy would implement numerous ECMs as presented in Section 2.1. Potential impacts from implementing ECM 10 and ECM 16 are discussed below. Potential impacts from implementing ECMs 8 and 14 are addressed collectively and qualitatively. Refer to Appendix E for ECM descriptions, building or site locations, and the applicable CatExes for ECMs 8 and 14.

ECM 10 - Energy Security:

Under ECM 10 of the Action Alternative, NNSY would construct and operate the proposed CHP Plant, micro-grid control system (MCS), and BESS. Construction of the CHP Plant would provide NNSY with steam and electricity once the *Wheelabrator* contract expires in 2023. To meet the high natural gas demand of the proposed CHP Plant, a new high-pressure natural gas line would be installed. A new steam distribution line would be run from the CHP Plant to connect to existing main steam lines along Dale Street. The CHP Plant would utilize the existing stormwater pipe system with minor revisions to be made to the alignment, as needed. Stormwater BMPs would be followed to include that no heavy metals or chemical tanks would be stored outside of the plant.

The MCS would be installed within the CHP Plant, and would control the distribution of electrical power throughout NNSY. In the event of a grid or outside power source failure, this system would have the capability to decouple the CHP Plant from the Gosport Substation. The MCS would automatically "island NNSY" by shedding non - critical loads to provide balanced electrical distribution to the most critical loads. The majority of work establishing the MCS would focus on upgrades to the panels housing the existing protective relaying at each substation throughout the installation.

The BESS would be integrated into the electrical distribution system to provide "bridge power" for the few minutes it would take to bring the existing eight standby emergency diesel generators online. These generators would be refurbished with new controls and switchgear. The existing electrical distribution system main and secondary feeders and aging breakers and relays would be upgraded as needed throughout NNSY.

Implementation of ECM 10 of the Action Alternative would allow NNSY to be self-reliant for electricity and steam in the event of a grid failure. Other utilities (communications, potable water, and sanitary sewer) would be tied - in and routed to the CHP Plant, and would not exceed the available capacity of these systems. Therefore, ECM 10 would have a positive impact on the infrastructure at NNSY.

ECM 16 - Industrial Wastewater Treatment Plant:

Implementation of ECM 16 under the Action Alternative would construct a new IWTP to replace the existing IWTP currently located at Building 1485 at NNSY Mainsite. The IWTP would be constructed in phases so that the existing plant could remain in operation while the new plant was being built.

Currently, approximately 1.9 million gallons of wastewater is treated per year at NNSY; the proposed IWTP would include two parallel batch treatment trains, each with a capacity of 1.35 million gallons per year for a total capacity of 2.7 million gallons per year. The new IWTP would be able to treat two different wastewater streams simultaneously using different treatment chemicals and methods. The wastewater treatment process would remain essentially the same; the same treatment chemicals, batch processing, residence times, and test methods would continue to be used. The discharge permit and actual permitted contaminant discharge would not change; but, would remain the same as the existing plant. Treated effluent would be discharged to the Southern Branch of the Elizabeth River or stored in a 10,000-gallon non - potable tank, included with the proposed IWTP. The treated effluent / non - potable water would be used to wash down wastewater transport tanks and totes eliminating the need to purchase roughly 300,000 gallons of municipal water annually for this purpose (Ameresco, 2018).

Implementation of ECM 16 would have a positive impact on infrastructure at NNSY. The proposed IWTP would increase the wastewater treatment capacity of NNSY from 1.9 million gallons per year to 2.7 million gallons per year. NNSY would recycle the treated wastewater to wash down wastewater transport tanks and totes, thereby decreasing the demand for municipal water at the shipyard. The type and amount of treated effluent discharged to the Southern Branch of the Elizabeth River would remain essentially the same and would continue to be discharged in accordance with VPDES permit VA0005215.

ECMs Categorically Excluded:

ECMs 8 and 14 would be implemented at NNSY Mainsite, Scott Center, Southgate and St. Juliens Creek annexes. These ECMs would consist primarily of upgrading and installing efficient energy systems and fixtures within existing facilities to manage energy consumption resulting in a positive, yet not significant impact to infrastructure.

In summary, implementation of the Action Alternative would contribute to the Navy's goals for energy efficiency as defined in EO 13834, *Efficient Federal Operations*. ECM 10 and ECM 16, would result in a positive, beneficial impact to infrastructure at NNSY; the impact would be significant in terms of generating on - site power and steam and reducing municipal water consumption through the recycling of treated wastewater. Implementation of ECMs 8 and 14 would also result in a beneficial impact to infrastructure; however, as these ECMs would focus on reducing energy consumption, the overall impact to infrastructure resources would be less than significant.

3.7 Hazardous Materials & Waste:

This section discusses hazardous materials, hazardous wastes, toxic substances, and contaminated sites.

3.7.1 Regulatory Setting:

Hazardous materials are defined by 49 CFR section 171.8 as "hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table, and materials that meet the defining criteria for hazard classes and divisions in 49 CFR

part 173." Transportation of hazardous materials is regulated by the U.S. Department of Transportation (DOT) regulations.

Hazardous wastes are defined by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments, (HSWA) as: "a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may: 1) Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or 2) Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed." Certain types of hazardous wastes are subject to special management provisions intended to ease the management burden and facilitate the recycling of such materials. These are called universal wastes and their associated regulatory requirements are specified in 40 CFR part 273. Four types of waste are currently covered under the universal wastes regulations: 1) Hazardous waste batteries, 2) Hazardous waste pesticides, that are either recalled or collected in waste pesticide collection programs, 3) Hazardous waste thermostats, and 4) Hazardous waste lamps, such as fluorescent light bulbs.

Special hazards are those substances that might pose a risk to human health and are addressed separately from other hazardous substances. Special hazards include Asbestos Containing Material (ACM), Polychlorinated Biphenyls (PCBs), and Lead Based Paint (LBP). USEPA is given authority to regulate special hazard substances by the Toxic Substances Control Act (TSCA). Asbestos is also regulated by USEPA under the CAA, and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The DoD established the Defense Environmental Restoration Program (DERP) to facilitate thorough investigation and cleanup of contaminated sites on military installations (active installations, installations subject to Base Realignment and Closure (BRAC), and formerly used defense sites). The Installation Restoration (IR) Program and the Military Munitions Response (MMR) Program are components of the DERP. The IR Program requires each DoD installation to identify, investigate, and clean up hazardous waste disposal or release sites. The MMR Program addresses nonoperational rangelands that are suspected or known to contain Unexploded Ordnance (UXO), discarded military munitions, or munitions constituent contamination. The Environmental Restoration (ER) Program is the Navy's initiative to address the DERP.

3.7.2 Affected Environment:

The Navy has implemented a strict Hazardous Material Control and Management (HMCM) Program and a Hazardous Waste Minimization (HWM) Program for all activities. These programs are governed Navy-wide by applicable Office of the Chief of Naval Operations Instructions (OPNAVINST) and at the Installation by specific instructions issued by the Base Commander. The Navy continuously monitors its operations to find ways to minimize the use of hazardous materials and to reduce the generation of hazardous wastes.

The following discussions provide a description of the existing conditions for the use and management of hazardous materials and hazardous wastes at NNSY Mainsite, and ER sites at NNSY Mainsite, St. Juliens Creek Annex, and Paradise Creek Disposal Area (the latter two areas are discussed due to their proximity to the proposed high - pressure natural gas line) that have the potential to be affected by implementing ECM 10 and ECM 16 under the Proposed Action.

3.7.2.1 Hazardous Materials:

Hazardous materials that are used at NNSY include: solvents, paints, cleaning compounds, surfactants, degreasers, coolants, adhesives, batteries, acids, corrosives, herbicides, pesticides, and fungicides (Navy, 2011).

3.7.2.2 Hazardous Wastes:

Industrial shops at NNSY generate wastes such as: scrap metal, waste oils, spent cleaners and solvents, paint, paint sludges, plating wastes, asbestos, and solutions from cleaning boilers. NNSY stores hazardous waste under permit VA1170024813 (Navy, 2011).

3.7.2.3 Special Hazards (Asbestos-Containing Materials, Lead Based Paint, & Polychlorinated Biphenyls):

No large-scale surveys to identify ACMs have been completed at NNSY; however, an asbestos survey is currently being conducted. ACM is likely to be present at most older buildings and in the steam line insulation. LBP is anticipated to be present in buildings constructed before 1978 (Navy, 2008).

3.7.2.4 Defense Environmental Restoration Program:

NNSY was added to the National Priorities List in 1999. The USEPA's primary concerns were potential impacts on Paradise Creek (waterbody), and the Southern Branch of the Elizabeth River. Three active Installation Restoration Program (IRP) sites are present at NNSY Mainsite (Sites 10, 15, and 17). St. Juliens Creek Annex was added to the National Priorities List in 2000. IRP Sites 2, 4, and 21 are currently active. Paradise Creek Disposal Area was added to the National Priorities List in 1999. IRP Sites 3, 4, 5, 6, and 7 are currently active, and combine to make Operable Unit 2. Risks at Site 7 were mitigated through a Non – Time - Critical Removal Action, and no Land Use Controls (LUCs) are required for this site (Navy, 2018a).

Table 3.7-1 provides a brief description of each active site located at NNSY Mainsite, St. Juliens Creek Annex, and the Paradise Creek Disposal Area.

Human health risks have been identified from exposure to metals at NNSY Mainsite IRP sites 10 and 17. As such, workers should:

- Be appropriately trained in Hazardous Waste Operations and Emergency Response (HAZWOPER) (29 CFR 1910.120) when working within the LUC boundary.
- Wear appropriate personal protective equipment as determined by the organization's HAZWAPER trained subject matter expert.

Any groundwater removed / dewatered from within the LUC boundary of St. Juliens Creek Annex IRP sites 2 and 21 would require proper storage, characterization, and offsite disposal at an approved waste disposal facility. All waste handling would require coordination with the Hazardous Waste Media Manager. Contaminant remediation systems (groundwater monitoring wells) are located within or adjacent to the project area.

These systems require protection from damage. If the groundwater monitoring wells were damaged or would need to be relocated, coordination with the St. Juliens Creek Annex Environmental Restoration Remedial Project Manager would be required.

Figure 3.7-1 illustrates the location of IRP sites relative to their proximity to ECM projects under the Proposed Action. Active IRP sites have been shaded. Figure 3.7-2 shows the location of groundwater monitoring wells within St. Juliens Creek Annex IRP sites 2 and 21.

3.7.3 Environmental Consequences:

The hazardous materials and wastes analysis contained in the respective sections addresses issues related to the use and management of hazardous materials and wastes as well as the presence and management of specific cleanup sites at NNSY Mainsite, St. Juliens Creek Annex, and Paradise Creek Disposal Area.

3.7.3.1 No Action Alternative:

Under the No Action Alternative, the Proposed Action would not occur and there would be no change associated with hazardous materials and wastes beyond baseline conditions. Therefore, no significant impacts would occur with implementation of the No Action Alternative.

3.7.3.2 Action Alternative:

The study area for the analysis of effects to hazardous materials and wastes associated with the Action Alternative includes NNSY Mainsite, Scott Center, Southgate and St. Juliens Creek annexes, and Paradise Creek Disposal Area.

Under the Action Alternative, the Navy would implement numerous ECMs as presented in Section 2.1. Potential impacts from implementing ECM 10 and ECM 16 are discussed below. Potential impacts from implementing ECMs 8 and 14 are addressed collectively and qualitatively. Refer to Appendix E for ECM descriptions, building or site locations, and the applicable CatExes for ECMs 8 and 14.

ECM 10 - Energy Security:

Under ECM 10 of the Action Alternative, NNSY would construct the CHP Plant, MCS, and BESS. The proposed CHP Plant would consist of two 7 - MW dual - fueled (natural gas / fuel oil) - fired turbines, two heat recovery steam generators, three high efficiency, low emissions dual - fueled backup steam boilers, one standby diesel generator, and one cooling water tower. A 550,000 - gallon diesel fuel tank would be constructed adjacent to the west side of the CHP Plant.

During construction and operations, handling of hazardous materials would be conducted in accordance with Federal regulations and NNSY's Standard Operating Procedures (SOPs). The types of hazardous materials and substances used and the types of hazardous waste generated would be similar to those used or generated during current operations at NNSY. The new 550,000 - gallon diesel fuel tank would be managed under NNSY's Above Ground Storage Tank Program. Any hazardous wastes produced as a result of operations at the CHP Plant, MCS, and BESS would be disposed of in accordance with Federal and State regulations and NNSY's existing permit VA1170024813. No significant impacts would be anticipated.

The proposed natural gas line that would supply service to the CHP Plant would be installed within the existing utility easement adjacent to IRP sites 2 and 21 at St. Juliens Creek Annex and Operable Unit 2 at the Paradise Creek Disposal Area. *Columbia Natural Gas* would install the line using horizontal directional boring to minimize excavation. Disturbance of the IRP sites would not be anticipated. A proposed "tee" off the gas line would supply service to the boiler plant (Building 283) at St. Juliens Creek

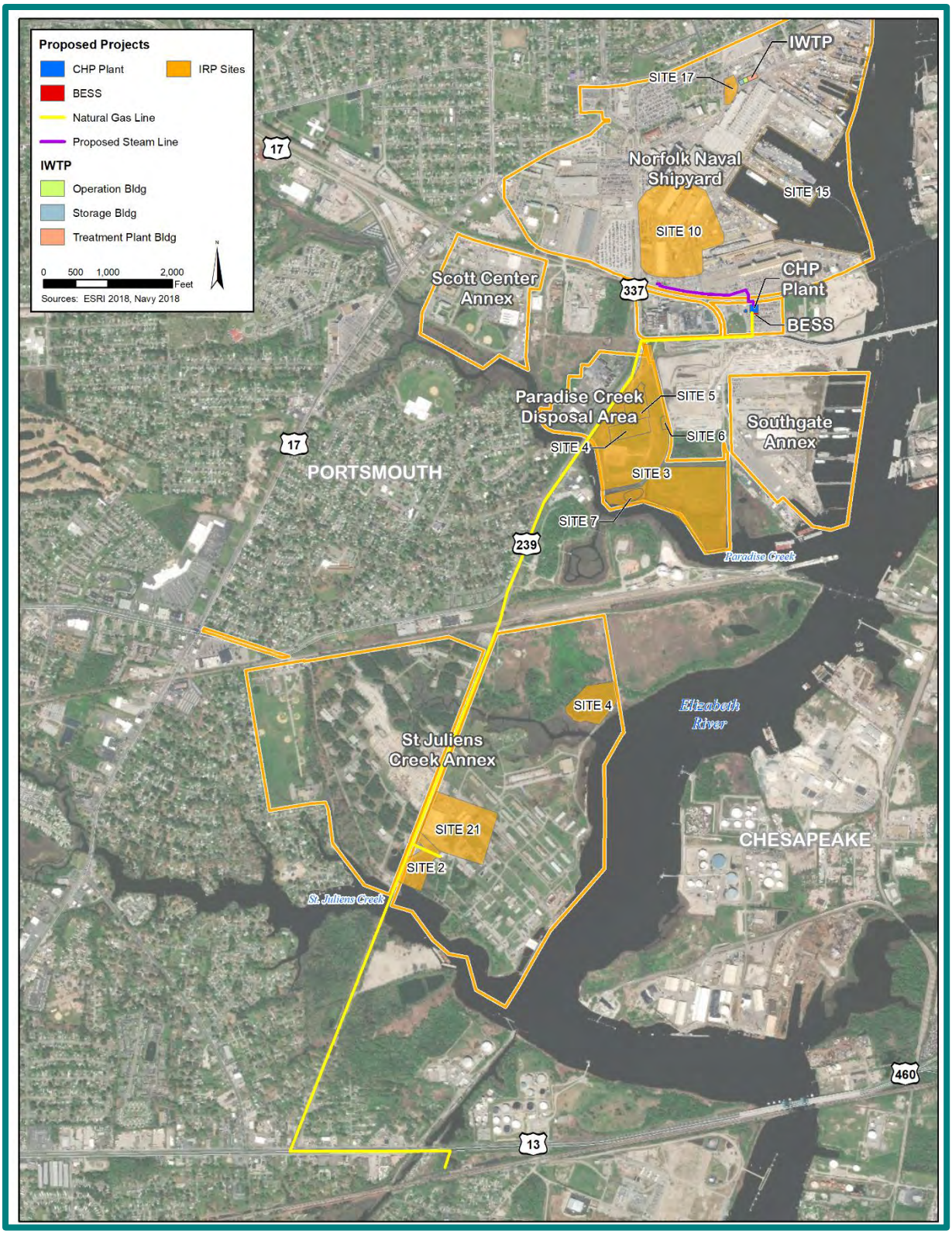

Figure 3.7-1: Location Of Installation Restoration Program Sites In The Affected Environment

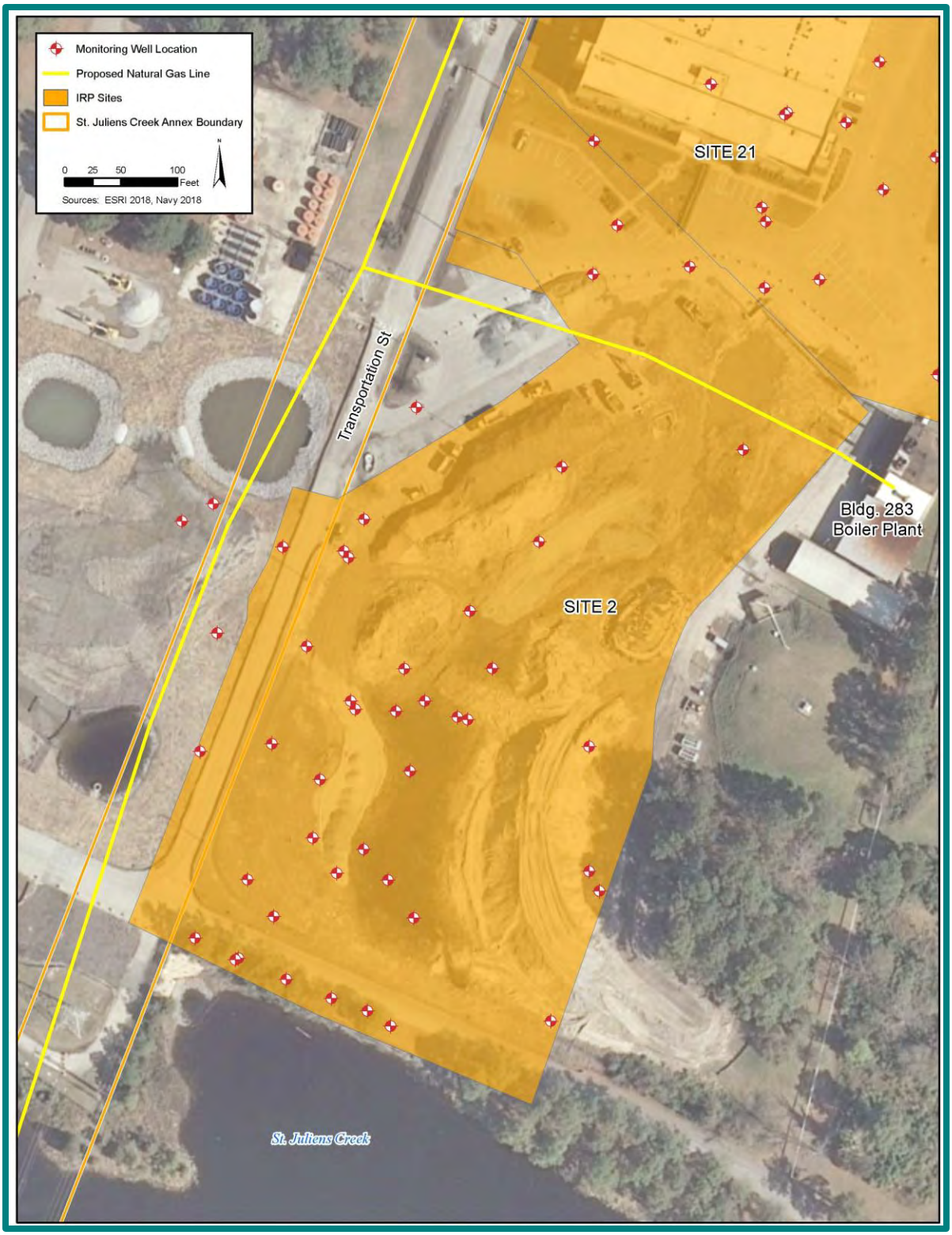

Figure 3.7-2: Location Of Groundwater Monitoring Wells In Installation Restoration Program Sites 2 & 21

Table 3.7-1: Active Installation Restoration Program Sites

Location	Description	Land Use Controls (if applicable)
NNSY Mainsite	**Site 10**: Known as the 1927 Landfill, the 36 - acre site is located in the southern portion of NNSY Mainsite in an area covered with paved roads, buildings, & parking lots. The landfill was used from before 1927 until 1941.	Because the site soils pose a potential risk under the future resident exposure scenario, the selected remedy for this site in the Record of Decision (ROD) is land use controls (LUCs) to restrict residential development of the site.
	Site 15: This past pier - side industrial operations site is located on the eastern boundary of NNSY Mainsite along the Southern Branch of the Elizabeth River waterfront. It was examined for water & sediment issues associated with earlier pier-side operations.	Soils at Site 15 no longer pose a potential risk; as such, the Navy, US Environmental Protection Agency , & Virginia Department of Environmental Quality agreed that no action is warranted & no LUCs are required.
	Site 17: Building 195 was the main plating shop at NNSY from the early 1970s through the mid - 1980s. The shop & adjacent soils were contaminated by spills during that time period. Investigations concluded that the site contaminants did not pose any unacceptable risks for current & future site workers.	Because site contaminant levels exceeded preliminary residential screening levels, the Navy selected & imposed LUCs to restrict residential development of the site.
St. Juliens Creek Annex	**Site 2**: A 6.2 - acre site in the southern portion of the Annex. The site includes an unlined waste disposal area that operated from 1921 until after 1947. Initially, refuse was burned openly onsite & used to fill in portions of a tidal inlet that was located in the center of the site & was connected to St. Juliens Creek by a culvert. Mixed municipal wastes, solvents, waste ordnance, & abrasive blast media from ship overhaul & repair operations were disposed at the site.	The following LUCs are in place for Site 2 to prevent unacceptable exposure to waste & constituents of concern in soil, inlet sediment, & shallow aquifer groundwater: 1) Maintain the soil cover & prevent exposure to waste & contaminants in soil & inlet sediment, & 2) Prevent direct exposure to and / or potable use of shallow groundwater.
	Site 4: An approximately 8.3 - acre landfill in the northeastern portion of the Annex located at the confluence of Blows Creek & the Southern Branch of the Elizabeth River. The site is located on dredge fill material that reportedly originated from Blows Creek & the Southern Branch of the Elizabeth River. Wastes managed were primarily trash, wet garbage, construction material, & outdated civil defense stores.	The following LUCs are in place for Site 4 to prevent unacceptable exposure to waste & constituents of concern in soil: 1) Prohibit digging into or disturbing the soil cover or landfill contents; & 2) Prohibit residential use & development of the site.
	Site 21: An industrial area in the southcentral portion of the Annex. Buildings at Site 21 were historically used as machine, vehicle, & locomotive maintenance shops; electrical shops; & munitions loading facilities. A fuel service station was also located in the vicinity. Outdoor areas were used for equipment & chemical storage. Several of these buildings and / or their surrounding areas were former IRP sites.	The following LUCs are in place for Site 21 to prevent unacceptable exposure to constituents of concern in shallow aquifer groundwater: 1) Prohibit occupation of unoccupied buildings; 2) Prohibit disturbance of building envelopes; 3) Prohibit change in land use.

Location	Description	Land Use Controls (if applicable)
Paradise Creek Disposal Area	**Operable Unit 2**: A combination of Sites 3, 4, 5, 6, & 7. Site 3 is an approximately 91 - acre area that was operated from 1954 through 1983 as a disposal area for dredge fill, abrasive blast material, paint residues, sanitary wastes, solvents, & other industrial residues. Site 4 is composed of five former chemical waste holding ponds constructed between 1963 & 1972, which were covered with soil in 1981. The site was used to store & consolidate used petroleum, oil, & lubricants from 1963 to the early 2000s. Site 6 is an area where spent abrasive blast material was disposed of between the mid -1960s & 1977.	The following LUCs are in place for Operable Unit 2: 1) Prevent exposure to contaminated soils & waste remaining in place; 2) Prohibit residential development or any other land use inconsistent with the remedial action objective & selected soil remedy; 3) Prevent unauthorized access to the site with fencing, secured & locked gates, No-Trespassing signs, & limited site access; 4) Prevent activities that negatively affect the integrity of soil cover & side slopes; 5) Comply with Post - Closure Monitoring Plan, which includes gas monitoring, visual inspections, & maintenance activities.

Sources: Navy, 2018a; 2016b; 2011.

Annex. The tee would have the potential to affect IRP Site 2 (Figure 3.7-2). The alignment of the natural gas pipeline and tee are still in development; the pipeline and tee would be designed to avoid monitoring wells, or if unavoidable, the monitoring wells would be relocated. The Navy would need to consult with USEPA and Virginia DEQ to relocate the wells. Additionally, dewatering or excavation at the sites would be inconsistent with the existing LUCs. The Navy would need to consult with USEPA and Virginia DEQ to obtain a waiver prior to any dewatering or excavation activity. No significant impacts would be anticipated.

ECM 10 would also install a new 3 MW / 5 - MWH lithium-ion BESS. The useful life of the battery cells is defined as the time it would take for the cells to reach 60 percent of their original energy capacity. The service life of the lithium - ion batteries would be expected to extend beyond the performance period of the storage system. As such, no new waste stream would be anticipated.

With the observation of all applicable regulations and guidance for construction within and near IRP sites, SOPs during the operations, and no new waste streams created, significant impacts to hazardous materials and wastes with implementation of ECM 10 would not be anticipated.

ECM 16 - Industrial Wastewater Treatment Plant:

Implementation of ECM 16 under the Action Alternative would construct a new IWTP to replace the existing IWTP currently located at Building 1485 at NNSY Mainsite. The new IWTP would be constructed in phases, and the existing IWTP would be demolished. Any ACM or LBP found during demolition would be disposed of in accordance with Federal regulations and NNSY's SOPs. New above ground diesel fuel tanks to replace the demolished diesel fuel tanks would be provided closer to the emergency generators in Building 1580. The Storage Building would be constructed last; the 4,225 SF building would be used to store dry bulk chemicals for water treatment.

During construction and operations, handling of hazardous materials would be conducted in accordance with Federal and State regulations and NNSY's SOPs. The types of hazardous materials and substances used and the types of hazardous waste generated would be similar to those used or generated during current operations at NNSY. The new fuel tanks would be managed under NNSY's Above Ground The IWTP would be constructed near IRP site 17; however, no disturbance of site 17 would be anticipated and all existing LUCs would be followed. Therefore, implementation of ECM 16 under the Action Alternative would not result in significant impacts to hazardous materials and wastes.

ECMs Categorically Excluded:

ECMs 8 and 14 would be implemented at NNSY Mainsite, Scott Center, Southgate and St. Juliens Creek annexes. These ECMs consist primarily of upgrading and installing efficient energy systems and fixtures within existing facilities to manage and reduce energy consumption.

Fluorescent lamps / light bulbs containing mercury would be managed and disposed (or recycled) as universal waste in accordance with Federal, State, and Local regulations. Prior to the start of removal activities, the removal contractor would contact the appropriate Hazardous Waste Media Manager to establish an individual USEPA universal waste accumulation area at each location (i.e., NNSY Mainsite, Scott Center, Southgate, and St. Juliens Creek annexes). The fluorescent light ballasts could contain Polychlorinated Biphenyls (PCBs). The removal, packaging, and disposal of fluorescent ballasts would be done in accordance with "Navy Standard Contract Specification 02 84 16.00 22: *Handling of Lighting Ballasts and Lamps Containing PCBs and Mercury*" and "Navy Standard Contract Specification 02 84 33.00 22: *Removal and Disposal of Polychlorinated Biphenyls*".

The types of hazardous materials and substances used and the types of hazardous waste generated under the Proposed Action would be similar to those used or generated during current operations at NNSY. With observance of the proper removal, packaging, and disposal procedures, implementing ECMs 8 and 14 would not result in significant impacts to hazardous materials and wastes.

3.8 Environmental Justice & Protection Of Children:

USEPA defines Environmental Justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (USEPA, 2011).

3.8.1 Regulatory Setting:

Executive Order (EO) 12898: *Federal Actions To Address Environmental Justice In Minority Populations And Low - Income Populations* (February 11, 1994), mandates that Federal agencies identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs on minority and low - income populations. EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (April 21, 1997), mandates that Federal agencies identify and assess environmental health and safety risks that may disproportionately affect children as a result of the implementation of Federal policies, programs, activities, and standards. Environmental health and safety risks to children are defined as those that are attributable to products or substances a child under the age of 18 is likely to come into contact with or ingest, such as air, food, water, soil, and products that children use or to which they are exposed.

Consistent with EO 12898 and EO 13045, the Navy's policy is to identify and address any disproportionately high and adverse human health or environmental effects of its actions on minority and low-income populations and children.

3.8.2 Affected Environment:

This section identifies minority or low - income populations or children that could be directly affected by the Proposed Action. In order to comply with EOs 12989 and 13045, ethnicity, poverty status, and age of the populations in census tracts in the vicinity of NNSY were examined and compared with the Commonwealth of Virginia, the City of Portsmouth, and the City of Chesapeake (Table 3.8-1). Figure 3.8-1 illustrates the location of the census tracts in the affected environment.

As shown in Table 3.8-1, three of the four Portsmouth census tracts that abut NNSY had higher percentages of minority populations than the respective city rate. The percentage of minority populations in the City of Portsmouth was also higher than the Commonwealth of Virginia. The percentage of the population below the poverty level in three of the four census tracts abutting NNSY is above the City of Portsmouth and Commonwealth of Virginia levels. Each of the Portsmouth census tracts have higher percentages of minors than the City of Portsmouth and Commonwealth of Virginia levels. The percentage of minority and low - income populations and minors in the Chesapeake census tract compare similarly to the City of Chesapeake and Commonwealth of Virginia.

3.8.3 Environmental Consequences:

This analysis focuses on the potential for a disproportionate and adverse exposure of specific off - base population groups to the projected adverse consequences discussed in the Affected Environment section.

3.8.3.1 No Action Alternative:

Under the No Action Alternative, the Proposed Action would not occur and there would be no affect to environmental justice. Therefore, no significant impacts would occur with the implementation of the No Action Alternative.

3.8.3.2 Action Alternative:

The study area for the analysis of effects to environmental justice and protection of children associated with the Action Alternative are the cities of Portsmouth and Chesapeake.

Under the Action Alternative, the Navy would implement numerous ECMs as presented in Section 2.1. Potential impacts from implementing ECM 10 and ECM 16 are discussed below. Potential impacts from implementing ECMs 8 and 14 are addressed collectively and qualitatively. Refer to Appendix E for ECM descriptions, building or site locations, and the applicable CatExes for ECMs 8 and 14.

ECM 10 - Energy Security, & ECM 16 - Industrial Wastewater Treatment Plant:

The analysis in this EA has determined that no adverse short - or long - term impacts would occur to any resource area from implementing the Action Alternative. Construction and operation of the CHP Plant (ECM 10) or the IWTP (ECM 16) would not result in adverse impacts. As such, no disproportionately high or adverse impacts would occur to minority or low - income populations. Access to NNSY is restricted. The driving distance to the nearest park or school where children may gather would be approximately 0.8 miles from ECM 10, and approximately 0.4 miles and 0.7 miles, respectively, from ECM 16, resulting in no potential for children to be present in or near construction work areas.. The potential for existing and / or proposed activities under the Action Alternative to disproportionately affect minority or low - income populations or affect children's environmental health and safety would be negligible.

ECMs Categorically Excluded:

ECMs 8 and 14 would be implemented at NNSY Mainsite, Scott Center, Southgate and St. Juliens Creek annexes. These ECMs consist primarily of upgrading and installing efficient energy systems and fixtures within existing facilities to manage and reduce energy consumption. The analysis in this EA has determined that no adverse impacts would occur to any resource area from implementing the Proposed Action. As such, implementing these ECMs would not cause disproportionately high or adverse human

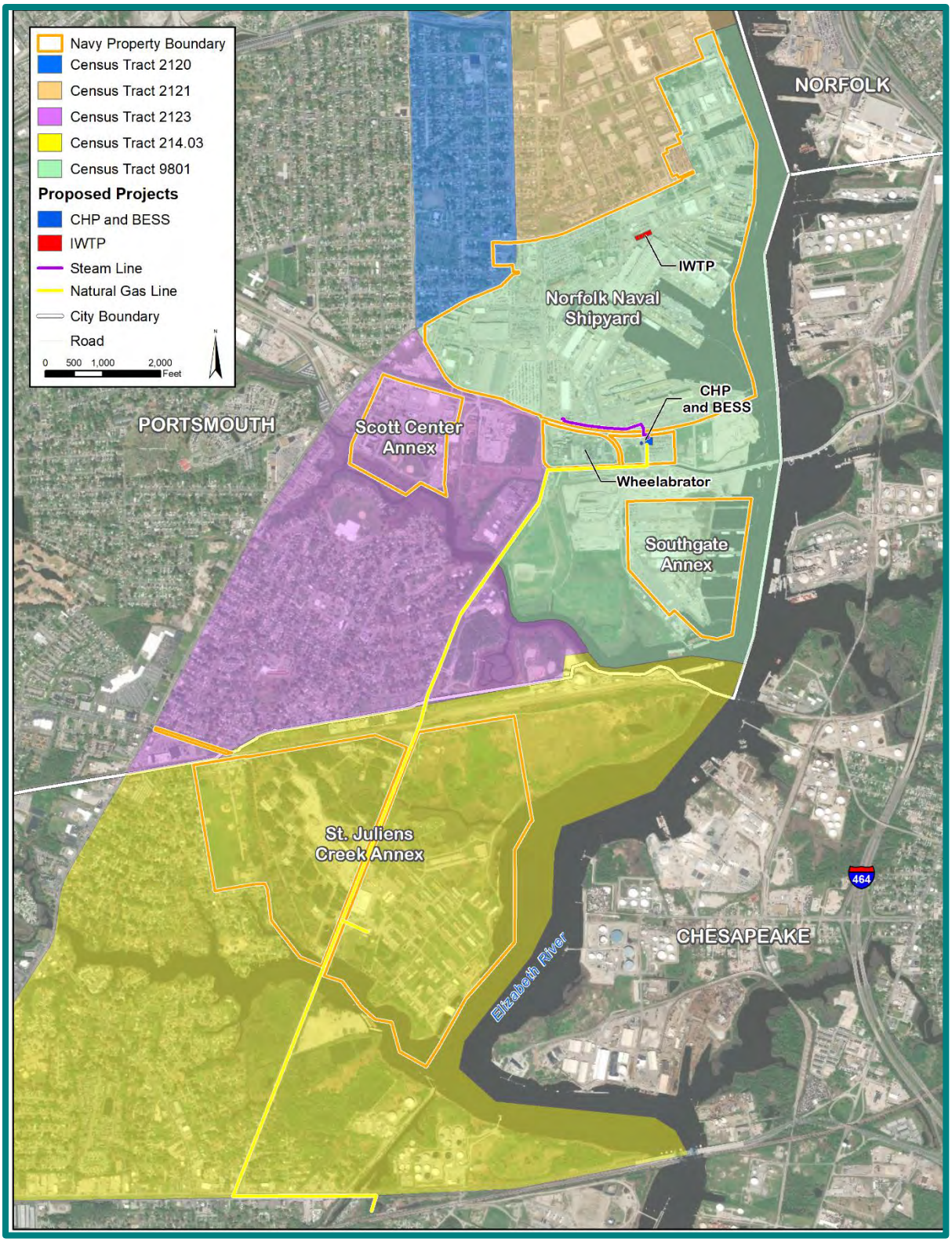

Figure 3.8-1: Location Of Census Tracts In The Affected Environment

Table 3.8-1: Percentage Of Minority, Low - Income, & Residents Under Age 18 In The Affected Environment

Location	Total Percent Minority*	Percent Low-Income	Percent Under Age 18
Commonwealth Of Virginia	37 %	11.2 %	22 %
City Of Portsmouth	62 %	17.7 %	24 %
Portsmouth: Tract 2120	99 %	29.6 %	27 %
Portsmouth: Tract 2121	97 %	38.4 %	34 %
Portsmouth: Tract 2123	70 %	26.4 %	32 %
Portsmouth: Tract 9801 [2]	62 %	0 %	0 %
City Of Chesapeake	42 %	9.6 %	24 %
Chesapeake: Tract 214.03	42 %	12.5 %	23 %

Source: U.S. Census Bureau, 2017.
Note : * Minority population calculated by subtracting non - Hispanic white only population total from total population values.

health or environmental impacts on any minority or low - income populations or to children's environmental health and safety.

3.9 Summary Of Potential Impacts To Resources:

A summary of the potential impacts associated with the No Action Alternative and the Action Alternative are presented in Table 3.9-1.

Table 3.9-1: Summary Of Potential Impacts To Resource Areas

Resource Area	*No Action Alternative*	*Action Alternative*
Air Quality	No change to existing emissions or sources beyond those considered under baseline conditions. NNSY would continue to operate under the existing Title V Operating Permit (No. TRO - 60326).	Short - term impacts to air quality during the CHP Plant & IWTP construction phases; criteria pollutant emissions would be less than significant. The Title V permit would require major modification for the new stationary sources. Operation of the CHP Plant would result in a substantial increase in GHG emissions; the GHGs would be limited as much as possible through good combustion & work practices.
Water Resources	No change to water resources beyond baseline conditions. NNSY would continue to maintain their Storm Water Pollution Prevention Plan & implement BMPs to minimize pollutants that could contaminate the area waters.	No significant short - term, long - term, direct or indirect impacts to water resources from CHP Plant & IWTP construction or operational activities. IWTP treated effluent would continue to be discharged to the Southern Branch of the Elizabeth River in accordance with VPDES permit VA0005215.
Cultural Resources	No change to cultural resources beyond baseline conditions.	No significant impacts to cultural resources. There would be no adverse effect on the NNSY Historic District or the Norfolk & Portsmouth Belt Line Railroad Bridge, & no effect on any other known historic properties within the APE.
Visual Resources	No change to visual resources beyond baseline conditions.	No significant impact with implementing ECMs 10 & 16. The industrial setting at NNSY would not be affected by the construction or operation of the CHP Plant or IWTP, respectively.

Table 3.9-1: Summary Of Potential Impacts To Resource Areas

Resource Area	*No Action Alternative*	*Action Alternative*
Biological Resources	No change to biological (i.e., wildlife, vegetation, & threatened & endangered species) resources beyond baseline conditions.	There would be no significant direct or indirect impacts to biological resources. There would be no effect on threatened & endangered species & no formal consultation between the Navy & USFWS would be required.
Infrastructure	No change to the existing infrastructure beyond baseline conditions. Implementation of the No Action Alternative could potentially have a minor negative impact on infrastructure at NNSY as the shipyard would continue to rely on outside utilities for electricity, steam, municipal water, & a dated IWTP.	No significant short - term impacts would be anticipated. Implementation of ECM 10 would allow NNSY to be self - reliant for electricity & steam in the event of a grid failure. Implementation of ECM 16 would increase wastewater treatment capacity & no longer require the purchase of approximately 300,000 gallons of municipal water per year. IWTP operations would continue during construction of the new IWTP. Implementation of ECMs 10 & 16 would be anticipated to have a long - term positive impact on infrastructure at NNSY.
Hazardous Materials & Wastes	No change associated with hazardous materials & wastes beyond those considered under baseline conditions.	No significant short - or long - term impacts anticipated to this resource. The handling of hazardous materials & wastes would continue to be conducted in accordance with Federal & State regulations & NNSY's SOPs & permit VA1170024813.
Environmental Justice & Protection Of Children	No change to minority or low - income populations or children's environmental health & safety beyond baseline conditions.	No disproportionate impact to minority or low - income populations or to children's environmental health & safety.

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4 CUMULATIVE IMPACTS

This section: 1) Defines cumulative impacts, 2) Describes past, present, and reasonably foreseeable future actions relevant to cumulative impacts, 3) Analyzes the incremental interaction the proposed action may have with other actions, and 4) E valuates cumulative impacts potentially resulting from these interactions.

4.1 Definition Of Cumulative Impacts:

The approach taken in the analysis of cumulative impacts follows the objectives of the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations, and CEQ guidance. Cumulative impacts are defined in 40 CFR Section 1508.7 as "the impact on the environment that results from the incremental impact of the action when added to the other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non - Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

To determine the scope of environmental impact analyses, agencies shall consider cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact analysis document.

In addition, CEQ and U.S. Environmental Protection Agency (USEPA) have published guidance addressing implementation of cumulative impact analyses — Guidance On The Consideration Of Past Actions In Cumulative Effects Analysis (CEQ, 2005) and Consideration Of Cumulative Impacts In EPA Review Of NEPA Documents (USEPA 1999). CEQ guidance entitled *Considering Cumulative Impacts Under NEPA* (1997) states that cumulative impact analyses should:

> "…determine the magnitude and significance of the environmental consequences of the proposed action in the context of the cumulative impacts of other past, present, and future actions...identify significant cumulative impacts … [and] … focus on truly meaningful impacts."

Cumulative impacts are most likely to arise when a relationship or synergism exists between a proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in close proximity to the proposed action would be expected to have more potential for a relationship than those more geographically separated. Similarly, relatively concurrent actions would tend to offer a higher potential for cumulative impacts. To identify cumulative impacts, the analysis needs to address the following three fundamental questions:

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

4.2 Scope Of Cumulative Impacts Analysis:

The scope of the cumulative impacts analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. For this EA, the study area delimits the geographic extent of the cumulative impacts analysis. In general, the study area will include those areas previously identified in Chapter 3 for the respective resource areas. The time frame for cumulative impacts centers on the timing of the proposed action.

Another factor influencing the scope of cumulative impacts analysis involves identifying other actions to consider. Beyond determining that the geographic scope and time frame for the actions interrelate to the proposed action, the analysis employs the measure of "reasonably foreseeable" to include or exclude other actions. For the purposes of this analysis, public documents prepared by Federal, State, and Local government agencies form the primary sources of information regarding reasonably foreseeable actions. Documents used to identify other actions include notices of intent for Environmental Impact Statements (EISs) and EAs, management plans, land use plans, and other planning related studies.

4.3 Past, Present, & Reasonably Foreseeable Actions:

This section will focus on past, present, and reasonably foreseeable future projects at and near the Proposed Action locale. In determining which projects to include in the cumulative impacts analysis, a preliminary determination was made regarding the past, present, or reasonably foreseeable actions. Specifically, using the first fundamental question included in Section 4.1, it was determined if a relationship exists such that the affected resource areas of the Proposed Action (included in this EA) might interact with the affected resource areas of a past, present, or reasonably foreseeable action. If no such potential relationship exists, the project was not carried forward into the cumulative impacts analysis. In accordance with CEQ guidance (CEQ, 2005), these actions considered but excluded from further cumulative effects analysis are not catalogued here as the intent is to focus the analysis on the meaningful actions relevant to informed decision-making.

4.3.1 Past Actions:

Controlled Industrial Facility:

This 2011 EA (Navy, 2011) evaluated demolition of existing controlled industrial facility buildings (east end of Building 1475, Building 1568, and the Dockside Work Center) and demolition and fill in of Dry Docks 6 and 7 (contributing resources to the National Register of Historic Places (NRHP) - eligible Norfolk Naval Shipyard [NNSY] Historic District) to be used for a future facility. The new controlled industrial facility was constructed near Building 261 and Dry Dock 4 at a vacant location. The location would require minor infrastructure upgrades. The new controlled industrial facility opened in October 2017.

P - 516: Ship Repair Replacement Of Pier 5:

This 2010 EA (Navy, 2010a) evaluated the demolition of Piers 4 and 5 (contributing resources to the NRHP - eligible Industrial Area Precinct of the NNSY Historic District) and replacement with a new Pier 5. The action required dredging for the new pier, upgrades to the existing wharf, and construction of new support buildings. The Programmatic Agreement (PA) executed by the Navy and Virginia State Historic Preservation Officer (SHPO) identified mitigation actions and recognized that while demolition of the piers would have an adverse effect on contributing resources in the District, there would be no impact to the overall integrity of the District.

Management Of Eight Excess Buildings:

This 2010 EA (Navy, 2010b) evaluated the reduction of excess building inventory through demolition, mothballing with repairs, or adaptive reuse. Building 195, also designated Installation Restoration Program (IRP) site 17 is located next to the existing Industrial Wastewater Treatment Plant (IWTP) and proposed site of the new IWTP. Metal plating operations continue in a small portion of Building 195. Water connections, including a wastewater connection to the IWTP, remain active.

Proposed Dredging Of Norfolk Harbor Channel:

This 2009 EIS (Navy, 2009b) evaluated the Navy's proposal to deepen approximately five miles of Norfolk Harbor Channel, the Federal navigation channel in the Southern Branch of the Elizabeth River to provide water depths that would establish continuously safe and expeditious transit routes for aircraft carriers entering and leaving Lamberts Point Deperming Station and the NNSY. Short - term and localized impacts to water quality from increased turbidity caused by sediment suspended at the point of dredging would be anticipated. Minor long - term impacts to hydrodynamics (salinity, surface elevation, velocities, and sedimentation rates) of the Elizabeth River, and minor long - term impacts to dissolved oxygen concentrations on the river bottom were also anticipated. The increase in air emissions resulting from dredging and disposal activities would be temporary, lasting only for the duration of the dredging activities. No historic properties as defined by the National Historic Preservation Act of 1966 (NHPA), as amended, were identified as occurring in the project area. No significant or adverse impacts to environmental justice populations or children were identified.

Base Realignment & Closure Realignments To Naval Support Activity Norfolk Naval Shipyard:

The Base Realignment And Closure (BRAC) Realignments EA (Navy, 2008) evaluated the transfer of 420 military and civilian personnel to NNSY and two military construction projects (P - 214V and P - 218V). P - 214V involved modification of the historic brick perimeter, renovation of Quarters, and demolition of several buildings (133, 136, and 460), all being contributing resources to the NRHP - eligible NNSY Historic District. P - 218V involved constructing a 44,000 SF addition to Building 1500 (a noncontributing building within the District) primarily for office space with surface parking for an additional 344 vehicles. A PA was executed by the Navy and Virginia SHPO with a determination (and concurrence) that P - 214V would have an adverse effect on historic properties; however, P - 218V would not. P - 218V construction was completed in January 2011.

Replace St. Juliens Creek Annex Steam Plant Boiler In Building 283:

The St. Juliens Creek Annex steam plant provides heat for numerous buildings on the annex. The steam plant boiler is no longer operationally efficient. Boilers 1 and 2 will be replaced with a new boiler, deaerator tank, and surge tank within Building 283. The replacement action qualified for categorical exclusion (CatEx) 35: "Demolition, disposal, or improvements involving buildings or structures when done in accordance with applicable regulations, including those regulations applying to removal of asbestos, polychlorinated biphenyls, and other hazardous materials" under Office of the Chief of Naval Operations M-5090.1 (Navy, 2019).

Replace Emergency Generator For IWPT In Building 1485:

In 2018, the IWTP backup generator suffered a catastrophic failure and required replacement. The replacement action qualified for CatEx 36: "Acquisition, installation, and operation of utility (e.g., water, sewer, electrical) and communication systems, (e.g., data processing cable and similar electronic

equipment) which use existing rights of way, easements, distribution systems, and / or facilities" under Office of the Chief of Naval Operations M-5090.1 (Navy, 2018b).

Replace Batch Treatment Tank & Mixer At Building 1485:

In 2017, the IWTP batch tank and mixer in Building 1485 reached the end of their operational life and required replacement with a new tank and mixer. The replacement action qualified for CatEx 34: "New construction that is similar to existing land use and, when completed, the use or operation of which complies with existing regulatory requirements (e.g., a building within a cantonment area with associated discharges / runoff within existing handling capacities)," and CatEx 35: "Demolition, disposal, or improvements involving buildings or structures when done in accordance with applicable regulations, including those regulations applying to removal of asbestos, polychlorinated biphenyls, and other hazardous materials" under Office of the Chief of Naval Operations M-5090.1 (Navy, 2017b).

4.3.2 Present & Reasonably Foreseeable Actions:

Dry Dock 4 Repair & Modernization

This project (Navy, 2018c) would modernize and reconfigure Dry Dock 4 to correct critical deficiencies and mitigate the risks and effects of flooding from tides, waves, and storm surge. The project would involve structural repairs of the dry dock walls, floor, and caisson seats. Specialized construction of a cofferdam, located outside of the dry dock approach walls, would allow for dewatering of the dry dock to enable the construction of the new caisson seats and entrance walls. The installation of a cofferdam would require a dredging permit. Informal consultations with U.S. Fish and Wildlife Service (ESA) and National Oceanic and Atmospheric Administration (EFH) determined no significant adverse impact to these resources. The modernization of the historic dry dock would result in an adverse effect to historic resources; a Memorandum Of Agreement (MOA) is being prepared. Projected construction award would be summer 2019.

P – 653: Flood Wall Improvements:

The Navy would implement dry dock flood protection improvement through the construction of a new flood wall enclosing Dry Docks 1, 2, 3, and 4; replacement of five capstans; removal of Capstan 1; and raising the elevation of Dry Dock caissons 1 and 3. The flood protection system would be installed to protect the facilities from a 500 - year flood event. The project would not involve in - water construction work; no permits would be required. No adverse impact to cultural resources. Projected construction award would be summer 2020 (Navy, 2018d).

Hazardous Materials Warehouses & Gas Cylinder Sheds
At Naval Station Norfolk & Norfolk Naval Shipyard, Virginia:

The Defense Logistics Agency (DLA) would construct a hazardous materials warehouse and gas cylinder shed in a portion of the Dean Harwood Parking Lot that would be demolished to make way for the construction of a new hazardous materials warehouse, gas cylinder shed, and pavement (Defense Logistics Agency, 2018). Approximately 479 parking spaces would be displaced at the Dean Harwood Parking Lot in the southwest quadrant of NNSY Mainsite; however, vehicle parking would be compensated by reorganization of existing parking lots and improvement and construction of several nearby lots that would be covered with 12 inches of compacted gravel and reorganized to provide replacement of up to 479 parking spaces. Minor, indirect visual impacts on the historic district and contributing resources under Alternative 1; adverse effects from partial renovation of Building 280

under Alternative 2. The Navy would consult with the Virginia SHPO to avoid, minimize, or mitigate effects on historic properties.

4.4 Cumulative Impact Analysis:

Where feasible, the cumulative impacts for ECM - 10 Energy Security, ECM 16 - Industrial Wastewater Treatment Plant, ECM 8 – Steam Distribution Upgrades, and ECM 14 - Transformer Modernization, were assessed using quantifiable data; however, for many of the resources included for analysis, quantifiable data is not available and a qualitative analysis was undertaken. The analytical methodology presented in Chapter 3, which was used to determine potential impacts to the various resources analyzed in this document, was also used to determine cumulative impacts. The study area considered for this cumulative impacts analysis is NNSY Mainsite, Scott Center, Southgate and St. Juliens Creek annexes.

The following resources have the potential to be affected by past, present, and reasonably foreseeable future actions: air quality, water resources, cultural resources, visual resources, infrastructure, hazardous materials and wastes.

4.4.1 Air Quality:

NNSY Mainsite is located in the City of Portsmouth. The city is located within the Hampton Roads Intrastate Air Quality Control Region and is categorized as attainment for all criteria pollutants. Implementation of the Proposed Action combined with past, present, and reasonably foreseeable future projects would not result in significant impacts to air quality or exceedances of the National Ambient Air Quality Standards.

4.4.2 Water Resources:

The Combined Heat And Power (CHP) plant construction and operation activities would have a negligible effect on water resources. The IWTP treated effluent would continue to be discharged to the Southern Branch of the Elizabeth River in accordance with Virginia Pollutant Discharge Elimination System (VPDES) permit VA0005215. NNSY maintains a Stormwater Pollution Prevention Plan (SPPP) that identifies potential sources of stormwater contamination to area waters and BMPs to minimize pollutants that could contaminate those waters. Under the Proposed Action, BMPs would be applied during construction and SOPs would be followed to reduce the potential for stormwater discharge impacts. Therefore, implementation of the Proposed Action combined with past, present, and reasonably foreseeable future projects would not result in significant impacts to water resources.

4.4.3 Cultural Resources:

Several past actions have had an adverse effect on the NRHP - eligible NNSY Historic District. For each project, the Navy developed a PA to mitigate the adverse effects. None of the past actions has affected NRHP - eligible archaeological resources. Present and reasonably foreseeable future actions could have adverse effects on the Historic District, but as with past actions, the Navy would consult with the Virginia SHPO to avoid, minimize, or mitigate effects on historic properties. The Proposed Action would have no adverse effect on the NNSY Historic District, and no effect on NRHP - eligible archaeological resources. Therefore, implementation of the Proposed Action combined with past, present, and reasonably foreseeable future projects would not result in significant impacts to cultural resources.

4.4.4 Visual Resources:

Facility demolition and construction in and around NNSY Mainsite have been consistent with the industrial nature of the installation and surrounding areas. Therefore, implementation of the Proposed Action combined with past, present, and reasonably foreseeable future projects would not result in significant impacts to visual resources.

4.4.5 Infrastructure:

Past actions have resulted in minor infrastructure improvements to accommodate additional personnel or replace aging infrastructure. The Proposed Action would provide for infrastructure updates and improve energy efficiencies and energy security. As such, implementation of the Proposed Action combined with past, present, and reasonably foreseeable future projects would not result in significant impacts to infrastructure.

4.4.6 Hazardous Materials & Wastes:

The use of hazardous materials during construction of the CHP Plant and IWTP would be expected. The types of materials used during the construction and operational phases would not be unique or in quantities that would exceed the quantity and use of such materials from past actions. The handling of hazardous materials would be conducted in accordance with Federal regulations and NNSY's SOPs. Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects and the adherence to standard operating procedures during construction would not result in significant impacts to hazardous materials and wastes.

4.4.7 Environmental Justice & Protection Of Children:

None of the past, present, and reasonably foreseeable future projects (identified in Section 4.3) would be expected to have a cumulative effect to this resource.

5 OTHER CONSIDERATIONS REQUIRED BY NEPA

5.1 Consistency With Other Federal, State, & Local Laws, Plans, Policies, & Regulations:

In accordance with 40 Code of Federal Regulations Section 1502.16(c), analysis of environmental consequences shall include discussion of possible conflicts between the Proposed Action and the objectives of Federal, Regional, State and Local land use plans, policies, and controls. Table 5.1-1 identifies the principal Federal and State laws and regulations that are applicable to the Proposed Action and states how compliance with these laws and regulations would be accomplished.

Table 5.1-1: Principal Federal & State Laws Applicable To The Proposed Action

Plans, Policies, & Controls	Status Of Compliance
National Environmental Policy Act (NEPA); Council on Environmental Quality (CEQ) Regulations for Implementing NEPA; Navy procedures for Implementing NEPA	This Environmental Assessment (EA) has been prepared in accordance with CEQ Regulations for implementing NEPA & Navy NEPA procedures.
Clean Air Act (CAA)	The air quality analysis concludes that the Action Alternative's proposed emissions: 1) Would not affect the current attainment status & 2) would comply with all applicable State & Regional air agency rules & regulations.
Clean Water Act (CWA)	The Proposed Action analyzed in this EA would be implemented in accordance with this Act.
Coastal Zone Management Act (CZMA)	The Navy has determined that implementing the Proposed Action is consistent, to the maximum extent practicable, with the enforceable policies of the Virginia Coastal Zone Management Program. In correspondence dated August 5, 2019, the Virginia Department of Environmental Quality concurred with the Navy's Coastal Consistency Determination findings provided all applicable permits & approvals are obtained prior to implementing the actions proposed (Appendix D).
National Historic Preservation Act (NHPA)	The Navy has concluded there would be no adverse effects to NRHP - listed or eligible cultural resources. In their May 22, 2019 memorandum to the Navy, the Virginia State Historic Preservation Officer concluded that no historic properties would be affected by the project (Appendix B).
Endangered Species Act (ESA)	The Navy has determined there would be no effect to listed species resulting from implementation of the Proposed Action.
Migratory Bird Treaty Act (MBTA)	The Proposed Action analyzed in this EA would be implemented in accordance with this Act.
Bald and Golden Eagle Protection Act (BGEPA)	The Navy has determined there would be no effect to Bald & Golden Eagles & no permit is required under the Bald & Golden Eagle Protection Act.
Comprehensive Environmental Response and Liability Act (CERLA)	The Proposed Action analyzed in this EA would be implemented in accordance with this Act.
Resource Conservation and Recovery Act (RCRA)	The Proposed Action analyzed in this EA would be implemented in accordance with this Act.
Toxic Substances Control Act (TSCA)	The Proposed Action analyzed in this EA would be implemented in accordance with this Act.

Table 5.1-1: Principal Federal & State Laws Applicable To The Proposed Action

Plans, Policies, & Controls	Status Of Compliance
National Energy Conservation Policy Act (NECPA)	The Proposed Action analyzed in this EA would be implemented in accordance with this Act.
Energy Policy Act	The Proposed Action analyzed in this EA would be implemented in accordance with this Act.
Energy Independence and Security Act (EISA)	The Proposed Action analyzed in this EA would be implemented in accordance with this Act.
Executive Order (EO) 11988: Floodplain Management	The Proposed Action analyzed in this EA would be implemented in accordance with this EO.
EO 12898: Federal Actions To Address Environmental Justice In Minority Populations And Low-Income Populations	The Navy determined there would be no disproportionate impact to minority or low - income populations.
EO 13045: Protection Of Children From Environmental Health Risks And Safety Risks	The Navy determined there would be no adverse impact to children's environmental health or safety.
EO 13783: Promoting Energy Independence And Economic Growth	The Proposed Action analyzed in this EA would be implemented in accordance with this EO.
EO 13834: Efficient Federal Operations	The Proposed Action analyzed in this EA would be implemented in accordance with this EO.

5.2 Irreversible Or Irretrievable Commitments Of Resources:

NEPA requires that environmental analyses include identification of any irreversible and irretrievable commitments of resources that would be involved if the Proposed Action is implemented. Resources that are irreversibly or irretrievably committed to a project are those that are used on a long - term or permanent basis. This includes the use of non - renewable resources such as metal and fuel, and natural or cultural resources. These resources are irretrievable in that they would be used for this project when they could have been used for other purposes. Human labor is also considered an irretrievable resource. Another impact that falls under this category is the unavoidable destruction of natural resources that could limit the range of potential uses of that particular environment.

Executive Order 13834: *Efficient Federal Operations* (May 2018), set goals for Federal agencies in areas such as energy efficiency, renewable energy, toxic waste management and disposal, recycling, sustainable buildings, electronics stewardship, and water conservation. Implementation of the Proposed Action would involve human labor, the consumption of fuel, oil, and lubricants for construction vehicles, and the use of construction materials such as wood and metal. The recycling and reuse of eligible metal materials during demolition could potentially offset the loss of some construction materials. The Proposed Action would not destroy any natural or cultural resources. Implementing the Proposed Action would not result in significant irreversible or irretrievable commitment of resources.

5.3 Unavoidable Adverse Impacts:

NEPA requires a description of any significant impacts resulting from implementation of a proposed action, including those that can be mitigated to a less than significant level. Based on the analysis in this EA, the Proposed Action would not result in any significant or unavoidable adverse impacts to any resource area. As such, no mitigation actions are required.

5.4 Relationship Between Short - Term Use Of The Environment & Long - Term Productivity:

NEPA requires an analysis of the relationship between a project's short - term impacts on the environment and the effects that these impacts may have on the maintenance and enhancement of the long - term productivity of the affected environment. Impacts that narrow the range of beneficial uses of the environment are of particular concern. This refers to the possibility that choosing one development site reduces future flexibility in pursuing other options, or that using a parcel of land or other resources often eliminates the possibility of other uses at that site.

The Proposed Action would dedicate equipment and other resources to a particular use during an extended period of time. These resources would not be available for other productive uses throughout the useful life of the proposed facilities and infrastructure. However, these impacts are considered negligible, as the facilities and geographic areas associated with the Combined Heat And Power (CHP) Plant and Industrial Wastewater Treatment Plant (IWTP) are designated for and or have historically accommodated the types of uses proposed. The Proposed Action has the potential to incrementally increase global emissions of greenhouse gases. However, the overall emissions do not exceed the comparative threshold, and as such, the Proposed Action does not represent a net incremental addition to the global greenhouse gases and global climate change problem. The Proposed Action would not be expected to result in any impacts that would significantly reduce environmental productivity or permanently narrow the range of beneficial uses of the environment.

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Contracting Officer's Representative, Lead Environmental (NEPA) Planner

Rebecca Peeling, (Public Works Department, Portsmouth, PRM42:RP)
M.A. in Archaeology, & Heritage
B.A. in Anthropology
Years of Experience: 14
Lead Installation (Norfolk Naval Shipyard, Portsmouth, VA) Environmental (NEPA) Planner

Cardno-GS:

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B.A. in Environmental Science
Years of Experience: 10
Infrastructure, Hazardous Materials & Wastes

Dana Banwart, AICP
B.S. in Biology
Years of Experience: 20
Project Director

Elizabeth Burak
M.S. in Biology
Years of Experience: 20
Quality Assurance / Quality Control

Lesley Hamilton
B.S. in Environmental Engineering
B.S. in Biology
Years of Experience: 31
Air Quality

Michael Harrison
M.S. in Environmental Science
Years of Experience: 13
Biological Resources, & GIS

Chareé Hoffman
B.S. in Biology
Years of Experience: 19
Project Manager, Water Resources, & Environmental Justice

Sharon Simpson
A.S. in Science
Years of Experience: 15
Document Production

Lori Thursby
M.S. in Architectural History
B.S. in Environmental Design in Architecture
Years of Experience: 23
Cultural Resources, & Visual Resources

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APPENDIX A:
Public Involvement Documentation

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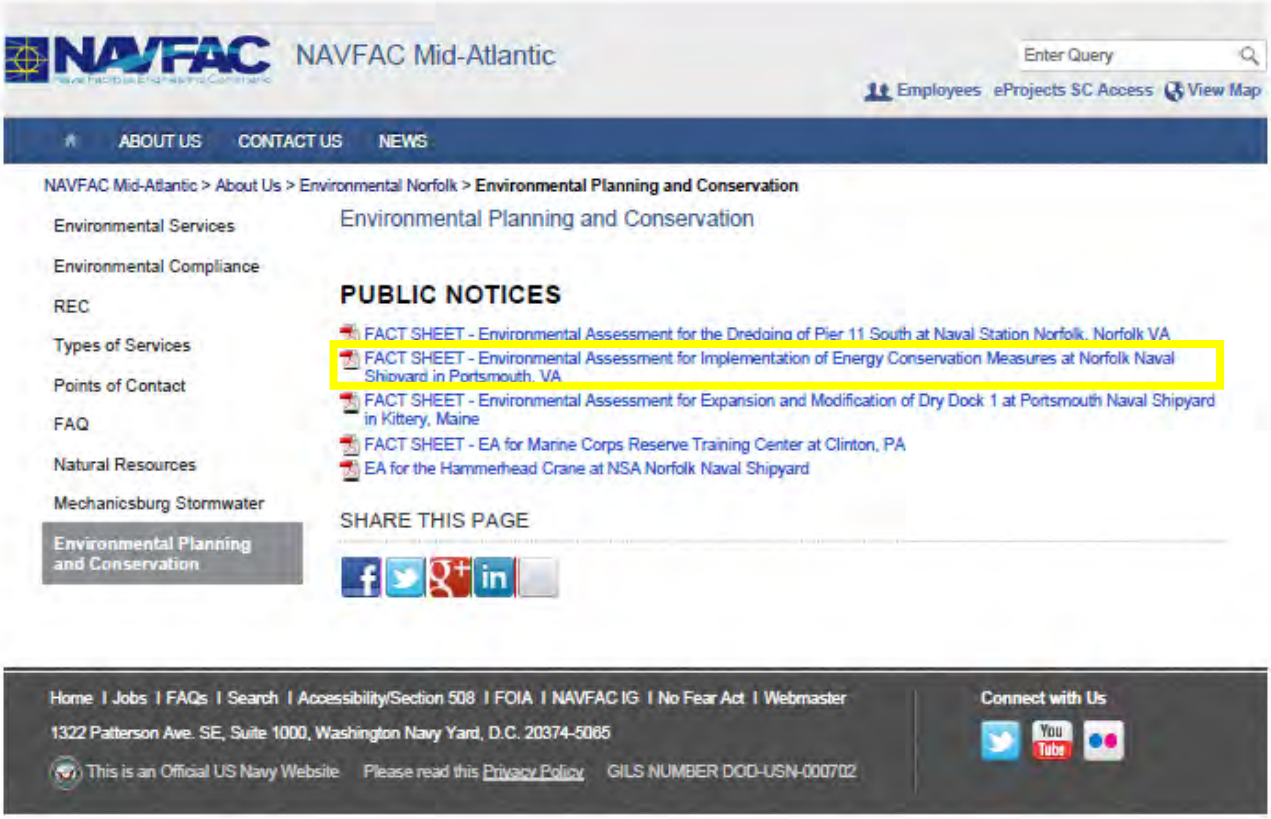
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Environmental Planning and Conservation
Environmental Planning and Conservation
PUBLIC NOTICES
FACT SHEET - Environmental Assessment for the Dredging of Pier 11 South at Naval Station Norfolk, Norfolk VA
FACT SHEET - Environmental Assessment for Implementation of Energy Conservation Measures at Norfolk Naval Shipyard in Portsmouth, VA
FACT SHEET - Environmental Assessment for Expansion and Modification of Dry Dock 1 at Portsmouth Naval Shipyard in Kittery, Maine
FACT SHEET - EA for Marine Corps Reserve Training Center at Clinton, PA
EA for the Hammerhead Crane at NSA Norfolk Naval Shipyard
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Environmental Assessment for Implementation of Energy Conservation Measures at Norfolk Naval Shipyard in Portsmouth, Virginia

The Proposed Action

In accordance with the National Environmental Policy Act (NEPA), the Norfolk Naval Shipyard (NNSY), an installation of the U.S. Navy, is preparing an environmental assessment (EA) for the implementation of energy conservation measures (ECMs) through an energy savings performance contract at NNSY. The ECMs include proposed construction of a combined heat and power (CHP) plant; installation of a micro-grid control system (MCS) and battery energy storage system (BESS); and replacement of an industrial wastewater treatment plant (IWTP). Numerous proposed non-construction ECMs would be implemented that consist primarily of upgrading and installing efficient energy systems and fixtures within existing facilities to manage and reduce energy consumption.

Purpose and Need for the Proposed Action

The purpose of the Proposed Action is to reduce the Navy's energy use and increase energy security, strategic flexibility, and resource availability at NNSY mainsite and the Navy's Scott Center, Southgate, and St. Juliens Creek annexes. The Proposed Action is needed to assist the Navy in meeting federal policies, goals, and standards concerning energy security through enhancing resiliency and finding efficiencies by reducing energy and water use. The proposed ECMs would be owned and operated by the Navy and installed and maintained by an energy service company, through award of an energy savings performance contract.

Regional Location of the NNSY

Energy Conservation Measures – Construction Projects

A CHP plant is proposed to be located adjacent to the Gosport Ring-Tie Substation. The CHP plant would provide the installation with its own source of steam and electricity. A two-story, 30,000 square foot building would be constructed to house the CHP plant. To meet the high natural gas demand of the proposed CHP plant, a new high-pressure natural gas line would be installed by a natural gas provider. A new steam distribution line would connect the CHP plant to existing main steam lines along Dale Street at NNSY.

A proposed MCS controller and interface dashboard, to be located inside the CHP plant, would control the distribution of electrical power throughout NNSY in the event of a grid or outside power source failure. A 5 megawatt lithium-ion BESS would be located immediately adjacent to the south side of the proposed CHP plant. The BESS would be integrated into the electrical distribution system to provide "bridge power" for the few minutes it would take to bring the existing NNSY's stand-by emergency diesel generators online.

The existing IWTP is proposed to be removed and a new one built in its place. The new IWTP would be constructed in phases so that the existing plant could remain in operation while the new plant was being built.

Locations of Proposed ECM Projects

Environmental Assessment for Implementation of Energy Conservation Measures at Norfolk Naval Shipyard in Portsmouth, Virginia

Location of Proposed CHP Plant and BESS

Location of Existing and Proposed IWTP

Energy Conservation Measures – Non-construction Projects

Numerous ECMs are also proposed to be implemented at NNSY mainsite and Scott Center, Southgate and St. Juliens Creek annexes. These ECMs would contribute to the Navy's goals for energy efficiency as defined in Executive Order 13834, Efficient Federal Operations. They consist primarily of upgrading and installing efficient energy systems and fixtures within existing facilities to manage and reduce energy consumption.

Scope of the EA

The Navy is considering two alternatives, the Action Alternative that meets the purpose and need, and a No Action Alternative. No other reasonable action alternatives that would satisfy the purpose and need were identified.

The EA will present the existing conditions at the NNSY proposed project sites and evaluate the potential consequences of the Proposed Action on the natural and human environment. Specifically, the EA will assess the potential impacts of the Proposed Action on the following resource areas: air quality; water, cultural, visual, and biological resources; infrastructure; hazardous materials and wastes, and environmental justice.

The Navy will submit a Coastal Consistency Determination to the Virginia Department of Environmental Quality pursuant to its responsibilities under the Coastal Zone Management Act.

The Navy is consulting with the Virginia State Historic Preservation Office regarding potential effects of the Proposed Action on historic properties. Under Section 106 of the National Historic Preservation Act, the Proposed Action is anticipated to have no adverse effect on the NNSY Historic District or the Norfolk and Portsmouth Belt Line Railroad Bridge, and no effect on any other known historic properties within the area of potential effects determined to be the NNSY mainsite and Scott Center, Southgate, and St. Juliens Creek annexes.

For more information on the Proposed Action, please contact:

Mary Stuck, Installation Environmental Program Director
Norfolk Naval Shipyard
1500 Pennock Street BLDG 1500 5th floor
Portsmouth, VA 23709
Office: (757) 235-0453; E-mail: mary.stuck@navy.mil

Your comments are requested by **June 7, 2019**.

NOTICE OF PREPARATION OF AN ENVIRONMENTAL ASSESSMENT FOR PROPOSED IMPLEMENTATION OF ENERGY CONSERVATION MEASURES AT NORFOLK NAVAL SHIPYARD IN PORTSMOUTH, VIRGINIA

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https://www.navfac.navy.mil/navfac_worldwide/atlantic/fecs/mid-atlantic/about_us/environmental_norfolk/environmental_planning_and_conservation.html

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The public comment period ends June 7, 2019. For additional information, please contact Mary Stuck in writing at Norfolk Naval Shipyard, 1500 Pennock Street BLDG 1500 5th floor,

Portsmouth, VA 23709 ; via e-mail: mary.stuck@navy.mil or call (757) 235-0453.

Abortion foes split over exceptions

Bans even in rape, incest divisive amid wins for movement

By David Crary
Associated Press

Even as the anti-abortion movement celebrates sweeping bans passed by several states, it's divided by a widening rift over whether those prohibitions should apply to victims of rape and incest.

The debate pits those who believe any abortion is immoral against those who worry that a no-exception stance could be harmful to some Republican candidates in upcoming elections. A Gallup poll last year found that 77% of Americans support exceptions in cases of rape and incest.

"There is media spotlight shining on this today," said Clarke Forsythe, senior counsel with Americans United for Life. "State leaders need to be prudent and reflect not only on state elections but also national elections, and the pace of change the public is right across."

There's potential for even more division.

The Federalist, an online magazine influential in conservative and anti-abortion circles, ran an article last week by two abortion opponents suggesting that women who induce their own abortions should be prosecuted for murder. The position is at odds with the pro-women rhetoric of leading anti-abortion groups.

Division over rape-and-incest exceptions have existed within the anti-abortion movement for years, but have become more apparent as several states in the South and Midwest enacted tough abortion bans.

Only the ban in Georgia includes an exception for victims of rape or incest — and then only if the woman files a police report first. Measures enacted in Alabama, Kentucky, Mississippi, Missouri and Ohio do not contain those exceptions, nor does a measure nearing final approval in Louisiana.

Alabama's ban is the toughest. Performing an abortion at any stage of pregnancy would be a felony punishable by up to 99 years or life in prison. The only exception would be when the woman's health is at serious risk.

Some Republicans in Alabama's GOP-controlled Senate, as well as minority Democrats, were enraged when an exemption for rape and incest was removed without a roll call vote. The flare-up prompted a five-day postponement before final approval came May 14.

Emboldened by the bans, 17 anti-abortion leaders sent a letter last week to Republican National Committee chairwoman Ronna McDaniel requesting a meeting and urging the GOP to explicitly oppose exceptions for rape and incest.

The signatories included Kristan Hawkins, president of Students for Life, the Rev. Frank Pavone, director of Priests for Life, and activist Ryan Bomberger, the son of a woman who was impregnated by a rapist but opted against having an abortion.

"We understand that issues like rape and incest are difficult topics to tackle" the letter said. "Nevertheless, it is our view that the value of human life is not determined by the circumstances of one's conception or birth."

President Donald Trump, House Minority Leader Kevin McCarthy of California and Senate Majority Leader Mitch McConnell of Kentucky also have distanced themselves from the no-exceptions bans.

"I am strongly Pro-Life, with the three exceptions — Rape, Incest and protecting the Life of the mother," Trump tweeted on May 15. "We must stick together and Win for Life in 2020. Democrats foolish and do not stay UNITED as one, all of our hard fought gains for Life can, and will, rapidly disappear!"

In several state legislatures, debate over the exceptions produced dramatic moments.

Samantha Blakely, 35, a travel industry employee from Birmingham, Alabama, testified at a hearing on that state's ban about her decision to have an abortion after a rape in 2007 resulted in pregnancy. She says ban supporters ignore the difficult situations faced by women like her.

"They have absolutely lost sight of victims," Blakely said. "There are blinders on, to block out victims of rape and incest."

If the new law had been in effect when she was raped, Blakely said, she would have done anything to end the pregnancy — possibly including suicide.

"I know I would not be emotionally or mentally or financially stable enough to give that child what they needed," Blakely said.

In South Carolina, where the legislative session ended before a proposed abortion ban could be passed, there was bitter debate over whether to include an exception for rape and incest.

GOP state Rep. Nancy Mace objected angrily after a fellow Republican lawmaker raised out a flier suggesting that a rapist who impregnates his victim should be referred to as a "sperm donor."

After Mace proposed adding the exceptions to the bill, another GOP colleague protested, while referring to rape in a way that appeared to diminish its seriousness as a violent crime.

"The question is whether another life should be taken because of a bad act," Rep. John McCravy told fellow lawmakers.

None of the abortion bans enacted this year have taken effect. All are expected to be blocked by federal courts, with ban supporters hoping appeals might lead to the U.S. Supreme Court.

Abortion rights supporters rally in New Orleans and Atlanta, with no exception for rape or incest, as bans weighed.

Slain UNCC student gets Purple Heart, Bronze Star

Howell saved lives during Charlotte campus attack

Associated Press

WAYNESVILLE, N.C. — A University of North Carolina-Charlotte student who was killed when he tackled a gunman who opened fire inside a classroom has been posthumously awarded military honors.

Army ROTC cadet Riley Howell was awarded a Purple Heart and a Bronze Star.

The Charlotte Observer reported Waynesville police Chief William Hollingsed and Haywood County Sheriff Greg Christopher presented Howell's family with the medals Wednesday. They were provided by Thomas Matteo, president of the Purple Heart Society.

Howell, who was 21 when he died, is credited with saving lives during the April 10 attack on the Charlotte campus that also killed 6-year-old student Ella R. Parker and wounded four others.

Authorities have charged 22-year-old Trystan Andrew Terrell with murder, attempted murder and other offenses.


The family of Riley Howell receives his diploma at UNC Charlotte's commencement on May 11.

VIRGINIA MEDIA

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Commonwealth of Virginia
City of Newport News

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This day, Cynthia Cave-Powell appeared before me and, after being duly sworn, made oath that:
1) He/she is affidavit clerk of The Virginian Pilot, a newspaper published by Virginian-Pilot Media Companies, LLC in the city of Norfolk, Portsmouth, Chesapeake, Suffolk and Virginia Beach and the Commonwealth of Virginia and in the state of North Carolina.
2) That the advertisement hereto annexed has been published in said newspaper on the dates stated below

Published on: **May 26, 2019**

Cynthia Cave-Powell

Subscribed and sworn to before me in my city and state on the day and year aforesaid this 5th day of July, 2019.
My commission expires 12/31/2023 Reg # 7818258

Hope Askew

Signature of Notary

Hope Sheree Askew
NOTARY PUBLIC
REG. #7818258
MY COMMISSION EXPIRES
12/31/2023
COMMONWEALTH OF VIRGINIA

1

VIRGINIA MEDIA

NOTICE OF PREPARATION OF AN ENVIRONMENTAL ASSESSMENT FOR PROPOSED IMPLEMENTATION OF ENERGY CONSERVATION MEASURES AT NORFOLK NAVAL SHIPYARD IN PORTSMOUTH, VIRGINIA

The Norfolk Naval Shipyard (NNSY) gives notice, per the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality regulations at 40 Code of Federal Regulations (CFR) Parts 1500-1508, and Navy NEPA regulations, that an Environmental Assessment (EA) is being prepared for the implementation of energy conservation measures (ECMs) through award of an energy savings performance contract at NNSY. The ECMs include proposed construction of a combined heat and power plant; installation of a micro-grid control system and battery energy storage system; replacement of an industrial wastewater treatment plant, and non-construction improvements. The Proposed Action is needed to assist the Navy in meeting federal policies, goals, and standards concerning energy security through enhancing resiliency and finding efficiencies by reducing energy and water use. The Navy has prepared a factsheet that describes the project and the potential environmental impacts. A copy of the project factsheet may be obtained from the following public website: https://www.navfac.navy.mil/navfac_worldwide/atlantic/fecs/mid-atlantic/about_us/environmental_norfolk/environmental_planning_and_conservation.html

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NOTICE OF AVAILABILITY OF AN ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT FOR THE IMPLEMENTATION OF ENERGY CONSERVATION MEASURES AT NORFOLK NAVAL SHIPYARD IN PORTSMOUTH, VIRGINIA

The Department of the Navy gives notice, per the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality (CEQ) regulations 40 Code of Federal Regulations (CFR) parts 1500-1508, & U.S. Navy NEPA regulations in 32 CFR part 775, that a FONSI has been signed for the proposed implementation of Energy Conservation Measures (ECMs) through the award of an Energy Savings Performance (ESP) contract at the Norfolk Naval Shipyard (NNSY). The ECMs include proposed construction of a combined heat & power plant; installation of a micro-grid control system & battery energy storage system; replacement of an industrial wastewater treatment plant, & non-construction improvements. The Proposed Action will assist the Navy in meeting Federal policies, goals, & standards concerning energy security through enhancing resiliency & finding efficiencies by reducing energy & water use. The FONSI is based on an Environmental Assessment (EA), which concluded that an Environmental Impact Statement (EIS) is not required.

The EA considered multiple potential impacts, including environmental impacts on: air quality, water resources, cultural resources, visual resources, biological resources, infrastructure, & hazardous materials & wastes. Based on information gathered during the preparation of the EA, the U.S. Navy has determined that the proposed action will not have a significant effect on the human environment.

The EA & FONSI may be obtained from: Norfolk Naval Shipyard, 1500 Pennock Street, Building 1500, 5th Floor, Portsmouth, VA 23709 (ATTN: Energy Conservation Measures EA / Ms. M. Stuck, PRM4, IEPD). A limited number of documents are available to fill single copy requests.

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A limited number of documents are available to fill single copy requests.

The Dome site developer and the city have a plan for how to finance a $325 million project that would transform two Oceanfront blocks into a surf park and entertainment venue.

DEAL

Continued from 1

publicly vetted before the City Council and the Virginia Beach Development Authority vote on it in November.

But hold off on waxing the surfboards just yet. It could be at least two more years before construction begins, according to the developer.

The 10-acre site between 18th and 20th streets is one of the last remaining open spaces in the heart of the resort area. Since the city's original convention center and concert hall, The Dome, was torn down in 1994, the land has been used for two parking lots.

Last year, the city began negotiating exclusively with Venture Realty Group. In January, the city approved a non-binding term sheet outlining the basic elements of the development agreement.

Virginia Beach has committed to providing $95 million in tourism tax dollars to pay for parking, street improvements and the entertainment venue. Also, the city has offered up to $5 million a year through a 20-year-long performance grant.

Now, the city plans to create a special district for the project that would be run by a Community Development Authority.

It would be governed by a board made up of the entire City Council if a state law is amended. Currently, the law limits the number of CDA board members to five. Councilman John Moss sponsored a request to increase that number to 11.

City Attorney Mark Stiles said the only effect of the change would be that council members "can all act collectively."

The CDA would be able to issue and sell bonds to pay for a portion of the parking garages as well as street and sidewalk improvements.

Councilman Guy Tower, who represents the resort area, supports the idea.

"I realize there's some trepidation with anything with the word 'authority' around here, but I don't think there's anything to worry about," he said.

As an independent entity, it would not impact the city's debt capacity, according to Mike Culpepper, a managing partner in Venture.

"It truly is a limited authority that is defined to a specific space," he said.

The bonds would be repaid with performance grant revenue from the city worth up to $5 million a year for two decades.

Some of that money would come from the city's Tourism Investment Program, a coffer of local tourism taxes on admissions and meals. Additional taxes on amusements and real estate within the project boundaries would also support the grant, according to city documents.

The authority would be able to levy 25 cents per $100 of assessed real estate value inside of the district to reinvest in the property, Culpepper said. That's in addition to the general real estate tax rate of 99 cents per $100 of assessed value.

Atlantic Park would also become a special services district similar to what exists in Town Center and Sandbridge. For the new development, that means property owners would pay yet another real estate tax for operations and management.

Unlike a tax increment fund, with a CDA, as property values rise, additional real estate taxes collected would go to the city's general fund, Culpepper said.

Also, a new law that passed this year allows Virginia Beach to keep most of the state sales tax revenues within the project to pay back its bonds.

The Community Development Authority financing model has been used in other parts of the region.

In Hampton, a Community Development Authority was created in 2006 for a mixed-used project at the former Coliseum Mall site. But with a hurry reliance on retail. Initially, Peninsula Town Center struggled through a recession and changing shopping habits.

In 2013, the developer defaulted on a $168 million bank loan, according to Daily Press reports. Subsequently, subdivided parcels owned by the developer in the CDA district were auctioned.

In 2014, Dallas-based Tabani Group bought Peninsula Town Center, which now features shops, restaurants, apartments, a hotel, movie theater, bowling alley and offices. Bondholders continue to receive payments, and the bonds were recently refinanced, according to reports. Assessments on real estate, sales and meals as well as a special tax paid by the property owners help pay the project's debt.

Patricia A. Molochick, Hampton's senior deputy city attorney, said the CDA has been a successful endeavor despite some of the economic challenges. A recent shift to residential and amusement offerings at the center has helped.

"The initial thrust for this investment was to revitalize a core retail hub in the center of the city," she wrote in an email. "Today, it is a source of substantial real estate, sales, and other local tax revenue (food and beverage, lodging, admissions)."

In Virginia Beach, it's estimated that Atlantic Park would generate $2.8 million for the city, $1.9 million for schools and $1.5 million for the tourism fund by its third year of operation, Culpepper said.

Since the initial plans were conceived, the developer has had to modify part of the project.

Venture Realty Group had hoped a parking deck and office building could be built on Virginia Beach United Methodist's lot at the corner of 19th Street and Pacific Avenue.

But the church had wanted Virginia Beach to lease the land, and former City Manager Dave Hansen had thought the city should buy it, according to Oral Lambert, a church spokesman. Hansen ended the discussion over the summer. The developer is now considering other nearby parcels, according to Culpepper.

The city also began to look at an alternative financing mechanism over the summer. Originally, in the term sheet, the city had wanted the Atlantic Park developer to apply for a state financing program that has been an incentive for hotel construction, including for The Main in Norfolk and The Cavalier in Virginia Beach. But Venture Realty Group had concerns about how the state's Tourism Development Financing Program would work with a mixed-use project.

"We noted from the very beginning that there were going to be challenges" with that type of financing, Culpepper told members of the Resort Advisory Commission this month. "We are different. We are a collective of lots of tenants and operators."

In addition to the entertainment aspects, Atlantic Park will feature retail and restaurants, offices, apartments and almost 2,000 parking spaces in garages. The much-anticipated surf park with man-made waves is still planned for the site along with a 3,500-seat live performance venue that will pay tribute to the original Dome.

A public briefing on the development agreement will be held Tuesday, followed by a hearing at the Nov. 12 City Council meeting. A vote is scheduled on Nov. 19.

Stacy Parker, 757-222-5125, stacy.parker@pilotonline.com

A surf park will be the centerpiece of Venture Realty Group's plans for the Dome site at 19th Street in Virginia Beach.

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Yancey, Simonds in Peninsula rematch

Outcome could determine balance in Richmond

By Dave Ress
Staff writer

NEWPORT NEWS — Last time, their hard-fought race for Newport News' 94th House of Delegates district ended in a tie, with Del. David Yancey, R-Newport News, returning to Richmond thanks to a lucky lot-drawing.

That kept Republicans in control of a chamber they'd dominated for almost two decades, though with a greatly reduced 51-49 edge.

The rematch, in a district that's been tweaked to lean even more Democratic, puts GOP maverick Yancey against Newport News School Board member Shelly Simonds, who's running hard on key Democratic issues of gun control, school funding and health care.

And the outcome, once again, could help decide the balance of power in Richmond, as Democrats aim to take unified control of the legislature and governor's mansion.

The 94th district is one of a handful statewide in which a Libertarian, Michael Bartley, is on the ballot. He also ran in 2017 and got 3 % of the vote.

Yancey broke with the House GOP caucus this year with an emotional speech calling for ratification of the Equal Rights Amendment, and was among the 23 House Republicans who changed their minds to back Medicaid expansion last year.

But Simonds says it was too little, too late.

Guns

And many Democrats say the same about Yancey's proposal, during this year's special session on gun violence, aimed at helping police break up gun trafficking rings by allowing informants to seek prison sentence reductions. He's also proposed stiffer penalties for having stolen guns and using them in crimes.

"I recognize the fear that gun violence brings to our city, which is why I have worked with local law enforcement and prosecutors to introduce legislation to begin to address the problem," Yancey said.

"The first step is to get common sense gun safety bills up for a vote, not caught up in partisan committee nonsense," Simonds said. "For me, keeping our communities safe should not be a partisan issue and there is no excuse for not taking action. Like a majority of Virginians, I support universal background checks. I would also support reinstating the one-handgun-a-month law."

Bartley said the best approach is to legalize all victimless crimes, adding "Just like in the days of Al Capone, when you make a substance illegal, people will fight over the government-created profits with guns."

First things first

Yancey said the first thing he'd do if re-elected is to push a budget amendment to fund the new Denbigh Aviation Academy, and call it the Newport News Sea & Space Academy.

"Why? Because it is part of the work force cultivation and development the Peninsula needs and is complimentary to the vision of the new school superintendent and the school board to foster the education that launches new opportunities," he said.

Simonds said she wants to tackle a problem she keeps hearing about when knocking on voters' doors: the high cost of medicine.

"I will be ready on day one to introduce a bill that will help lower the skyrocketing price of prescription drugs," she said. "My bill will create a Drug Affordability Board that will police the price of drugs for Virginians. Based on similar legislation that was recently implemented in Maryland, this panel will stop big pharmaceuticals from hiking up prices and ensure Virginians can afford their prescriptions without breaking the bank."

Bartley said his first bill would be to change Virginia's approach to funding of K-12 education, by appropriating money to students, not to school systems, so "the student can take the money to any public school in the state," with 75% of that money following students if they go to a private institution or are home schooled.

Passions

Education is her passion, Simonds said.

"Connecting students to careers is one of my priorities as the chair of New Horizons board and this will continue to be a priority for me in Richmond," she said. "We need to fight for funding for career and technical programs and be sure that our school counselors have the tools they need to guide students into careers in health and shipbuilding. I am interested in finding grant funding to create a regional STEM program focused on drone certification at Denbigh Aviation Academy."

Yancey's passion is Newport News, the city where he grew up.

"I don't represent a number, 94, I represent the city of Newport News, the Peninsula, Hampton Roads, and the Commonwealth of Virginia," he said. "My focus is on doing the best I can to deliver the goods for the people I represent. And whether that is introducing legislation, a budget amendment for the city, or calling a city service on behalf of a citizen who has a pothole on their street, or a drainage issue, or fixing a broken stop sign, I do my best to get the results that matter."

Bartley wants to shrink government.

"As an engineer I try to make systems simpler, to be more efficient. The same can be applied to the government. Have the government do less, and you will have a better government," he said.

The district covers 18 precincts in central and northern Newport News. After the court-ordered shift in boundaries, it leans even more strongly Democratic than it did before. The reconfigured district went 63% for Sen. Tim Kaine in 2018 and 66% for Gov. Ralph Northam in 2017, according to the Virginia Public Access Project.

Dave Ress, 757-247-4535, dress@dailypress.com

NOTICE OF AVAILABILITY OF AN ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT FOR THE IMPLEMENTATION OF ENERGY CONSERVATION MEASURES AT NORFOLK NAVAL SHIPYARD IN PORTSMOUTH, VIRGINIA

The Department of the Navy gives notice, per the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality (CEQ) regulations 40 Code of Federal Regulations (CFR) parts 1500-1508, & U.S. Navy NEPA regulations in 32 CFR part 775, that a FONSI has been signed for the proposed implementation of Energy Conservation Measures (ECMs) through the award of an Energy Savings Performance (ESP) contract at the Norfolk Naval Shipyard (NNSY). The ECMs include proposed construction of a combined heat & power plant; installation of a micro-grid control system & battery energy storage system; replacement of an industrial wastewater treatment plant, & non-construction improvements. The Proposed Action will assist the Navy in meeting Federal policies, goals, & standards concerning energy security through enhancing resiliency & finding efficiencies by reducing energy & water use. The FONSI is based on an Environmental Assessment (EA), which concluded that an Environmental Impact Statement (EIS) is not required.

The EA considered multiple potential impacts, including environmental impacts on: air quality, water resources, cultural resources, visual resources, biological resources, infrastructure, & hazardous materials & wastes. Based on information gathered during the preparation of the EA, the U.S. Navy has determined that the proposed action will not have a significant effect on the human environment.

The EA & FONSI may be obtained from: Norfolk Naval Shipyard, 1500 Pennock Street, Building 1500, 5th Floor, Portsmouth, VA 23709 (ATTN: Energy Conservation Measures EA / Ms. M. Stuck, PRMM, IEPD). A limited number of documents are available to fill single copy requests.

Marriage license ruling questioned

By Matthew Barakat
Associated Press

FALLS CHURCH — A judge recently struck down a Virginia law requiring marriage applicants to disclose their race, but the two sides in the legal dispute disagree over what the judge's ruling means.

Earlier this month, federal judge Rossie D. Alston Jr. in Alexandria ruled that a Virginia law requiring marriage applicants to state their race is unconstitutional and can't be enforced.

Whether applicants can be asked to disclose their race on an optional basis, though, is still a matter of dispute. State officials say they believe they can still ask the question, as long as it's clear that applicants can decline to answer.

That was the compromise Virginia Attorney General Mark Herring put forward immediately after the lawsuit was filed, saying it allowed Virginians to get married without forcing them to label themselves against their will without entirely disregarding a state law.

The lawyer who filed the suit says the question must be removed from the form entirely.

nation&world
THE VIRGINIAN-PILOT — TUESDAY, OCTOBER 29, 2019 PAGE 4

House to vote on formal inquiry

Resolution to set impeachment rules against president

By Mary Clare Jalonick, Eric Tucker and Lisa Mascaro
Associated Press

WASHINGTON — House Democrats are laying the groundwork for the next phase of their impeachment inquiry with a vote this week on a resolution to affirm the investigation, set rules for public hearings and outline the potential process for writing articles of impeachment against President Donald Trump.

The Washington Post reported the vote would be Thursday.

House Speaker Nancy Pelosi announced a vote on the resolution, which would be the first formal House vote on the impeachment inquiry. It aims to nullify complaints from Trump and his allies — amplified last week when Republicans stormed a secure room used for impeachment interviews — that the process is illegitimate, unfair and lacking in due process.

Despite the move toward a vote, Democrats insisted they weren't yielding to Republicans pressure. Pelosi dismissed the White House's argument that impeachment requires an authorizing vote as having "no merit." She noted a federal judge agreed with Democrats in a ruling last week.

Trump has cited the lack of a House vote as a reason to refuse cooperation with the impeachment investigation. In the wake of Pelosi's announcement, the White House said nothing had changed.

Pelosi "is finally admitting what the rest of America already knew — that Democrats were conducting unauthorized impeachment proceeding, refusing to give the President due process, and their secret, shady, closed door depositions are completely and irreversibly illegitimate," said White House press secretary Stephanie Grisham.

Pelosi did not release the text of the resolution but said it would establish procedure for public hearings, authorize the disclosure of closed-door deposition transcripts and set forth "due process rights for the President and his Counsel."

It's unclear if that means that White House lawyers will be able to interview witnesses, or if Republicans will be able to call their own. Republicans have noted that the minority had those powers in previous impeachment investigations.

Senate Republicans took a wait-and-see approach to the resolution.

Sen. Ron Johnson of Wisconsin said it was a "good thing" the House was considering a vote. But when asked if Trump should cooperate fully once it passes, he replied, "I'll leave that up to the White House."

Sen. John Cornyn of Texas said the impeachment process has been "disruptable from the beginning." Like other Republicans, he wanted the full details.

Many government officials have cooperated with the inquiry despite Trump's orders.

But Pelosi's announcement came hours after a former White House national security official defied a House subpoena for closed-door testimony, escalating the stand-off between Congress and the White House over who will testify.

Earlier Monday, Charles Kupperman, who was a deputy to former national security adviser John Bolton, failed to show up for the scheduled closed-door deposition after filing a lawsuit asking a federal court in Washington to rule on whether he was legally required to appear. In a statement, Kupperman said he was awaiting "judicial clarity."

House Intelligence Chairman Adam Schiff said Kupperman's suit has "no basis in law" and speculated that the White House didn't want him to testify because his testimony could be incriminating. Democrats are investigating Trump's pressure on the Ukrainian government to pursue politically motivated investigations as the administration was also withholding military aid to the country.

"If this witness had something to say that would be helpful to the White House, they would've wanted him to come and testify," Schiff told reporters. "They plainly don't."

Schiff said the three committees leading the impeachment inquiry will move forward, with or without testimony from Kupperman and other witnesses. Democrats have indicated that they are likely to use no-show witnesses to write an article of impeachment against Trump for obstruction of justice, rather than launching potentially lengthy court battles to obtain testimony.

"We are not willing to allow the White House to engage us in a lengthy game of rope-a-dope in the courts, so we will move forward," Schiff said.

Two current National Security Council staff members, Alexander Vindman and Tim Morrison, are scheduled to appear this week and would be the first White House employees to testify in the inquiry. Morrison's attorney, Barbara Van Gelder, said that if Morrison is subpoenaed, he will appear.

The argument advanced by Kupperman's lawyers turns on his status as a close adviser to the president and may not be available for other administration officials who are lower down the executive branch organization chart or who did not have regular contact with Trump.

Kupperman, his lawyers say, advised Trump on a regular basis; therefore, he can't be compelled to testify.

PATRICK SEMANSKY/AP

Rep. Adam Schiff, second from right, said the inquiry will move forward after a witness failed to show up for a deposition.

No Pentagon victory lap after al-Baghdadi's death

Reinforcements to Syria's oil-rich area are next task

By Robert Burns
Associated Press

WASHINGTON — Pivoting from the dramatic killing of the Islamic State's leader, the Pentagon is increasing U.S. efforts to protect Syria's oil fields from the extremist group as well as from Syria itself and the country's Russian allies. It's a new high-stakes mission even as American troops are withdrawn from other parts of the country.

Defense Secretary Mark Esper said the military's oil field mission also will ensure income for Syrian Kurds who are counted on by Washington to continue guarding Islamic State prisoners and helping American forces combat remnants of the group — even as President Donald Trump continues to insist all U.S. troops will come home.

"We don't want to be a policeman in this case," Trump said Monday, referring to America's role after Turkey's incursion in Syria.

In the face of Turkey's early October warning that it would invade and create a "safe zone" on the Syrian side of its border, Trump ordered U.S. forces to step aside, effectively abandoning a Kurdish militia that had partnered with U.S. troops.

Esper and Gen. Mark Milley, chairman of the Joint Chiefs of Staff, spoke at a Pentagon news conference to chair the successful mission by U.S. special operations forces Saturday that ended with IS leader Abu Bakr al-Baghdadi blowing himself up. Esper called al-Baghdadi's death a "devastating blow" to an organization that already had lost its hold on a wide swath of territory in Syria and Iraq.

Milley said the U.S. had disposed of al-Baghdadi's remains "appropriately" and in line with the laws of armed conflict. He also said U.S. forces retrieved unspecified intelligence information from the site, which he described as a place in northwestern Syria where the IS leader had been "staying on a consistent basis."

A U.S. military dog that was slightly injured in the raid has recovered and is back at work, Milley said.

Esper hinted at uncertainty ahead in Syria, even though the Islamic State has lost its inspirational leader, with the Syrian government exploiting support from Russia and Iran.

"The security situation in Syria remains complex," Esper said.

A big part of that complexity is the raggedness of the battlefield since Trump earlier this month ordered a full U.S. troop withdrawal from positions along the Turkish border in northeastern Syria. Even as those troops leave, other U.S. forces are shifting to the oil-producing region of eastern Syria, east of the Euphrates River.

Trump recently has proposed hiring an American oil company to begin repairing Syria's oil infrastructure, which has been devastated by years of war.

Esper said last week that a "mechanized" force would reinforce U.S. positions in the oil region, assuming a force equipped with tanks or Bradley Fighting Vehicles. On Monday he provided no details about the makeup of the force.

He referred to "multiple state and nonstate" forces vying for control of Syrian territory and resources, including the oil. He said that while the main U.S. military mission is to ensure the "enduring defeat" of the Islamic State, that now will include denying oil income for the group.

"The United States will retain control of oil fields in northeast Syria," Esper said, adding that at the height of al-Baghdadi's rule, those oil fields provided the bulk of the group's income.

Esper's remarks echoed Trump's focus on the oil. But whose oil is it?

"We're keeping the oil," Trump said during a speech to police chiefs in Chicago. "Remember that, I've always said that. Keep the oil. We want to keep the oil — $45 million a month — keep the oil. We've secured the oil."

Esper emphasized that the purpose of securing Syria's oil region is to deny income to the Islamic State. But a reporter asked whether the mission includes preventing Russian and Syrian government forces from entering that area.

"The short answer is yes, it presently does," Esper said, "because in that case we want to make sure" the Syrian Kurdish-led militia known as the Syrian Democratic Forces "does have access to the resources in order to guard the prisons and arm their own troops, in order to assist us with the defeat-ISIS mission."

Esper said he has seen no sign of Syrian or Russian forces challenging U.S. control of the oil fields.

In recent days, however, U.S. officials detected what they considered to be a significant massing of Syrian and Russian forces on the western side of the Euphrates River near Deir el-Zour, a U.S. official said Monday.

Russian officials were contacted by phone, and the U.S. was given assurances that the staged forces would not move east, the official said, speaking on condition of anonymity to discuss a sensitive issue.

ISIS victims warn fight not over

By Sylvie Corbet
Associated Press

PARIS — Survivors and families of the victims of the deadly 2015 extremist attacks around Paris say they are relieved at the death of Islamic State leader Abu Bakr al-Baghdadi but warn that the fight against extremism is not over.

Al-Baghdadi was responsible for directing and inspiring terror attacks across continents and in the heart of Europe.

His killing by U.S. forces, which was announced Sunday, leaves the Islamic State without an obvious leader, a major setback for an organization that in March was forced by American troops and Kurdish forces out of the last part of its self-declared "caliphate," which once spanned a swath of Iraq and Syria.

The Islamic State group claimed responsibility for the Nov. 13, 2015, attacks on Paris cafes, the national stadium and the Bataclan concert hall that left 130 people dead.

FR ANCOIS MORI/AP 2015

Georges Salines, left, whose daughter Lola died in 2015, and lawyer Jean Reinhart leave the Elysee Palace in Paris.

Georges Salinas, whose daughter Lola died at the Bataclan, said he welcomed the announcement of the IS leader's death with a "sense of satisfaction."

"We have no regrets," he said. "It would have been even better if al-Baghdadi could have been captured and sent to trial. That was probably impossible, we know that for a long time."

Salinas stressed that the fight against terrorism is a long-term battle that needs to continue.

Philippe Duperron, president of Zenith15, a victims' association, lost his son Thomas in the Bataclan attack.

"It's not bad news," he said of the IS leader's slaying but added for ethical reasons his group would not express joy at any death.

"One major player of the Islamic State group's actions has disappeared," he said.

A trial of suspects in the Nov. 13, 2015, Paris attacks is expected to begin in 2021. Fourteen people have been charged in the case.

NOTICE OF AVAILABILITY OF AN ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT FOR THE IMPLEMENTATION OF ENERGY CONSERVATION MEASURES AT NORFOLK NAVAL SHIPYARD IN PORTSMOUTH, VIRGINIA

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The EA considered multiple potential impacts, including environmental impacts on: air quality, water resources, cultural resources, visual resources, biological resources, infrastructure, & hazardous materials & wastes. Based on information gathered during the preparation of the EA, the U.S. Navy has determined that the proposed action will not have a significant effect on the human environment.

The EA & FONSI may be obtained from: Norfolk Naval Shipyard, 1600 Pennock Street, Building 1500, 6th Floor, Portsmouth, VA 23709 (ATTN: Energy Conservation Measures EA / Ms. M. Stuck, PRM4, IEPD). A limited number of documents are available to fill single copy requests.

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Affidavit of Publication

State of Illinois
County of Cook

Order Number: 6488002
Purchase Order:

This day, John Farina appeared before me and, after being duly sworn, made oath that:

1) He/she is affidavit clerk of The Virginian Pilot, a newspaper published by Virginian-Pilot Media Companies, LLC in the city of Norfolk, Portsmouth, Chesapeake, Suffolk and Virginia Beach and the Commonwealth of Virginia and in the state of North Carolina.
2) That the advertisement hereto annexed has been published in said newspaper on the dates stated below.
3) The advertisement has been produced on the websites classifieds.pilotonline.com and https://www.publicnoticevirginia.com

Published on: **Oct 27, 2019; Oct 28, 2019; Oct 29, 2019.**

John Farina

Subscribed and sworn to before me in my city and state on the day and year aforesaid this 29th day of Oct, 2019.

My commission expires 03/20/23

Elizabeth Bolin

Signature of Notary

OFFICIAL SEAL
ELIZABETH BOLIN
NOTARY PUBLIC - STATE OF ILLINOIS
MY COMMISSION EXPIRES 3/20/2023

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APPENDIX B:
National Historic Preservation Act
Section 106 Documentation

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COMMONWEALTH of VIRGINIA

Department of Historic Resources

Matt Strickler
Secretary of Natural Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
www.dhr.virginia.gov

MEMORANDUM

DATE: 22 May 2019 **DHR File #** 2019-3561

TO: Ms Rebecca Peeling
NAVY

FROM: Marc E. Holma, Architectural Historian (804) 482-6090
Office of Review and Compliance

PROJECT: Implementation of Energy Conservation Measures
Norfolk Naval Shipyard

_X_ This project will have an effect on historic resources. Based on the information provided, the effect will not be adverse.

____ This project will have an adverse effect on historic properties. Further consultation with DHR is needed under Section 106 of the NHPA.

____ Additional information is needed before we will be able to determine the effect of the project on historic resources. **Please see below.**

____ No further identification efforts are warranted. No historic properties will be affected by the project. Should unidentified historic properties be discovered during implementation of the project, please notify DHR.

____ We have previously reviewed this project. Attached is a copy of our correspondence.

____ Other (Please see comments below)

COMMENTS:

Administrative Services
10 Courthouse Ave.
Petersburg, VA 23803
Tel: (804) 862-6408
Fax: (804) 862-6196

Eastern Region Office
2801 Kensington Avenue
Richmond, VA 23221
Tel: (804) 367-2323
Fax: (804) 367-2391

Western Region Office
962 Kime Lane
Salem, VA 24153
Tel: (540) 387-5443
Fax: (540) 387-5446

Northern Region Office
5357 Main Street
PO Box 519
Stephens City, VA 22655
Tel: (540) 868-7029
Fax: (540) 868-7033

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Virginia Department Of Historic Resources
Electronic Project Information Exchange (ePIX)

Norfolk Naval Shipyard
Request For Section 106 Review

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Print

Create New Application

This electronic form is to be used for the submission of new projects only. If you wish to submit addtional information in support of an existing project, please contact the reviewer assigned to that project.

Before using this form, please understand that the information being requested is important to our review. Incomplete information may lead to delays in the review of your project. Please read all questions carefully and respond as completely as possible. For security purposes, *your ePIX session will timeout after 20 minutes of inactivity* and any unsaved changes will be discarded. To ensure that no information is lost, we recommend saving your application after the completion of each section. If you have questions concerning the completion of this application, please contact DHR staff at ePIX@dhr.virginia.gov.

SECTION I. CONTACT INFORMATION

Submitted By
Mrs. Rebecca Peeling
9324 Virginia Ave
Norfolk, VA 23511
757-334-1180
rebecca.peeling@navy.mil

Please indicate what your role in this project is:

Applicant RoleEmployee of federal or state agency responsible for compliance

If Other, please specify

SECTION II. GENERAL PROJECT INFORMATION

Project NameImplementation of Energy Conservation Measures at Norfolk Naval Shipyard

Agency Project Number

Associated DHR File Number

Project Street Address

Independent Cities and/or Counties (multiple cities/counties are allowed):

City/County Name
Portsmouth (Ind. City)

Town/Locality, if applicable

Agency Involvement

Please select one of the following options as they relate to the project you are submitting:

◉ My project involves a federal or state agency and requires review by DHR under the National Historic Preservation Act (Sections 106 or 110), Virginia Environmental Impact Reports Act or other provision of state or federal law.

○ I am seeking Technical Assistance from DHR in the assessment of potential impacts of my project on historic resources (e.g. federal or state involvement anticipated, initial project scoping, local government proffer or ordinance).

It is important that you know the nature of the federal or state involvement in your project. Please note that there are a number of state-managed programs that are federally funded (e.g. Transportation Enhancement Grants, some recreational trail grant programs, and many DHCD programs). Understanding the involvement of the agency and the program is helpful for our review.

In some cases there are multiple agencies involved in a project. In these cases, there is generally a "lead" agency. In order to help clarify this, please list the agencies in the order of their involvement in the project. If, for example, there are two agencies providing funding, please provide the contact information for the primary source of federal funding first.

Please select the agency, relationship, contact and click the **Select** button:

Agency	Relationship
Navy	Federally Funded

SECTION III. PROJECT DESCRIPTION and CURRENT AND PAST LAND USE

We need to know as much as possible about the project that is being proposed as well as the current condition of the property. In the fields below, you will be required to provide descriptions that are no longer than 2000 characters. Additional and more detailed information can be uploaded and attached at the end of the application.

Overview and existing conditions

Please provide a general description of the project.

Project Description

In 2009, the Secretary of the Navy set goals to improve energy security, increase energy independence, and reduce the reliance on petroleum by increasing the use of alternative energy. In 2016, the Department of Defense reissued guidance for energy resiliency on military installations, approving the use of private sector partnerships as a crucial tool for financing energy and infrastructure improvements. The Navy proposes to implement energy conservation measures (ECMs) at the Norfolk Naval Shipyard through an award of an Energy Savings Performance Contract (ESPC) to an energy service company. The ECMs would provide for infrastructure updates and improve energy efficiency of the NNSY mainsite and Scott Center, Southgate, and St. Juliens Creek annexes to maintain reliable operations in support of mission requirements. Under the Proposed Undertaking, ECMs would be applied within the NNSY mainsite, Scott Center, Southgate and St. Julien's Creek annexes. The ESPC would consist of the following ECMs: construction of a combined heat and power (CHP) plant and installation of a micro-grid control system (MCS) and battery energy storage system (BESS); construction of a new industrial wastewater treatment plant (IWTP) to replace the existing IWTP at the same location; and a series of heating, ventilation, and air conditioning system (HVAC) upgrades and lighting improvements. The purpose of the project is to reduce the Navy's energy use and increase energy security, strategic flexibility, and resource availability in support of mission requirements. The proposed undertaking is needed to assist the Navy in meeting federal policies, goals, and standards concerning energy security through enhancing resiliency and finding efficiencies by reducing energy and water use. Please refer to the attached detailed Scope of Work for detailed information about the proposed undertaking. The Navy believes the proposed action will have no adverse effect on historic resources.

How many acres does the project encompass?

Number of Acres1133

Please describe the current condition and/or land use of the project area (e.g. paved parking lot, plowed field).

The location proposed for the CHP plant (ECM 10) is currently an asphalt-paved vehicular parking lot on NNSY mainsite, adjacent to the Gosport Ring-Tie Substation. Between the parking lot and the Elizabeth River to the east is an abandoned creosote factory and an undeveloped parcel for open storage of piles of sand and gravel. The east and south viewsheds also include the reinforced concrete piers of the elevated South Norfolk Jordan Bridge. Visible beyond the bridge to the south is an industrial area characterized by open storage yards and parking lots. To the north of the site, within the southern part of the Industrial Area Precinct of the Norfolk Naval Shipyard Historic District (DHR ID# 124-0054/124-0185), is a large vehicular parking lot and industrial buildings and cranes. The Wheelabrator fuel plant is to the west of the site. The large, industrial plant includes two tall brick stacks, a concrete silo, and an overhead conveyor that extends across Dale Street. The location proposed for the IWTP (ECM 16) is in a densely developed area in the northern part of the Industrial Area Precinct of the NNSY Historic District. Stevens Street borders the south side of the existing IWTP (Building 1485), which is surrounded by several waste tanks and basins and other structures and equipment for treatment plant operations. Three mid- to late-20th century industrial buildings of similar size as the IWTP are to the north (Buildings 1512, 1557, and 1580; DHR ID# 124-0185-0380, -0418, and -0451). A vehicular parking lot and a three-story industrial building (Building 174; DHR ID# 124-0185-0051) are adjacent to the northeast. Larger shop buildings dating to the early and mid-twentieth century (Building 163; DHR ID# 124-0185-0047; Building 195; DHR ID# 124-0185-0058; and Building 234; DHR ID# 0124-0185-0067)
Current Conditionare located to the south and west of the site.

Please describe any previous modifications to the property, including ground disturbance.

The proposed project area has been heavily altered over time through
Previous Modificationsconstruction and installation of utilities.

Work involving buildings or structures

Does the project involve the rehabilitation, addition to, alteration, or demolition of any building structure over 50 years of age?

Buildings Over 50 YearsYes

If yes, please describe the work that is proposed in detail. Current photographs of affected building or structure, architectural or engineering drawings, project specifications and maps may be uploaded at the end of the application.

DetailsPlease see attached detailed project description.

Work involving ground disturbance

Is there any ground-disturbance that is part of this project?

Ground DisturbanceYes

If yes, describe the nature and horizontal extent of ground-disturbing activities, including construction, demolition, and other proposed disturbance. Plans, engineering drawings, and maps may be uploaded on the next page at the end of the application.

Extent of Activities

The natural gas line would run from an existing transport line on Military Highway (U.S. Route 13) north through St. Julien's Creek Annex along existing utility easements to the site of the proposed CHP plant, approximately 3.2 miles. The line would be directionally bored with depths approximately 36–48 inches below surface. Steam distribution line would run from the CHP plant to connect to existing main steam lines along Dale Street. The steam line would be installed on five overhead supports. Each pipe support consists of a 30-foot tall, 2.5 inch x 2.5 inch reinforced concrete column supported by a 10 inch x 10 inch x 30 inch concrete pile cap installed 8.5 feet below surface on approximately 50-foot deep precast concrete piles. The IWTP building would be built on concrete pile and slab foundation. It would include 119, 14 inch x 14 inch, precast, prestressed concrete piles installed 90 feet deep. The CHP building would be built on 330, 12 inch x 12 inch concrete piles installed 96 feet deep, with the floor elevation built to the 500-year flood elevation or 4 feet above the 100-year flood elevation, whichever is higher.

What is the depth of the ground disturbance? If there are several components to the project, such as new building, utility trenches, and parking facilities, provide the approximate depth of each component.

Depth

Natural gas line 36-48 inches below the surface Steam line support piles 8.5 feet IWPT support piles 90 feet CHP building support piles 96 feet

How large is the area where ground-disturbing activities will take place? (in acres)

Area Size0.94

SECTION IV. AREA OF POTENTIAL EFFECT (APE)

The Area of Potential Effects (APE) is defined as the geographic area or areas within which a project may directly or indirectly cause changes in the character or use of historic properties, if they exist. It is not necessary for an historic property to be present in order to define an APE.

An example of a direct effect is the demolition of an historic building while an indirect effect would be the alteration of an historic setting resulting from the construction of a communications tower or

the introduction of noise as the result of the construction of factory. An area such as the footprint of a proposed building is obviously within the APE, but you must also consider visual effects on the property and the limits of all ground-disturbing activity. So, any project may have two APEs - one for direct effects and one for indirect effects.

Please see our guidance on Defining Your APE for more detailed information on defining direct and indirect APEs. If you are using DHR's Data Sharing System, you should indicate the APE on the DSS map. For instructions on how to do this, consult the DSS general use guidelines.

Please provide a brief summary of and justification for the APE and upload your APE map at the end of the application. The written boundary description must match the submitted APE map.

The Navy determined that the APE for this proposed project is the boundaries of the NNSY mainsite and Scott Center, Southgate, and St. Juliens Creek annexes. Due to potential visual effects from the construction of the CHP and BESS, the APE also includes an area south and east of NNSY mainsite, as shown in Attachment 1. For archaeological resources, potential effects would be limited to the areas within the APE where ground disturbance would occur. Specifically, these areas are associated with the demolition, excavation, and construction activities for construction of the CHP plant (ECM 10) and IWTP (ECM 16) at NNSY (Attachment 2, Figures 2–4) and for the steam distribution upgrades at St. Julien's Creek Annex (ECM 8.5; replacing the St. Juliens Creek Annex Service Area 2 steam overhead distribution piping and installing new APEconcrete piers for the overhead pipe supports).

SECTION V. CONSULTING PARTIES AND PUBLIC INVOLVEMENT

The views of the public, Indian tribes and other consulting parties (e.g. local governments, local historical societies, affected property owners, etc.) that may have an interest in historic properties that may be affected by the project are essential to informed decision-making. In some cases, the public involvement necessary for other environmental reviews such as that under the National Environmental Policy Act (NEPA) may be sufficient for the Section 106 process, but the manner in which the public is involved must reflect the nature and complexity of the proposed project and its effects on historic resources.

What consulting parties have you identified that have an interest in this project? Please describe your previous and future efforts to involve consulting parties.

Consulting PartiesVirginia Department of Historic Resources

Please provide information on any previous or future efforts to involve the public, including public hearings, public notices, and other efforts.

Since the project will be minimally visible outside Navy property, the Navy is preparing to engage the public. This project is being developed as an EA and the Navy is planning to utilize the fact sheet and add in the local newspaper as required under the EA to engage Public Involvementthe public for this project.

SECTION VI. PREVIOUSLY IDENTIFIED HISTORIC RESOURCES

In order for this application to be considered complete, you must determine if there are any known historic resources in the APE and provide this information to us. This step is generally referred to as a DHR Archives Search. More information on how to acquire this information can be found in our guidance document Obtaining an Archives Search.

Has any portion of the APE been previously surveyed for archaeological and/or architectural resources?

SurveysYes

If yes, describe and provide the names of any reports that you are aware of.

Survey Reports Archaeological Resources Overview, Norfolk Naval Shipyard, Portsmouth Virginia, 1997. Phase I Archaeological Testing of Predictive Model, Norfolk Naval Shipyard, Portsmouth Virginia, 2010. Architectural Inventory of the Norfolk Naval Shipyard & Satellite Facilities, 2006 (Update). Archaeological Phase I Survey and Characterization Study at St. Julien's Creek Annex, Chesapeake Virginia, 2010. Architectural Inventory of the Norfolk Naval Shipyard & Satellite Facilities, 2006 (Update).

Are there any previously recorded archaeological sites or architectural resources, including historic districts or battlefields within the APE?

Recorded ResourcesYes

You must upload in Section VIII of this application the Archives Search Map showing previously recorded resources in the APE and the DSS reports for all previously recorded resources.

SECTION VII. ADDITIONAL CONTACTS TO THE APPLICATION

Last Name	First Name	Organization
Peeling	Rebecca	Navy

SECTION VIII. UPLOAD FILES FOR THE APPLICATION

Document Name	File Name	Note
Plans and/or architectural drawings	ESPC NNSY_EPIX Attachment 4_Project Plans and Drawings.pdf	
Cultural Resources Report	ESPC NNSY_EPIX Attachment 3_Hist Properties Info.pdf	
Detailed project description	ESPC NNSY_EPIX Attachment 2_Project Scope.pdf	
Map of APE	ESPC NNSY_ePIX Attachment 1_APE.docx	

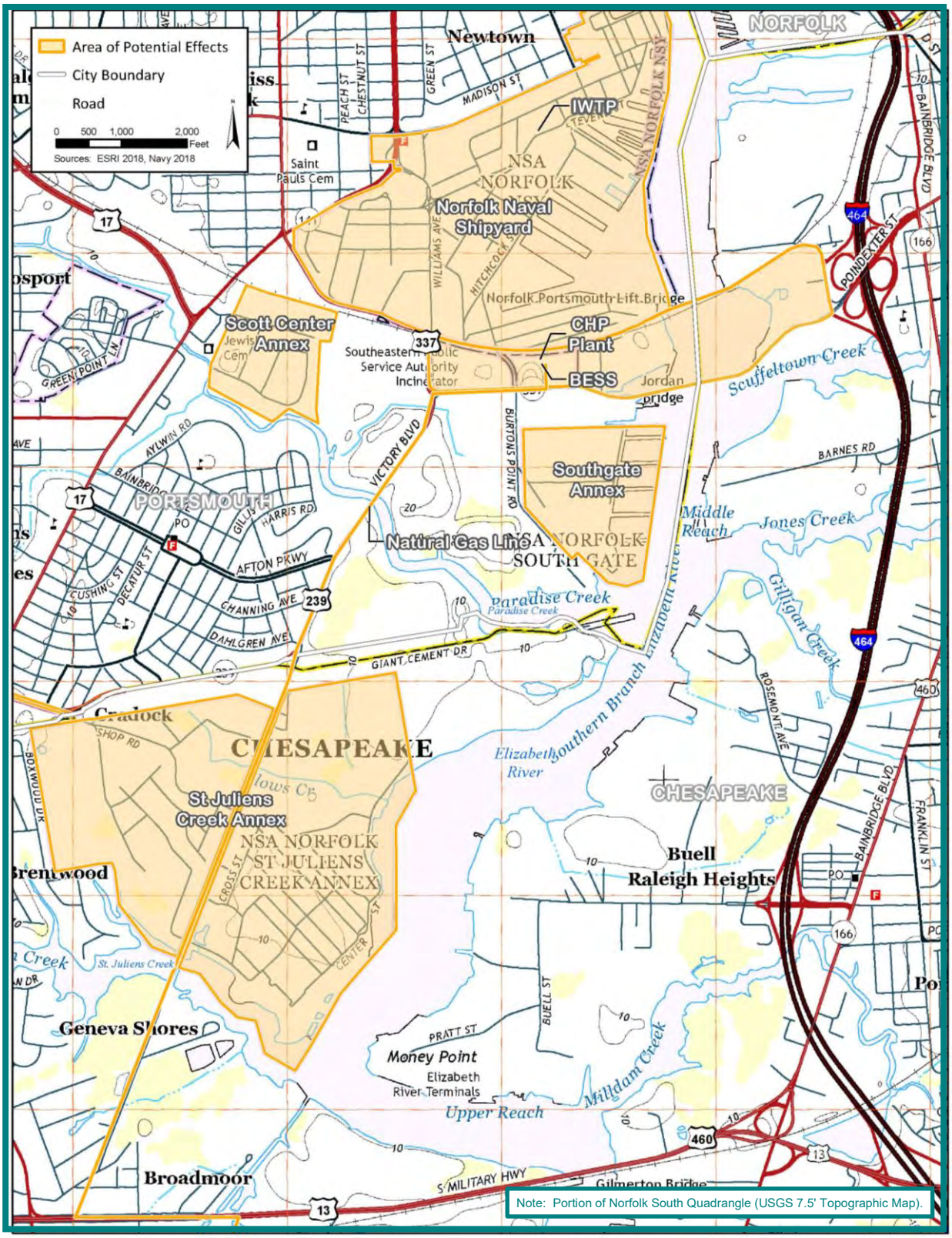

Figure B-1: ePix Attachment 1 - Implementation Of Energy Conservation Measures At NNSY - Area Of Potential Effects (APE) Map

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ePIX Attachment 2 – Implementation Of Energy Conservation Measures At NNSY - Project Scope Of Work (SOW)

PROJECT SCOPE OF WORK:

The Navy proposes to implement energy conservation measures (ECMs) through an award of an Energy Savings Performance Contract (ESPC) that would provide for infrastructure updates and improve energy efficiency of the Norfolk Naval Shipyard (NNSY), and Scott Center, Southgate, and St. Juliens Creek Annexes (Figure 1). Under the proposed undertaking, the Navy would execute an ESPC with an energy service company to construct, install, maintain, and finance the ECMs encompassed by the ESPC; the Navy would own and operate the ECMs.

The Navy would implement several ECMs at NNSY and Scott Center, Southgate, and St. Juliens Creek Annexes as part of the ESPC. ECMs 5, 6, 8, and 14 primarily consist of upgrading and installing efficient energy systems and fixtures within existing facilities to manage and reduce energy consumption. Table 1 provides detailed descriptions of the proposed ECMs, site location, and building number. No ground-disturbing activities, exterior modifications, or new building penetrations would be required to implement ECMs 5.4, 5.5, 6, 8.1, 8.4, or 14. Under ECM 5.3, installation of equipment control modifications to 129 small heating, ventilation, and air conditioning (HVAC) units in 33 buildings at NNSY and Scott Center Annex may require small building penetrations for control wiring conduit for several buildings. ECM 8.5 would involve ground-disturbing activities associated with demolition of the existing Service Area 2 outdoor steam line (6,732 linear feet) at St. Juliens Creek Annex and its replacement with a new steam line, including installation of new concrete piers for the overhead pipe supports. The new steam line would be placed within 5 feet on either side of the existing route.

The remaining ECMs, ECM 10: Energy Security and ECM 16: Industrial Wastewater Treatment Plant (IWTP), are described in detail below because they would involve new construction. Figure 2 shows the proposed locations for ECM 10 and ECM 16. All the ECMs would contribute to the Navy's goals for energy efficiency as defined in Executive Order 13834, *Efficient Federal Operations*.

ECM 10 - Energy Security:

ECM 10 includes constructing a Combined Heat and Power (CHP) plant, installing a Micro-grid Control System (MCS) and Battery Energy Storage System (BESS). A two-story, 30,000 square foot building would be constructed to house the CHP plant. The site of the proposed CHP Plant is on NNSY, adjacent to the Gosport Ring-Tie (Gosport) Substation (Figure 3). The proposed location for ECM 10 is not within the Norfolk Naval Shipyard Historic District (DHR ID# 124-0054/124-0185).

The CHP plant would provide the installation with its own source of steam and electricity. Steam is currently purchased from Wheelabrator, a refuse derived fuel plant adjacent to the NNSY (Figure 2) under a long-term contract that will expire in January 2023. The Navy would continue to purchase steam from Wheelabrator until that contract expires at which time the CHP plant would provide steam to NNSY. Electricity is currently purchased from Dominion Power with the electrical service originating from the Gosport Substation. During an outage, all of NNSY experiences a complete loss of power. The CHP plant would tie into the proposed MCS and BESS (described below) with the systems working together to provide NNSY with consistent, uninterrupted utilities.

The two-story CHP building would be approximately 34.5 feet tall and have a rectangular plan measuring 183 feet x 167 feet. A single, 213.5-foot tall, multiflue steel stack would stand near the northeast corner of the building. The design of the CHP plant will adhere to the NNSY Installation Appearance Plan (2017), and will include exterior corrugated metal wall panels and window frames in anodized bronze. The CHP building would be built on 330, 12 inch x 12 inch concrete piles installed 96 feet deep, with the floor elevation built to the 500-year flood elevation or 4 feet above the 100-year flood elevation, whichever is higher. A 500,000-gallon steel fuel oil tank would be constructed next to the CHP plant. The fuel oil tank would be approximately 40 feet tall.

The proposed 20 megawatt (MW) CHP plant would consist of two dual-fueled (natural gas/fuel oil)-fired turbines with an electrical capacity of 7.6 MW, one 4.3 MW steam-driven turbine, two heat recovery steam generators, three high efficiency, low emissions dual-fueled backup steam boilers, and one 1.5 MW standby diesel generator. The hot exhaust of each turbine would be used in the heat recovery steam generators to produce up to 36,000 pounds per hour of saturated steam to be used onsite.

The location proposed for the CHP plant is currently an asphalt-paved vehicular parking lot on NNSY. The parking lot continues to the east for approximately 450 feet. Between the parking lot and the Elizabeth River is an abandoned creosote factory (DHR ID# 121-5134) and an undeveloped parcel for open storage of piles of sand and gravel. The east viewshed also includes the reinforced concrete piers of the elevated South Norfolk Jordan Bridge, a vehicular bridge that rises to the east across the Elizabeth River, and a small commercial property on the east bank of the Elizabeth River. The west approach of the South Norfolk Jordan Bridge is to the south of the site. Visible beyond the bridge is an industrial area characterized by open storage yards, parking lots, and farther in the distance, a water tower and two white wood pellet storage domes associated with a deep water terminal and a steel truss vertical lift railroad bridge. To the north of the site, within the Industrial Area Precinct of the NNSY Historic District, is a large vehicular parking lot and industrial buildings and cranes. The Wheelabrator fuel plant is west of the site of the CHP plant. The large, industrial plant includes two tall brick stacks, a concrete silo, and an overhead conveyor that extends across Dale Street.

Site preparation at the location for the proposed CHP plant would include the following activities: asphalt/concrete and equipment demolition, grading, boring for the concrete piles, excavation, building construction, construction of the 500,000-gallon fuel oil tank, construction of a secondary containment berm (using concrete and earth) for the fuel oil tank, and paving. Utilities (communications, electrical, natural gas, potable water, and sanitary sewer) would be tied in and routed to the CHP plant.

To meet the high natural gas demand of the proposed CHP plant, a new high-pressure natural gas line would be installed by the local utility company, Columbia Natural Gas. The line would run from an existing transport line on Military Highway (U.S. Route 13) north through St. Juliens Creek Annex along existing utility easements or road right-of-way to the site of the proposed CHP plant, a distance of approximately 3.2 miles (Figure 2). A “tee” off of the line would extend service to the St. Juliens Creek Annex boiler plant. To minimize excavation, the natural gas line would be directionally bored with depths approximately 36–48 inches below surface. Preparation and spotting holes may be excavated for bores along the route. Locations of the holes are not yet identified, but would be subject to topographic conditions. The only portions of the natural gas line that would be aboveground would be at the tie-in point within Columbia Natural Gas’ existing easement near Military Highway and at the end point, adjacent to the north side of the CHP plant.

A new steam distribution line would be run from the CHP plant to connect to existing main steam lines along Dale Street as shown in Figure 3. The steam line would be installed on five overhead supports that would be identical in appearance to existing steam line supports on NNSY. Each pipe support consists of a 30-foot tall, 2.5 inch x 2.5 inch reinforced concrete column supported by a 10 inch x 10 inch x 30 inch concrete pile cap installed 8.5 feet below surface on approximately 50-foot deep precast concrete piles.

ECM 10 also includes installing a MCS controller and interface dashboard. The MCS would be inside the CHP plant and control the distribution of electrical power throughout NNSY. In the event of a grid or outside power source failure, this system would have the capability to decouple the CHP plant from the Gosport Substation. The MCS would automatically "island NNSY" by shedding non-critical loads to provide balanced electrical distribution to the most critical loads. The majority of work establishing the MCS would focus on upgrades to the panels housing the existing protective relaying at each substation throughout the installation.

ECM 10 would also install a new 5 MW lithium-ion battery energy storage system (BESS). Lithium-ion battery systems are versatile in their ability to provide high power with very fast response times. The BESS would be located in a 140-foot by 15-foot outdoor area located immediately adjacent to the south side of the proposed CHP plant (refer to Figure 3). The BESS would be integrated into the electrical distribution system to provide "bridge power" for the few minutes it would take to bring the existing eight 1.6 MW stand-by emergency diesel generators online. Building 1580, located approximately 0.75 mile north of the proposed CHP plant (and adjacent to the proposed IWTP; see Figure 4), houses the emergency generators with a total capacity of 12.8 MW. These generators would be refurbished with new controls and switchgear. The existing electrical distribution system main and secondary feeders and aging breakers and relays would be upgraded as needed throughout NNSY.

Site preparation for the proposed BESS would include surface clearing, installation of underground electrical conduit, concrete foundations, compacted gravel, BESS equipment, and electrical interconnection to the base's electrical distribution system.

ECM 16 - Industrial Wastewater Treatment Plant (IWTP):

ECM 16 would construct a new IWTP to replace the existing IWTP (Building 1485) at NNSY. Figure 4 shows the location of the existing and proposed IWTP.

The existing IWTP (Building 1485 and four component structures directly to the east and south), Building 1250, two aboveground diesel fuel tanks (1586 and 1587), and an 8,000-gallon underground spill containment tank would be demolished to make room for the new IWTP. The new IWTP would be constructed in their place, and new aboveground diesel fuel tanks would be provided closer to the emergency generators in Building 1580. Building 1485 (DHR ID# 124-0180-0363), constructed in 1977, is a noncontributing resource to the Industrial Area Precinct within the Norfolk Naval Shipyard Historic District. Building 1250 and the diesel fuel tanks are also noncontributing resources.

The IWTP would be constructed in phases so that the existing plant could remain in operation while the new plant is being built. The Treatment Plant Building (highlighted in light red on Figure 4) would be constructed first and would be put into operational service prior to construction of the next two building sections. The treatment plant would be enclosed in a 7,475 square foot metal frame building with insulated metal panel siding. Once the new treatment

plant is operational, the existing treatment plant would be demolished and an operations building and storage building would be constructed.

The proposed Operations Building (highlighted in light green) is 5,460 square feet and two stories. Functions that occur in the Operations Building, such as the plant control room, would be in temporary trailers while the Operations Building is being constructed. The Storage Building (highlighted in light blue) is a 4,225 square foot building, and would be used to store dry bulk chemicals for water treatment.

The IWTP would have a rectangular footprint measuring 262 feet long and 71 feet wide. The two-story building would be topped by a low-pitched gable roof that reaches 28 feet at the eaves and 37 feet at the peak. The design of the CHP plant will follow the NNSY Installation Appearance Plan (2017), and will include insulated metal panel exterior siding. The IWTP building would be built on concrete pile and slab foundation. It would include 119, 14 inch x 14 inch, precast, prestressed concrete piles installed 90 feet deep.

The location proposed for the IWTP is in a densely developed area in the northern part of the Industrial Area Precinct of the Norfolk Naval Shipyard. Stevens Street borders the south side of the existing IWTP (Building 1485), which is a one-story, steel-frame building clad in metal panels with a gable roof of standing seam metal. It is surrounded by several waste tanks and basins and other structures and equipment for treatment plant operations. Three industrial buildings of similar size as the IWTP are to the north (Buildings 1512, 1557, and 1580; DHR ID# 124-0185-0380, -0418, and -0451). Each one of these mid- to late-twentieth century buildings is a one-story, metal-clad building with a shed roof. A vehicular parking lot and a three-story industrial building (Building 174; DHR ID# 124-0185-0051) are adjacent to the northeast. Larger shop buildings dating to the early and mid-twentieth century are located south and west of the proposed location of the new IWTP. They include a two-and-one-half-story, gable-roof concrete and masonry building with a large, flat-roof, concrete addition (Building 195; DHR ID# 124-0185-0058); an immense seven-story, steel-frame building with stucco walls, flat roof, and bands of steel industrial sash windows (Building 234; DHR ID# 0124-0185-0067); and an enormous four-story, steel-frame building with metal cladding, large expanses of industrial sash windows, and a low-pitched shed roof pierced by a series of linear monitors (Building 163; DHR ID# 124-0185-0047).

The existing IWTP is currently located inside the controlled industrial area (CIA) fence. However, because the work performed at the IWTP is not information-sensitive, the plant could be located outside of the CIA. The fence line is proposed to be relocated to the south of the IWTP as shown in Figure 4. The new fence would include a personnel gate to provide direct access from the IWTP to the CIA.

Currently, the IWTP treats approximately 1.9 million gallons of wastewater per year. The proposed IWTP would include two parallel batch treatment trains, each with a capacity of 1.35 million gallons per year, which could treat two different wastewater streams simultaneously using different treatment chemicals and methods. The wastewater treatment process would remain essentially the same; the same treatment chemicals, batch processing, residence times, and test methods would continue to be used. The permitted contaminant discharge would not change, but would remain the same as the existing plant. Treated effluent would be discharged to the Southern Branch of the Elizabeth River or stored in a 10,000-gallon non-potable tank included with the proposed IWTP. Various tanks and totes are currently used to transfer wastewater from the generation source to the IWTP via transport trucks. After being emptied, the tanks and totes are currently washed using municipal water. However, under this proposal,

the non-potable water would be used to wash down the wastewater transport tanks and totes, eliminating the need to purchase roughly 300,000 gallons of municipal water annually for this purpose (Ameresco 2018).

In addition to the demolition/removal of the existing IWTP building and component structures, two diesel fuel tanks, and underground spill containment tank, site preparation would include surface clearing, installation of underground utilities, connections to existing piping, electrical, and instrumentation systems, and paving.

REFERENCES CITED:

Ameresco. 2018. Norfolk Naval Shipyard Investment Grade Audit.

Ameresco. 2016. Norfolk Naval Shipyard Preliminary Assessment.

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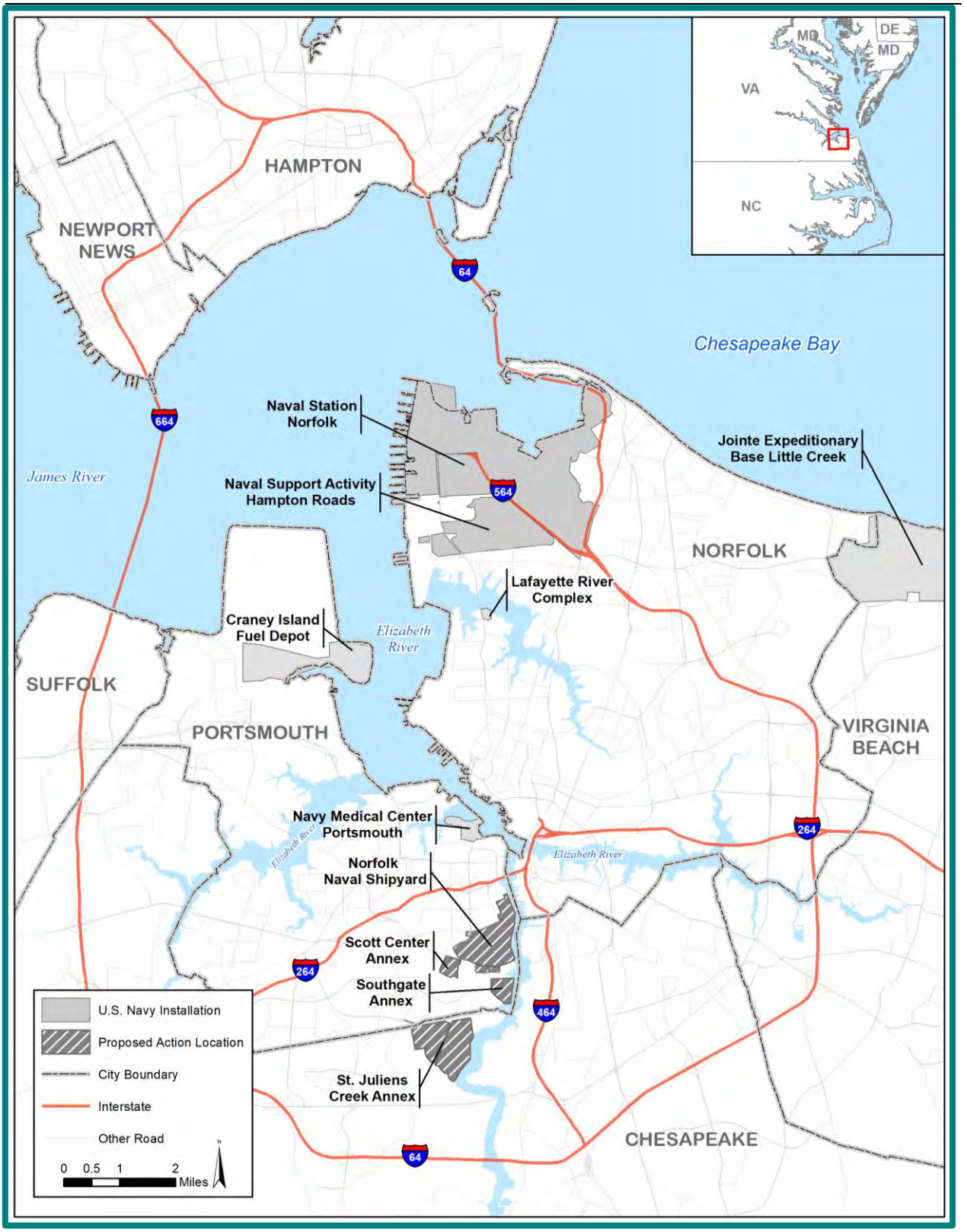

Figure B-1: Location Of Proposed Undertaking & Navy Installations In The Hampton Roads Region

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Table B-1: ECM Project Descriptions, Building, Or Site Locations

ECM Number	ECM Title	ECM Measure	Description Of Activity	Building Number Or Site Location
5	**HVAC System Upgrades**	5.3	Install equipment control modifications to 129 small HVAC units in 32 buildings at NNSY Mainsite, & Scott Center.	9, 15, 31, 32, 33, 59, 62, 65, 73, 74, 163, 171, 174, 202, 234, 235, 236, 261, 269, 276, 277, 297, 310, 491, 492, 510, 1487, 1503, 1504, 1505, 1560, & 1575
		5.4	Install variable frequency drives on 45 HVAC air handling units in 12 buildings at NNSY Mainsite, & Scott Center.	9, 19, 29, 33, 73, 268, 276, 310, 510, 1461, 1505, & 1575
		5.5	Install 63 HVAC Variable Speed Hydronic pumps (42 chilled water systems, 20 heated hot water, &1 dual temperature pump) in 23 buildings at NNSY Mainsite, & Scott Center.	9, 13, 15, 29, 31, 32, 33, 51, 73, 174, 234, 261, 276, 277, 310, 510, 1461, 1505, 1530, 1560, 1579, 1585, & 1590
6	**Lighting Improvements**	6	Replace interior linear fluorescent lamps with LED tube lamps, ballasts, & install occupancy sensors to 94 buildings at NNSY Mainsite, & 98 buildings at Scott Center, Southgate, & St. Juliens Creek annexes.	NNSY Mainsite - 9, 11, 13, 14, 15, 16, 17, 19, 22, 23, 29, 31, 32, 33, 37, 39, 42, 51, 59, 60, 61, 62, 65, 73, 74, 163, 171,172, 174, 184, 202, 220, 234, 235, 236, 260, 261, 262, 268, 269, 270, 273, 274, 276, 277, 278, 279, 280, 297, 298, 299, 300, 310, 369, 383, 403, 405, 414, 458, 463, 464, 491, 492, 508, 510, 522, 524, 599, 1460, 1484, 1485, 1499, 1500, 1502, 1503, 1504, 1505, 1526, 1527, 1528, 1531, 1539, 1575, 1578, 1585, 1590, 1593, 1594, 1618, 1624, 1639, M1, &M22 Scott Center, Southgate, St. Juliens Creek annexes - 1, 3, 6, 11, 12, 14, 16, 17, 18, 38, 40, 43, 59, 60, 61, 63, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 83, 84, 86, 87, 88, 146, 164, 165, 166, 167, 168, 169 ,170 ,171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 212, 262, 263, 268, 271, 283, 307, 318, 319 321, 322, 323, 383, 400, 401, 510, 511, 548, 744, 1437, 1461, 1465, 1487, 1509, 1510, 1530, 1538, 1556, 1559, 1560, 1579, 1583, 1584,1636, 1743, 1480, 1489, 1624, 7Y, 8Y, &M5
8	**Steam Distribution Upgrades**	8.1	Repair insulation on steam pipe & fittings in 74 buildings; use insulating jackets at NNSY Mainsite & Scott Center Annex	9, 11, 13, 14, 15, 16, 17, 19, 22, 23, 29, 30, 31, 32, 33, 37, 39, 42, 51, 59, 60, 61, 62, 65, 73, 74, 163, 171, 172, 174, 184, 202, 234, 234A, 235, 236, 260, 261, 262, 268, 269, 270, 271, 273, 274, 276, 277, 278, 279, 280, 297, 298, 299, 300, 306, 310, 369, 403, 414, 463, 464, 510, 522, 599, 1329, 1436, 1484, 1485, 1499, 1500, 1504, 1526, 1531, 1539, 1560, 1575, 1579, 1585, 1590, & M-22

ECM Number	ECM Title	ECM Measure	Description Of Activity	Building Number Or Site Location
		8.4	Replace failed steam traps in 73 buildings at NNSY Mainsite, Scott Center, & St. Juliens Creek annexes	NNSY Mainside, & Scott Center - 11, 13, 15, 16, 19, 22, 31, 32, 37, 39, 42, 51, 59, 61, 73, 74, 163, 171, 172, 174, 184, 202, 234, 234A, 235, 236, 260, 268, 269, 270, 274, 276, 279, 280, 297, 298, 299, 300, 310, 369, 414, 463, 464, 510, 522, 599, 1329, 1484, 1499, 1500, 1531, 1560, 1575, 1579, 1585, & M-22 St. Juliens Creek Annex - 2, 6, 16, 17, 18, 43, 75, 80, 165, 166, 167, 171, 172, 185, 283, 1556, & M-5
		8.5	Repair steam leaks by fixing valves or replacing faulty sections of pipe at NNSY Mainsite; replace Service Area 2 steam overhead distribution piping & install new concrete piers for the overhead pipe supports for a new steam line.	NNSY Mainsite & St. Juliens Creek Annex
10	**Energy Security**	10.1	Construct a Combined Heat & Power (CHP) plant at NNSY; includes installation of a new high-pressure natural gas line; provide dual fuel burner and controls to new, Navy-installed, boiler in Building 283 at St. Julien's.	Site of CHP - vehicular parking lot on south side of NNSY; Natural Gas Pipeline - Military Hwy (U.S. Route 13) North along area roads through St. Juliens Creek Annex to site of the proposed CHP Plant, with short extension to St. Juliens Creek Annex boiler plant.
		10.2	Install a Micro-grid Control System (MCS) & Battery Energy Storage System (BESS) next to proposed CHP plant at NNSY.	Vehicular parking lot on south side of NNSY.
14	**Transformer Modernization**	14	Replace 282 dry-type transformers with highefficiency models in 33 buildings throughout NNSY Mainsite.	22, 37, 61, 62, 163, 171, 172, 174, 184, 202, 234, 235, 236, 268, 270, 277, 297, 298, 369, 464, 508, 510, 1460, 1485,1499, 1500, 1502, 1505, 1557, 1593, 1594, 22A, &C222
16	**Industrial Wastewater Treatment Plant**	16	Construct a new Industrial Wastewater Treatment Plant (IWTP) at NNSY to replace the existing IWTP, at the same location.	1250, 1485, 1586, & 1587.

Sources: Ameresco, 2016, & 2018

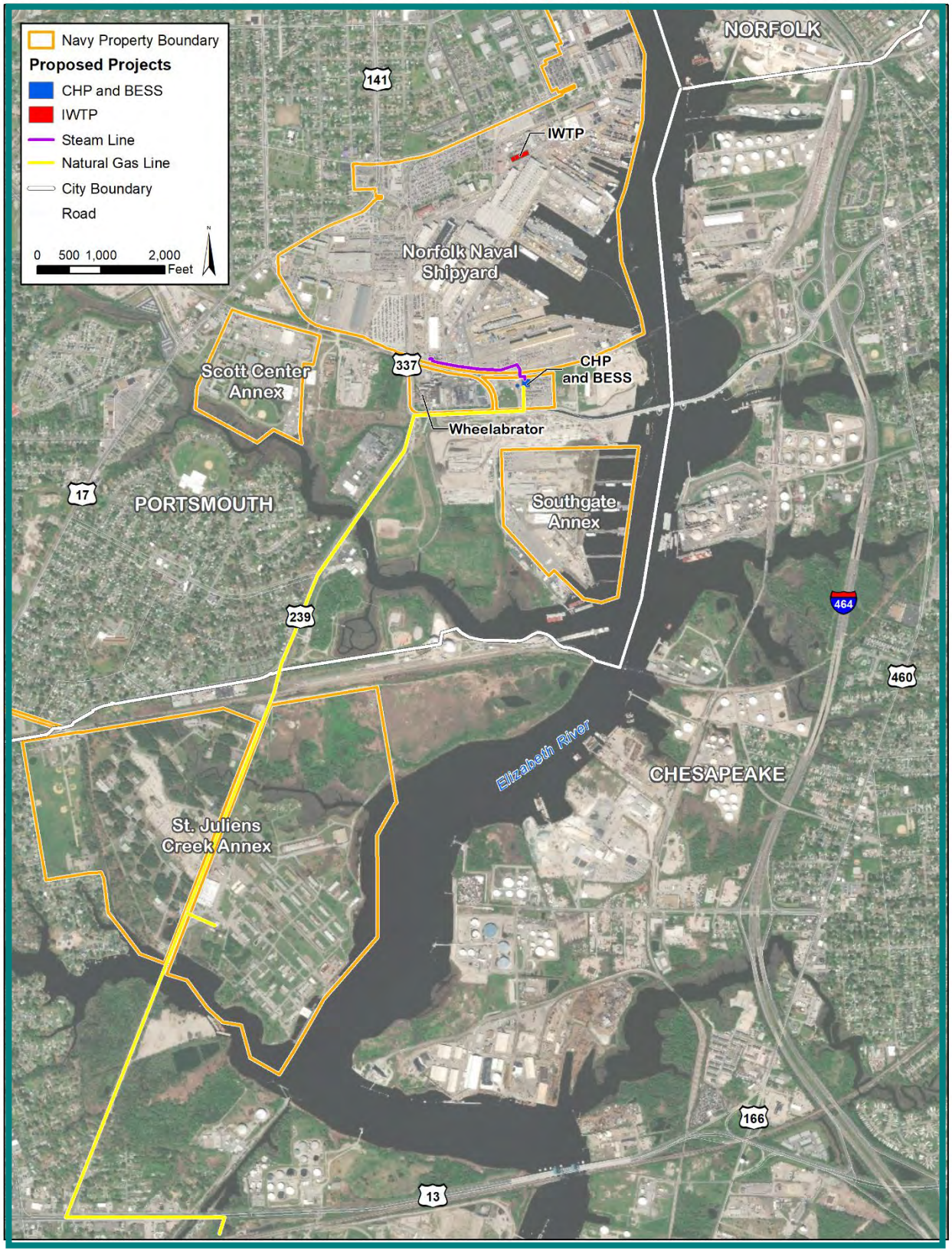

Figure B-2: Locations Proposed For ECM 10, & ECM 16

Figure B-3: Location Of The Proposed CHP Plant

Figure B-4: Location Of Existing, & Proposed IWTP

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ePIX Attachment 3 - Implementation Of Energy Conservation Measures At NNSY - Information On Historic Properties

IDENTIFICATION OF HISTORIC PROPERTIES

Archaeological Resources

A review of previous archaeological investigations at NNSY indicates that no archaeological sites have been identified within the proposed locations for either ECM 10: Energy Security (CHP Plant/MCS/BESS) or ECM 16: IWTP. An archaeological resources overview and sensitivity model was completed for NNSY in 1997 by R. Christopher Goodwin and Associates, and revised by SEARCH in 2010. The proposed location for ECM 10 is within Archaeological Study Zone 4. R. Christopher Goodwin and Associates (1997) and SEARCH (2010b) identified Archaeological Study Zone 4 as containing approximately 6 to 8 feet of fill and having low potential for archaeological resources. There are no identified archaeological sites within Archaeological Study Zone 4. The proposed location for ECM 16 is in Archaeological Study Zone 3, an area identified by R. Christopher Goodwin and Associates (1997) and SEARCH (2010b) as having low archaeological potential.

Three archaeological investigations have been conducted at St. Juliens Creek Annex. They include two separate Phase I investigations, one in 1992 and another in 1997, and a Phase I investigation and characterization study in 2010 (Espy, Huston and Associates 1992; R. Christopher Goodwin and Associates 1997; SEARCH 2010a). The 1992 survey identified three archaeological sites: 44PM0048, 44PM0049, and 44PM0050 (refer to the Virginia Cultural Resource Information System [V-CRIS] maps at the end of this attachment). DHR concurred that these three sites are potentially eligible for inclusion in the National Register of Historic Places (NRHP) and need Phase II evaluation (Commander, Navy Region Mid-Atlantic 2012). The 2010 survey identified four sites (44CS0288, 44CS0289, 44CS0290, and 44CS0291); DHR concurred all four sites are not eligible. In addition, the 2010 Phase I investigation and characterization study determined the remainder of St. Juliens Creek Annex was disturbed and retained no potential to contain intact, significant archaeological resources (Commander, Navy Region Mid-Atlantic 2012).

A search of V-CRIS revealed that two Phase I cultural resources surveys have been conducted in an area along Elm Avenue that overlaps with an approximately 1,600-foot long portion of the proposed natural gas line to the CHP plant as part of ECM 10 (refer to the V-CRIS maps at the end of this attachment). A 2008 archaeological and historical survey of the Atlantic Wood Industries, Inc., Superfund site (Gougeon 2008) and a 2009 Phase I cultural resources survey for the South Norfolk Jordan Bridge Project (Levinthal et al. 2009) did not identify any archaeological sites along Elm Avenue. No archaeological surveys have been conducted along any other portion of the proposed natural gas line under ECM 10, which consists of existing utility easements and road right-of-way.

Architectural Resources

V-CRIS, the Regional Integrated Cultural Resources Management Plan for Naval Installations in Hampton Roads, Virginia (Commander, Navy Region Mid-Atlantic 2012), and the National Park Service's online NRHP database were reviewed to identify previously documented architectural resources within the APE. Table 2 lists these resources and their respective NRHP status, and Table 3 lists the previous architectural surveys that have been conducted within the APE. The identified resources are located within or adjacent to NNSY and within St. Juliens Creek Annex; no NRHP-eligible architectural resources have been identified at Scott Center or Southgate annexes (Commander, Navy Region Mid-Atlantic 2012). Copies of the V-CRIS maps illustrating the locations of previously surveyed architectural resources are at the end of this attachment.

Numerous buildings included in the proposed ECMs are located within the Norfolk Naval Shipyard Historic District. The Norfolk Naval Shipyard Historic District was determined to be eligible for listing in the NRHP in 2004 (Commander, Navy Region Mid-Atlantic 2004). The NNSY Historic District is significant for its association with the development of the U.S. Navy from the nineteenth through the mid-twentieth centuries, particularly during the Civil War and World Wars I and II, and for representing the evolution of Naval transportation and the shipbuilding industry during this period. The District is also significant for embodying distinctive characteristics of Naval architectural and engineering. The period of significance is 1827–1945. The District contains 68 contributing resources (Commander, Navy Region Mid-Atlantic 2004, 2012).

The location of ECM 16: IWTP is within the Industrial Area Precinct of the Norfolk Naval Shipyard Historic District (DHR ID# 124-0054/124-0185). The Industrial Area Precinct is a large area within the historic district, encompassing the active, industrial waterfront of NNSY. The precinct includes 26 contributing resources dating from World War I to World War II. Contributing structures include drydocks, repair piers, dock cranes, and the portal crane rail system. Contributing buildings primarily consist of metal-clad shops of immense scale.

The buildings and structures that would be demolished for construction of the new IWTP are all noncontributing resources to the Industrial Area Precinct. These resources include Building 1485 (DHR ID# 124-0185-0363; built in 1977); Building 1250 (construction date unknown), and the aboveground diesel fuel tanks (1586 and 1587). Construction of the IWTP would have potential indirect visual effects to three contributing resources within the Industrial Area Precinct, which are located adjacent to the south of the site (refer to Attachment 2, Figure 4). These three resources include Building 163, Shipfitters Shop (DHR ID# 124-0185-0047; constructed in 1918); Building 195, Galvanizing Shop (DHR ID# 124-0185-0058; 1920); and Building 234, Sheet Metal Shop (DHR ID# 124-0185-0067; 1937). The other buildings adjacent to the IWTP site are all noncontributing resources. They include the following buildings: Building 174, Utility Building (DHR ID# 124-0185-0051; 1921); Building 1326, Equipment Repair Shop (not inventoried; 1948); Building 1512, Hazardous Materials Transfer Building (DHR ID# 124-0185-0380; 1951); Building 1557, IWTP Pump Station (DHR ID# 124-0185-0418; 1990); and Building 1580, Diesel Generator Facility (DHR ID# 124-0185-0451; 1999).

EFFECTS ASSESSMENT

An assessment of the potential effects from implementing ECM 10 and ECM 16 are discussed below, followed by a discussion of the potential effects from implementing ECMs 5, 6, 8, and 14, which are addressed collectively. The section concludes with the Navy's overall finding of effect for the Proposed Undertaking.

ECM 10: Energy Security

No previously identified archaeological sites are within areas of the Area of Potential Effects (APE) where ground-disturbing activities for construction of the CHP Plant and associated structures (i.e., BESS, fuel oil tank), overhead steam line, and natural gas line would occur. Further, the ground-disturbing activities are within or adjacent to areas of NNSY and St. Juliens Creek Annex that have been identified as having low to no archaeological potential. The route of the proposed natural gas line follows existing utility (power line) easement or road right-of way. The natural gas line would be directionally bored to minimize ground disturbance. Ground disturbance would be limited to preparation and spotting holes that may be excavated for bores along the route. Given the prior ground disturbance associated with installation of the power line and construction of the roads in the APE, the project area for the natural gas line has little to no potential for unidentified intact archaeological resources to be present. Therefore, the Navy anticipates that implementation of ECM 10 would have no effect on significant archaeological resources.

No architectural resources would be demolished for construction of the CHP Plant, as the proposed site is a vehicular parking lot.

The Navy assessed the potential visual effects from construction of the CHP Plant on NRHP-listed and eligible architectural resources within the APE (refer to Table 2). The Navy determined that the project site is within the viewshed of two historic properties: the NNSY Historic District (DHR ID# 124-0054/124-0185) and the Norfolk and Portsmouth Belt Line Railroad Bridge (DHR ID# 131-5383).

Table B-2: Previously Identified Architectural Resources Within The APE

DHR No.	Property Name	Description	NRHP Status	Associated Architectural Survey(s)
124-0016; 124-0185-0211–0213	Quarters A, B, & C (Buildings 700, 701, 702)	Three 2.5-story, brick, Federal-style dwellings built in 1837	Individually Listed 1974	Kuranda et al. 1998; Sadler & Whitehead Architects 2003
124-0029; 124-0185-0271	Dry Dock No. 1 (Building 911)	Constructed in 1827 of large blocks of granite that are stepped from top to bottom; metal gate (not original) at river end of dock; granite coping blocks & metal stanchions ring the edge of the dock	Individually Listed 1970; National Historic Landmark 1971	Kuranda et al. 1998
124-0054/ 124-0185	Norfolk Naval Shipyard Historic District	Military industrial complex associated with development of the U.S. Navy in the 19th & 20th centuries; distinctive examples of Naval architectural & engineering; 68 contributing resources; 1827–1945 period of significance	Determined eligible (Criteria A & C)	Kuranda et al. 1998; Sadler & Whitehead Architects 2003
124-0185-0160	Electronics Shop (Building 510)	Large-scale, multistory industrial building with smooth-stucco facades, horizontal awning windows, & flat roof; built in 1959	Not evaluated	Dutton + Associates 2011
124-5132	Savannah Creosoting Company	Ca. 1926 two-story, wood-frame vernacular office building & four associated structures	Not eligible	Panamerican Consultants 2008; Circa~ CRM 2009
124-5133	Weeks Marina	One-story, front-gable, wood-frame boathouse from ca. 1920	Not eligible	Frost 2009
124-5134	Abandoned creosote factory	One-story, flat roof brick building from ca. 1920	Not eligible	Levinthal et al. 2009
131-5001	St. Juliens Creek Historic District	Military industrial complex associated with naval munitions production & storage during World War I; primarily one-story, linear masonry or concrete industrial buildings; 45 contributing resources; 1897–1919 period of significance	Determined eligible (Criteria A & C)	R. Christopher Goodwin & Associates 1997
131-5031	J.G. Wilson Corporation (Demolished)	Large, 30-bay brick factory building with central, two-story gabled block flanked by 1.5-story flat-roofed wings; built ca. 1910	Not evaluated	Culhane 1998
131-5033	Jordan Bridge (Demolished)	Five-span Pratt camelback steel truss bridge built 1926–1928 across the Southern Branch, Elizabeth River	Determined eligible (Criterion C)	Frost 2009

DHR No.	Property Name	Description	NRHP Status	Associated Architectural Survey(s)
131-5383	Norfolk & Portsmouth Belt Line Railroad Bridge	Ca. 1920 four-span Pratt camelback steel truss lift bridge spanning Elizabeth River	Determined eligible (Criterion C)	Frost 2009
131-5384	Standard Auto Garage	Ca. 1954 one-story, flat-roofed concrete block building with metal roll-up garage doors & metal-frame windows	Not eligible	Frost 2009

Table B-3: Previous Architectural Surveys Conducted Within The APE

Report ID #	Publication Date	Author(s)/ Firm	Title	Architectural Resources Recorded
N / A	1997	R. Christopher Goodwin & Associates	Architectural Investigations of St. Juliens Creek Annex, 1997	131-5001
N / A	1998	Culhane, Kerri / JMA	N / A	131-5031
N / A	1998	Kuranda, Kathryn M., Hugh B. McAloon, Geoffrey Melhuish, William T. Dod, & Martha Williams / R. Christopher Goodwin & Associates	Architectural Inventory of Norfolk Naval Shipyard & Satellite Activities, Portsmouth, Virginia	124-0016; 124-0029; 124-0054/ 124-0185
N / A	2003	Sadler & Whitehead Architects	Update to Architectural Inventory of Norfolk Naval Shipyard & Satellite Activities, Portsmouth, Virginia	124-0016; 124-0054/ 124-0185
N / A	2009	Frost, Dawn/ Circa~ CRM	Phase I Cultural Resources Survey of the Jordan Bridge Replacement Right-of-Way, Chesapeake & Portsmouth, Virginia	124-5133; 131-5033; 131-5383; 131-5384
N / A	2011	Dutton + Associates	Assessment of Cold War Era Resources (1948–1962) at Navy Hampton Roads Bases	124-0185-0160
CS-091	2009	Levinthal, Aaron, Dawn Frost, Carol Tyrer/ Circa~ CRM	Phase I Cultural Resources Survey of the South Norfolk Jordan Bridge Project, Chesapeake & Portsmouth, Virginia	124-5134
PM-048	2008; 2009	Panamerican Consultants; Circa~ CRM	N / A; Phase II intensive survey for permit application	124-5132

The two-story CHP building would be approximately 34.5 feet tall and have a rectangular plan measuring 183 feet x 167 feet. A single, 213.5-foot tall, multiflue steel stack would stand near the northeast corner of the building, and an approximately 40-foot tall steel fuel oil tank would be constructed on the west side of the building. Although the proposed location of the CHP plant is not within the NNSY Historic District, it is adjacent to the Industrial Area Precinct, and will be designed to be compatible with it. Specifically, the design of the CHP plant will adhere to the NNSY Installation Appearance Plan (2017), and will include exterior corrugated metal wall panels and window frames in anodized bronze. These architectural features would be consistent with those found on the metal-clad shops that predominate the Industrial Area Precinct. Therefore, implementation of ECM 10 would have no adverse effect on the NNSY Historic District.

Because of the open views and level topography from the river to the project site, the CHP Plant, and its 213-foot-tall stack in particular, would be visible from the Norfolk and Portsmouth Belt Line Railroad Bridge, which is eligible for inclusion in the NRHP for its engineering significance. This bridge is a ca. 1920 four-span, steel truss lift bridge spanning the Elizabeth River. The current setting of the bridge is characterized by the dry docks, cranes, and Naval ship traffic at the NNSY and the stacks, storage tanks, and silos associated with the industrial plants, factories, and oil terminals that line both sides of the river in this area. As described above, the design of the CHP Plant would be consistent with the historic character of the NNSY. As the latest in a series of large structures within this continually evolving industrial landscape, the addition of the CHP Plant in this area would not be expected to diminish the bridge's integrity of setting. Consequently, implementation of ECM 10 would have no adverse effect on the Norfolk and Portsmouth Belt Line Railroad Bridge.

ECM 16: IWTP

No previously identified archaeological sites are within areas of the APE where ground-disturbing activities for construction of the IWTP and relocation of the controlled industrial area fence would occur. Further, the ground-disturbing activities is within Archaeological Study Zone 3, an area of NNSY that has been identified as having low archaeological potential. In the event a potential archaeological resource is encountered during excavation, all work in the immediate area would stop and the NNSY Cultural Resources Manager would notify the SHPO and continue consultation. Therefore, it is anticipated that implementation of ECM 16 would have no effect on archaeological resources.

Implementation of ECM 16 would include demolishing Building 1485 and four component structures, Building 1250, two aboveground diesel fuel tanks (1586 and 1587), and an underground spill containment tank. These buildings and structures are noncontributing resources to the NNSY Historic District. Therefore, the demolition would have no adverse effect on the NNSY Historic District.

The overall size, scale, and exterior design of the new IWTP would be compatible with the existing physical context of the Industrial Area Precinct. In particular, the design for the new IWTP consolidates and reconfigures what currently are several disparate components and structures of the existing IWTP within a two-story, steel-frame structure with a rectangular footprint. The exterior of the new IWTP would be designed to follow the NNSY Installation Appearance Plan. For instance, the exterior of the IWTP (walls and gable roof) would be clad in metal, in keeping with the existing aesthetic of the Industrial Area Precinct. The two-story height of the new IWTP would be similar to the associated industrial buildings (Buildings 1512, 1557, and 1580; all noncontributing) adjacent to the north, as well as the three-story utility building (Building 174; noncontributing) to the northeast and the two-and-one-half-story shop (Building 195; contributing) to the west. Similarly, views from the massive four- and seven-story shops to the south (Buildings 163 and 234, respectively; both contributing) to the site of the IWTP would be consistent with current ones. Construction of the IWTP, therefore, would have no adverse effect on the NNSY Historic District.

ECMs 5, 6, 8, and 14

ECMs 5, 6, 8, and 14 would be implemented at NNSY Mainsite, Scott Center, Southgate, and St. Juliens Creek annexes. These ECMs primarily consist of upgrading and installing efficient energy systems and fixtures within existing facilities to manage and reduce energy consumption (refer to Attachment 2, Table 1). No ground-disturbing activities would be required to implement ECMs 5, 6, 8.1, 8.4, or 14; however, for ECM 8.5, ground-disturbing activities would be required to demolish the existing Service Area 2

outdoor steam line (6,732 linear feet) at St. Juliens Creek Annex and install new concrete piers for the overhead pipe supports for a new steam line. The new steam line would be placed within 5 feet on either side of the existing route. A segment of the steam line is adjacent to site 44CS0291; this site was determined to be not eligible for inclusion in the NRHP (Navy, 2012c). The remainder of the steam line is in an area of St. Juliens Creek Annex that has been heavily disturbed and was determined to have no potential to contain intact archaeological resources (Navy, 2012c). Therefore, implementation of ECMs 5, 6, 8, and 14 would have no effect on significant archaeological resources.

No exterior modifications or new building penetrations would be required to implement ECMs 5.4, 5.5, 6, 8, or 14. Under ECM 5.3, installation of equipment control modifications to 129 small heating, ventilation, and air conditioning (HVAC) units in 33 buildings at NNSY mainsite and Scott Center Annex may require small building penetrations for control wiring conduit for several buildings, which may include contributing buildings in the NNSY Historic District. The building penetrations would be near existing penetrations for conduit and located to avoid significant historic features. Therefore, implementation of ECMs 5, 6, 8, and 14 would have no adverse effect on historic architectural resources.

FINDING OF EFFECT

The preceding sections present a detailed analysis of the potential direct and indirect effects of the proposed Implementation of ECMs at NNSY on historic properties identified in the APE. As a result of this assessment, the Proposed Undertaking would have no adverse effect on the NNSY Historic District or the Norfolk and Portsmouth Belt Line Railroad Bridge, and no effect on any other known historic properties within the APE. Therefore, in accordance with 36 CFR §800.5(a)(2), the Navy finds that the proposed Implementation of ECMs at NNSY would result in No Adverse Effect to historic properties.

REFERENCES CITED

Commander, Navy Region Mid-Atlantic. 2012. Regional Integrated Cultural Resources Management Plan for Naval Installations in Hampton Roads, Virginia. Prepared for Commander Navy Region Mid-Atlantic, Norfolk, Virginia, by Sadler and Whitehead Architects, Richmond, Virginia.

Commander, Navy Region Mid-Atlantic. 2004. Architectural Inventory of Norfolk Naval Shipyard and Satellite Activities, Portsmouth, Virginia. Prepared for Naval Facilities Engineering Command, Atlantic Division, Norfolk, Virginia, by R. Christopher Goodwin and Associates, Frederick, Maryland, 1998. Updated for Commander Navy Region Mid-Atlantic, Norfolk, Virginia, by Sadler and Whitehead Architects, Richmond, Virginia, 2004.

Gougeon, Ramie. 2008. An Archaeological and Historical Survey of the Atlantic Wood Industries, Inc., Superfund Site, Portsmouth County, Virginia. Prepared by Panamerican Consultants, Inc.

Espy, Huston and Associates. 1992. A Cultural Resources Survey of the St. Juliens Creek Annex, Norfolk Naval Shipyard, Portsmouth, Virginia. Prepared for Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia. August.

Levinthal, Aaron, Dawn Frost, and Carol Tryer. 2009. Phase I Cultural Resources Survey of the South Norfolk Jordan Bridge Project, Chesapeake and Portsmouth, Virginia. Prepared by Circa-Cultural Resources Management, LLC.

R. Christopher Goodwin and Associates. 1997. Archaeological Resources Overview, Norfolk Naval Shipyard, Portsmouth, Virginia. Prepared for Naval Facilities Engineering Command, Norfolk, Virginia. February.

SEARCH. 2010a. Archaeological Phase I Survey and Characterization Study at St. Juliens Creek Annex, Chesapeake, Virginia. May.

———. 2010b. Phase I Archaeological Testing of Predictive Model, Norfolk Naval Shipyard, Portsmouth, Virginia. August.


Virginia Dept. of Historic Resources
V-CRIS
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Archaeology Phase 1 Survey
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Norfolk Portsmouth Lift Bridge
44PM0068 Jordan Bridge
44PM0075 Scuffletown Creek
44PM0067
Middle Reach
Jones Creek
Paradise Creek
Elm Avenue
Natural Gas Line
(part of ECM 10)
Jewish Cemetery
Cradock School
Cradock Presbyterian Church
Afton Square
Cradock Baptist Church
44CS0234
44CS0288
44PM0050
44CS0290
Title: Natural Gas Line - North Portion
Date: 3/6/2019
DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided 'as-is'. More information is available in the DHR Archives located at DHR's Richmond office.
Notice if AE sites: Locations of archaeological sites may be sensitive the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.

Virginia Dept. of Historic Resources
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Virginia Cultural Resource Information System
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Archaeological Resources
Archaeology Labels
Archaeology Phase 1 Survey
USGS GIS Place names
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Williams Court
Cradock Baptist Church
Hurst School
Afton Park
Cradock
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(part of ECM 10)
Blows Creek
44CS0234
Natural Gas Line to boiler plant
(part of ECM 8.5)
Saint Julian Creek
Money Point
Upper Reach
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44PM0048
44PM0049
44CS0289
44PM0355
Brentwood
Title: Natural Gas Line - St. Julien's Creek Annex
Date: 3/11/2019
DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.
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Virginia Dept. of Historic Resources
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Archaeology Phase 1 Survey
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Blows Creek
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Saint Julian Creek
Money Point
Upper Reach
Natural Gas Line
(part of ECM 10)
Broadmoor
Gilmerton
First Baptist Church
Title: Natural Gas Line - South Portion
Date: 3/6/2019
DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided 'as-is'. More information is available in the DHR Archives located at DHR's Richmond office.
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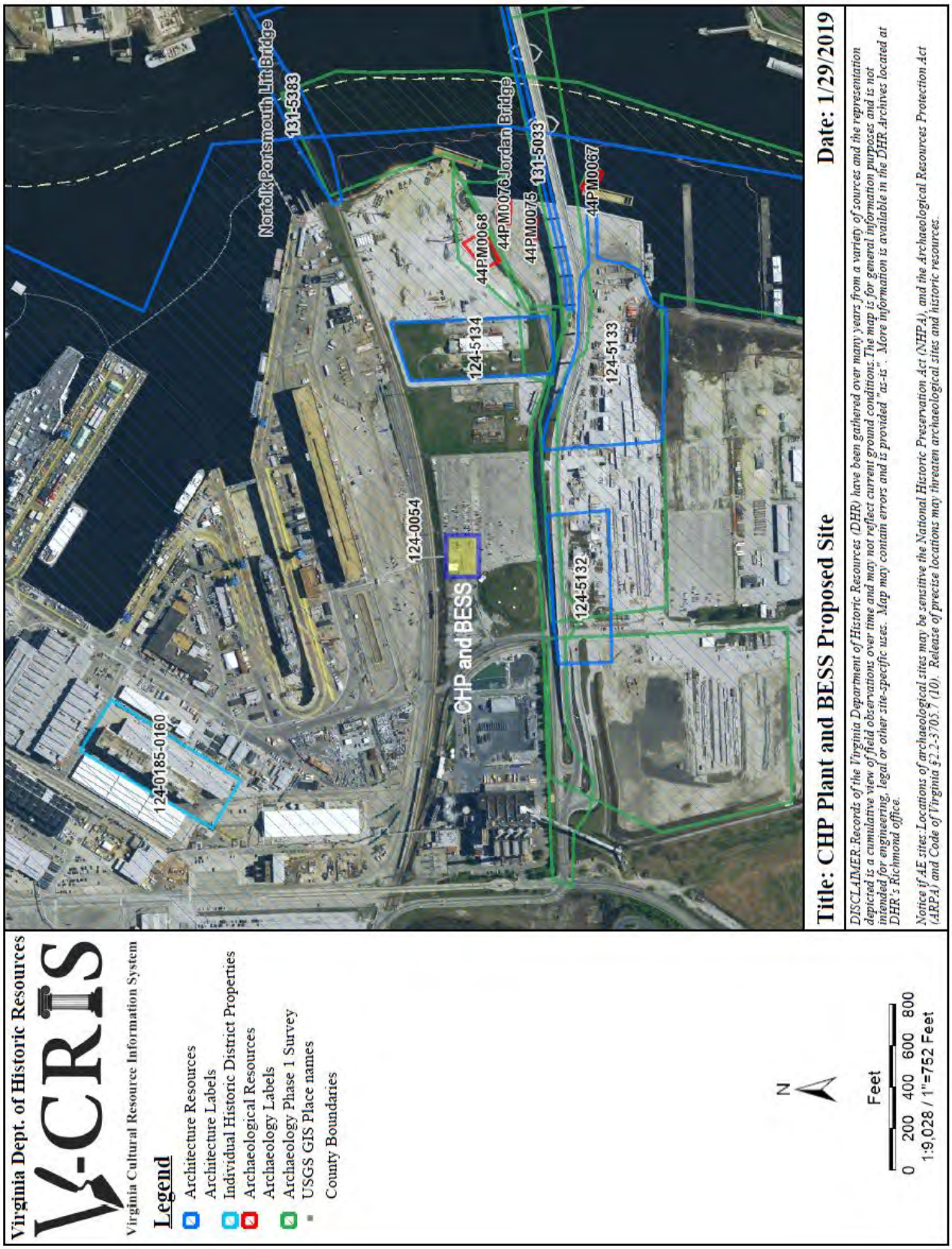
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44PM0076 Jordan Bridge
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124-5134
124-5133
124-5132
124-0054
CHP and BESS
124-0185-0160
Title: CHP Plant and BESS Proposed Site
Date: 1/29/2019
DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.
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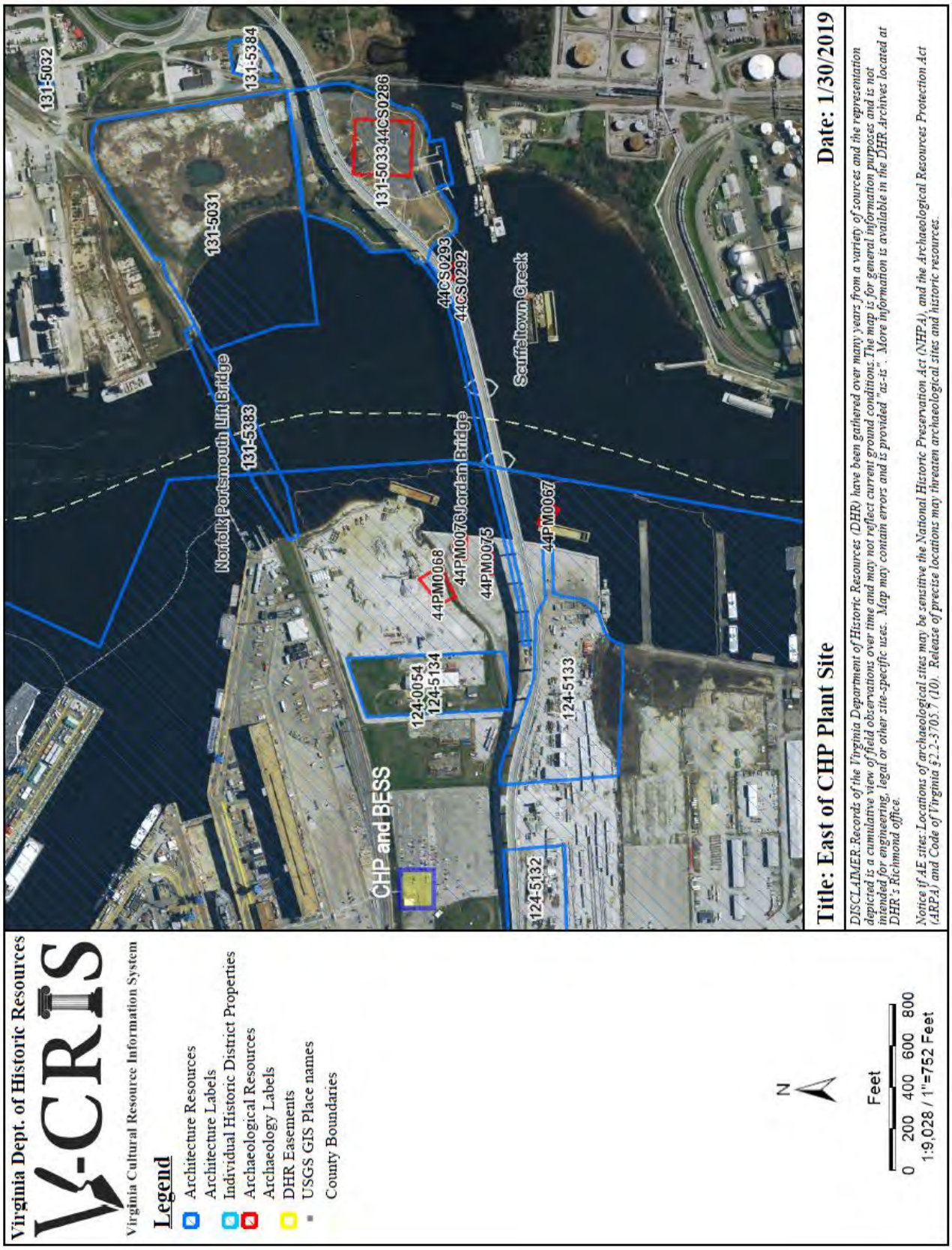
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Archaeology Labels
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Title: East of CHP Plant Site
Date: 1/30/2019
DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.
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131-5032
131-5384
131-5031
131-5033
44CS0286
44CS0293
44CS0292
Norfolk Portsmouth Lift Bridge
131-5383
Jordan Bridge
Scuffletown Creek
44PM0068
44PM0076
44PM0075
44PM0067
124-0054
124-5134
124-5133
124-5132
CHP and BESS

Virginia Dept. of Historic Resources
V-CRIS
Virginia Cultural Resource Information System
Legend
Architecture Resources
Architecture Labels
Individual Historic District Properties
Archaeological Resources
Archaeology Labels
Archaeology Phase 1 Survey
USGS GIS Place names
County Boundaries
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Seventh and Lincoln Shopping Center
Jefferson School
Green Street Baptist Church
44PM0069
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Title: IWTP Proposed Site
Date: 1/29/2019
DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.
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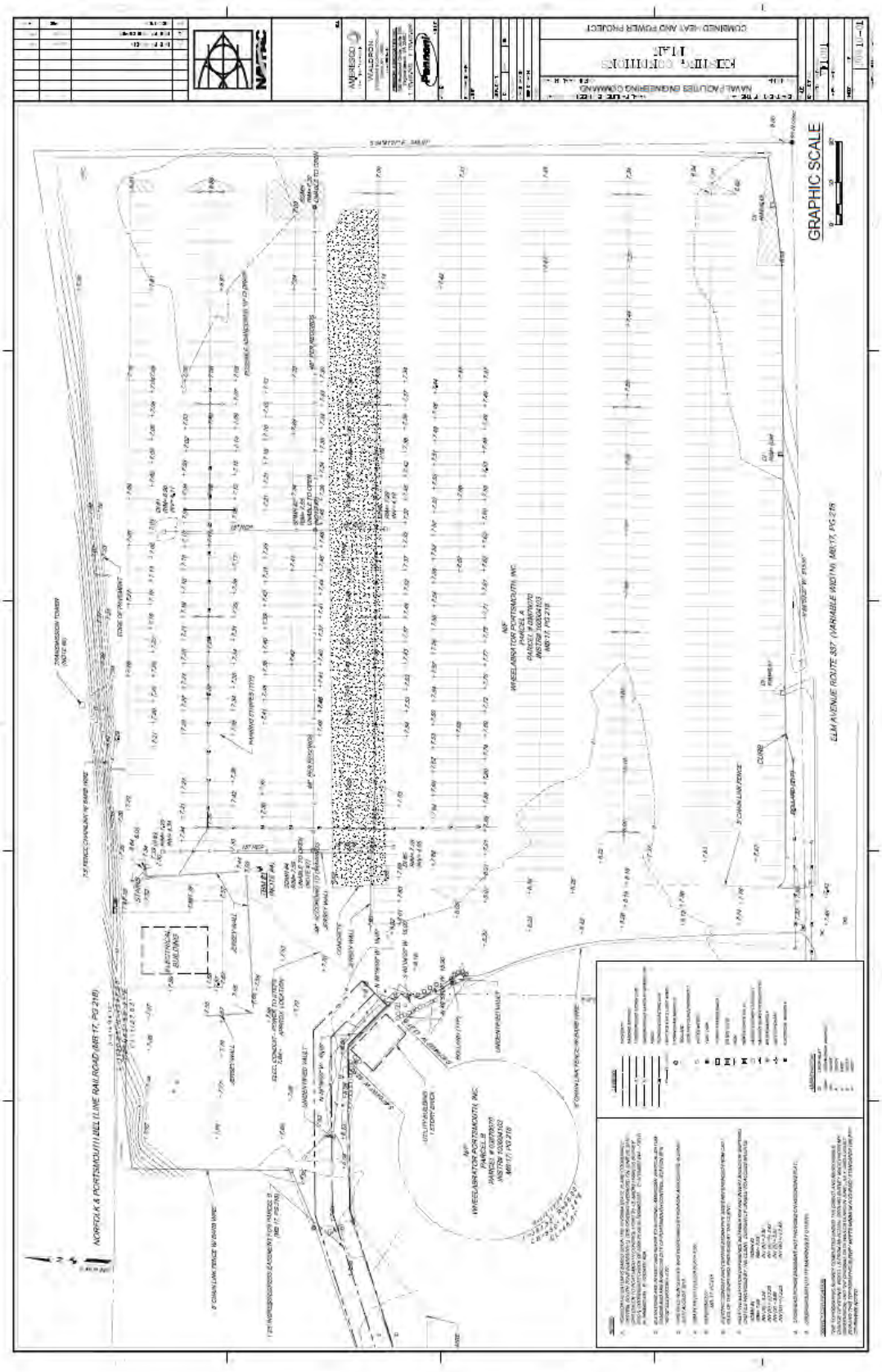
ePIX Attachment 4 - Implementation Of Energy Conservation Measures At NNSY – Project Plans & Drawings

CHP Plant Plans, & Drawings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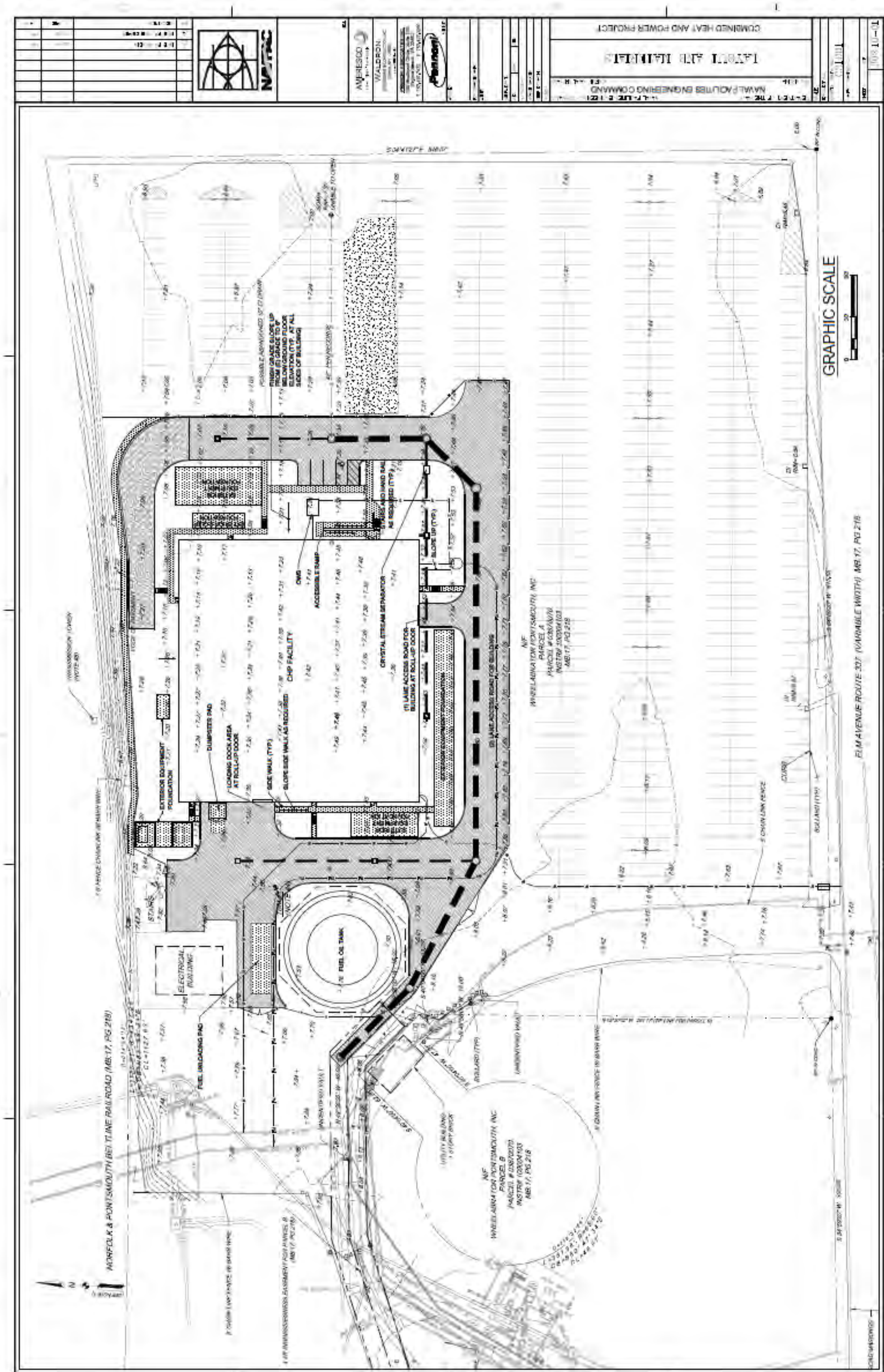
WHEELABRATOR PORTSMOUTH, INC.
WHEELABRATOR PORTSMOUTH INC.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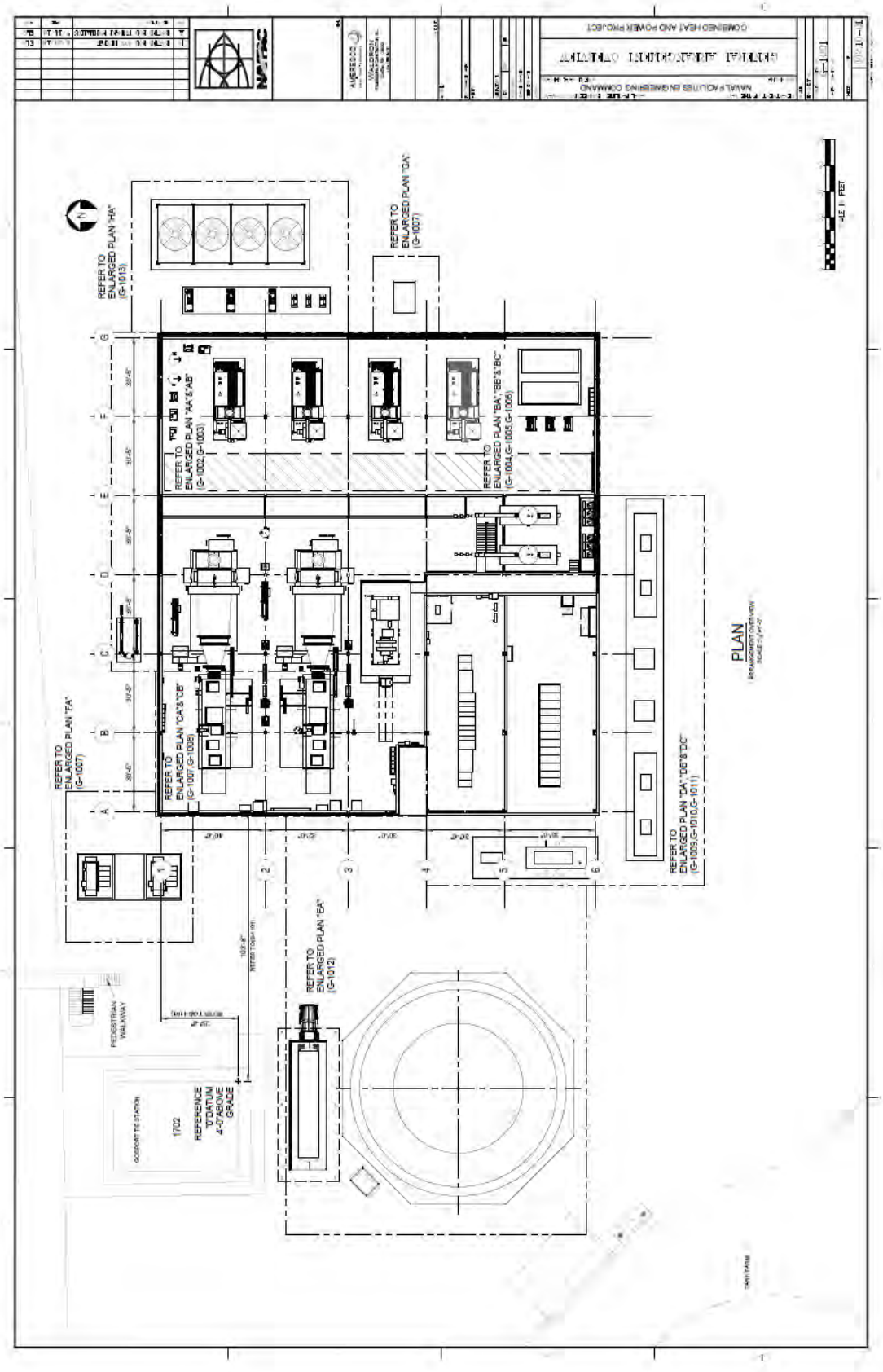
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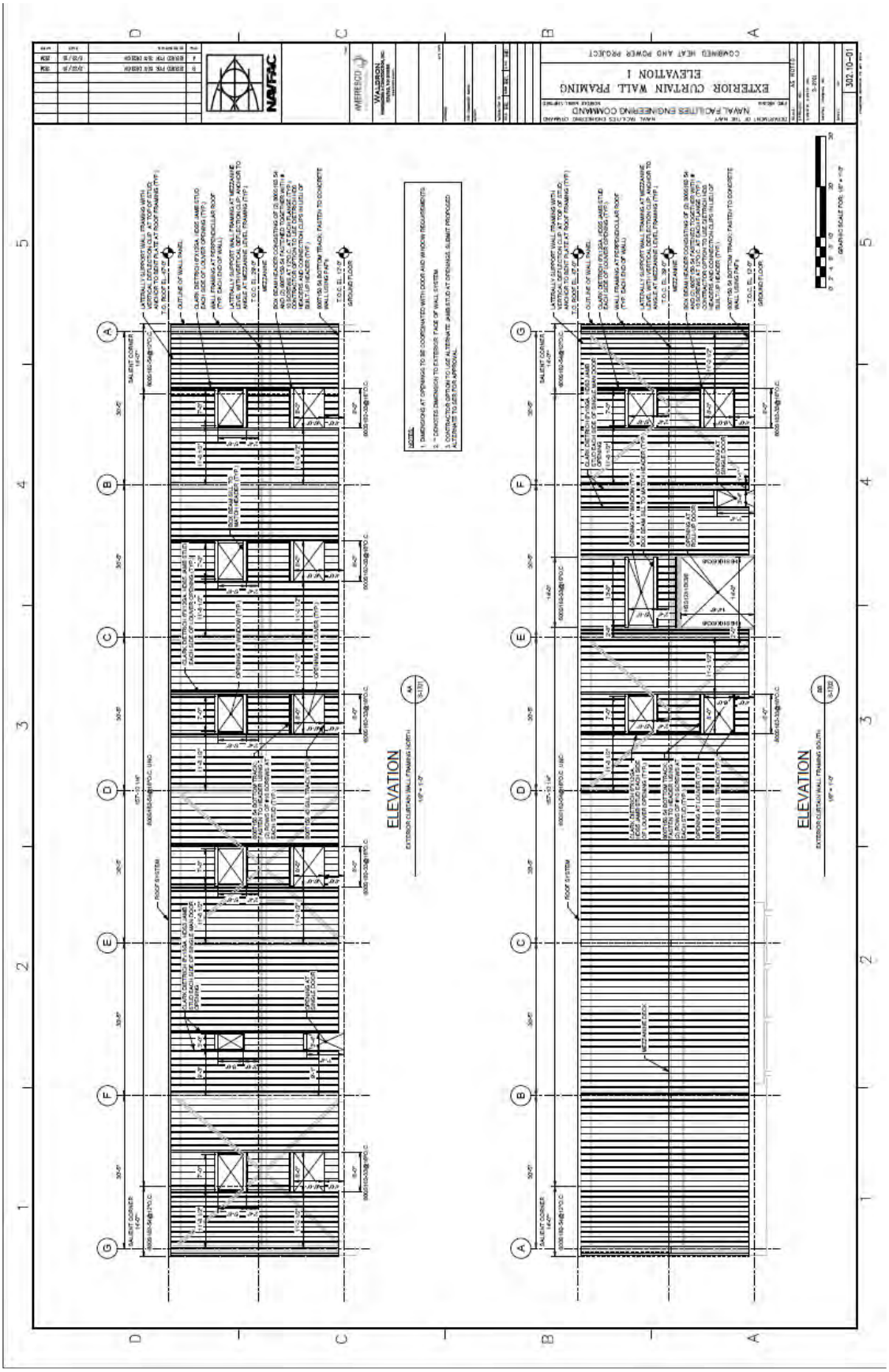
1702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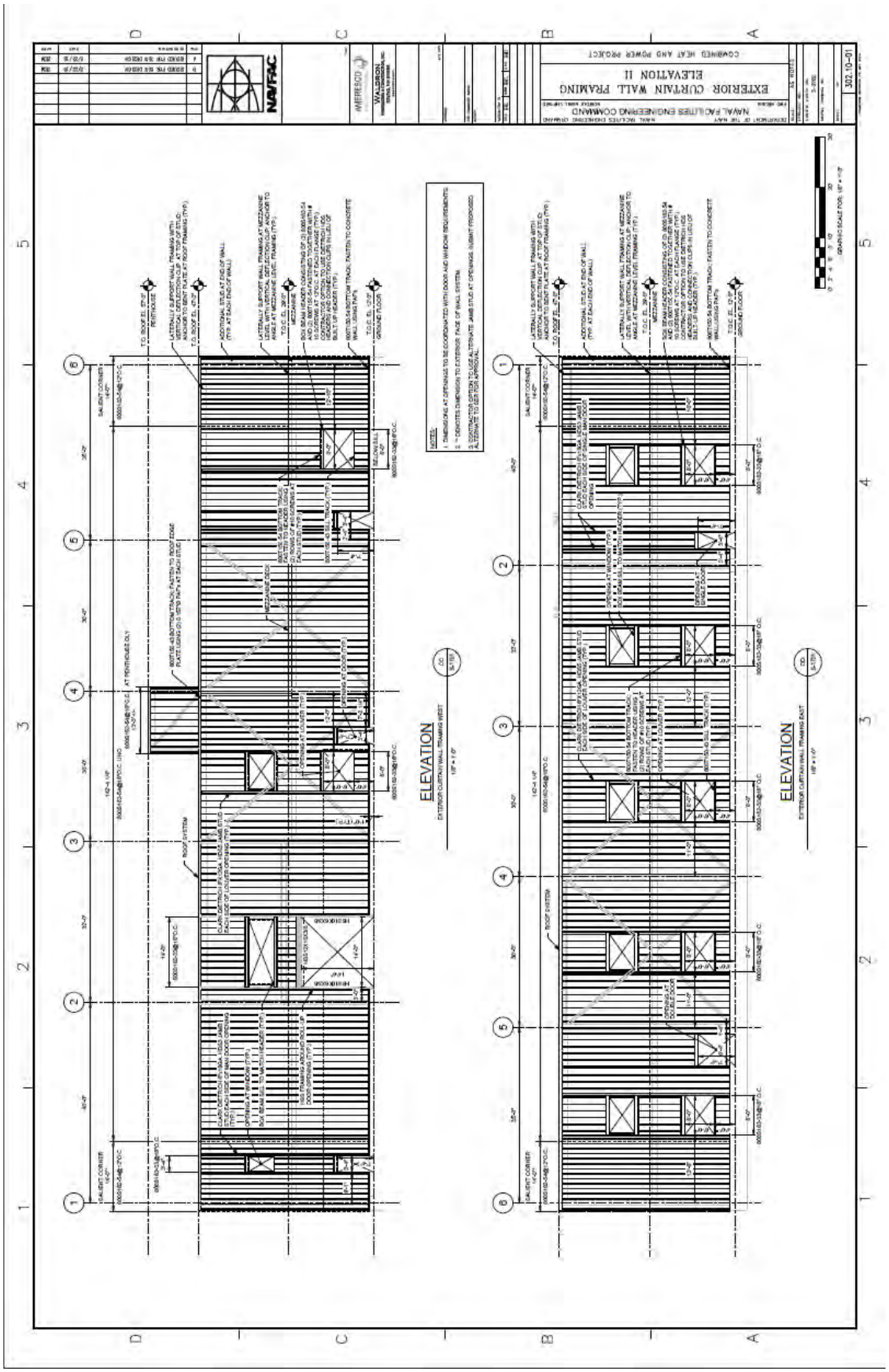
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NAVFAC
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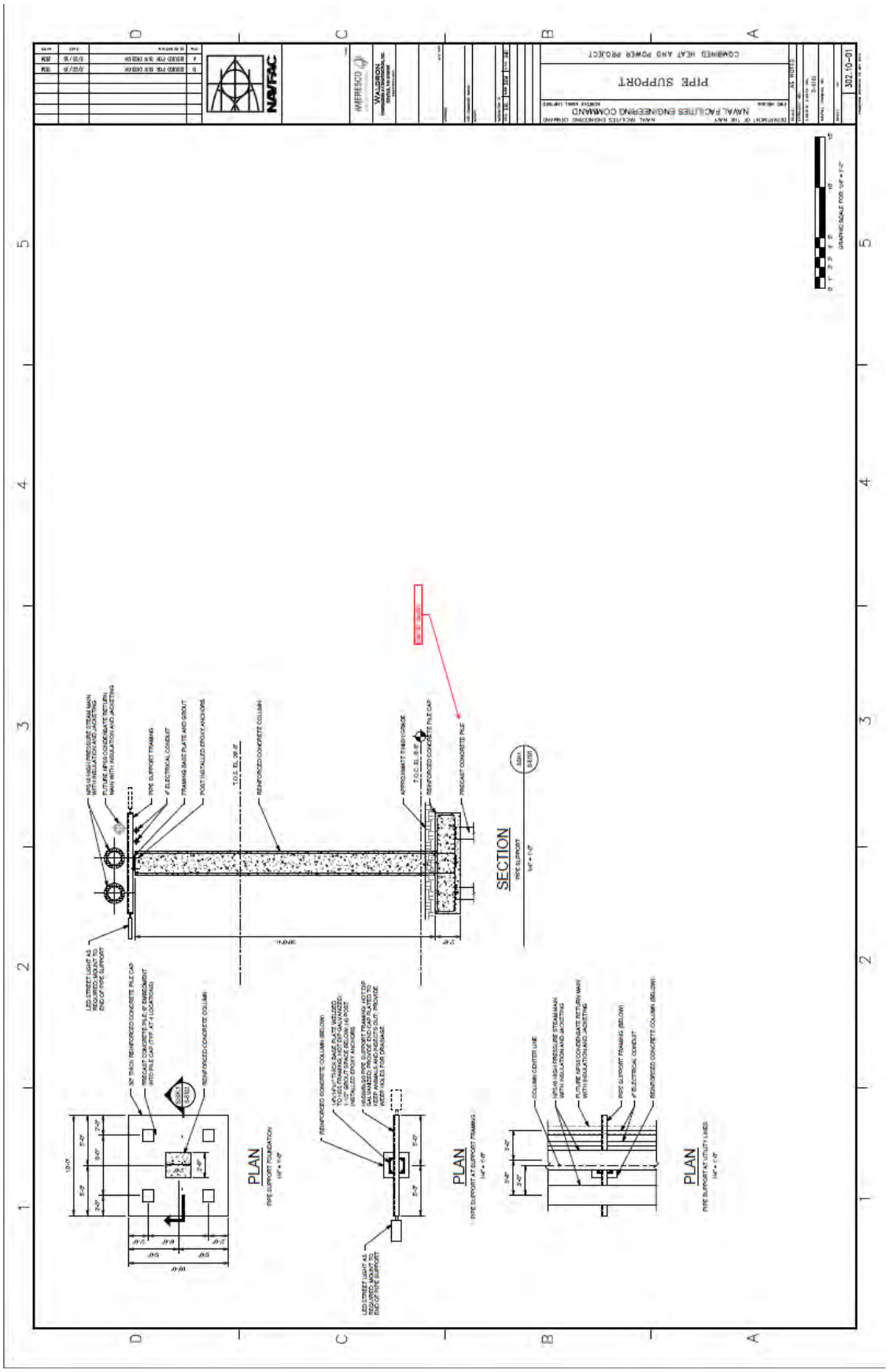
DISTRIBUTION TIE-IN PLAN
COMBINED HEAT AND POWER PROJECT
PLAN
NAVAL FACILITIES ENGINEERING COMMAND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COMBINED HEAT AND POWER PROJECT
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DEPARTMENT OF THE NAVY
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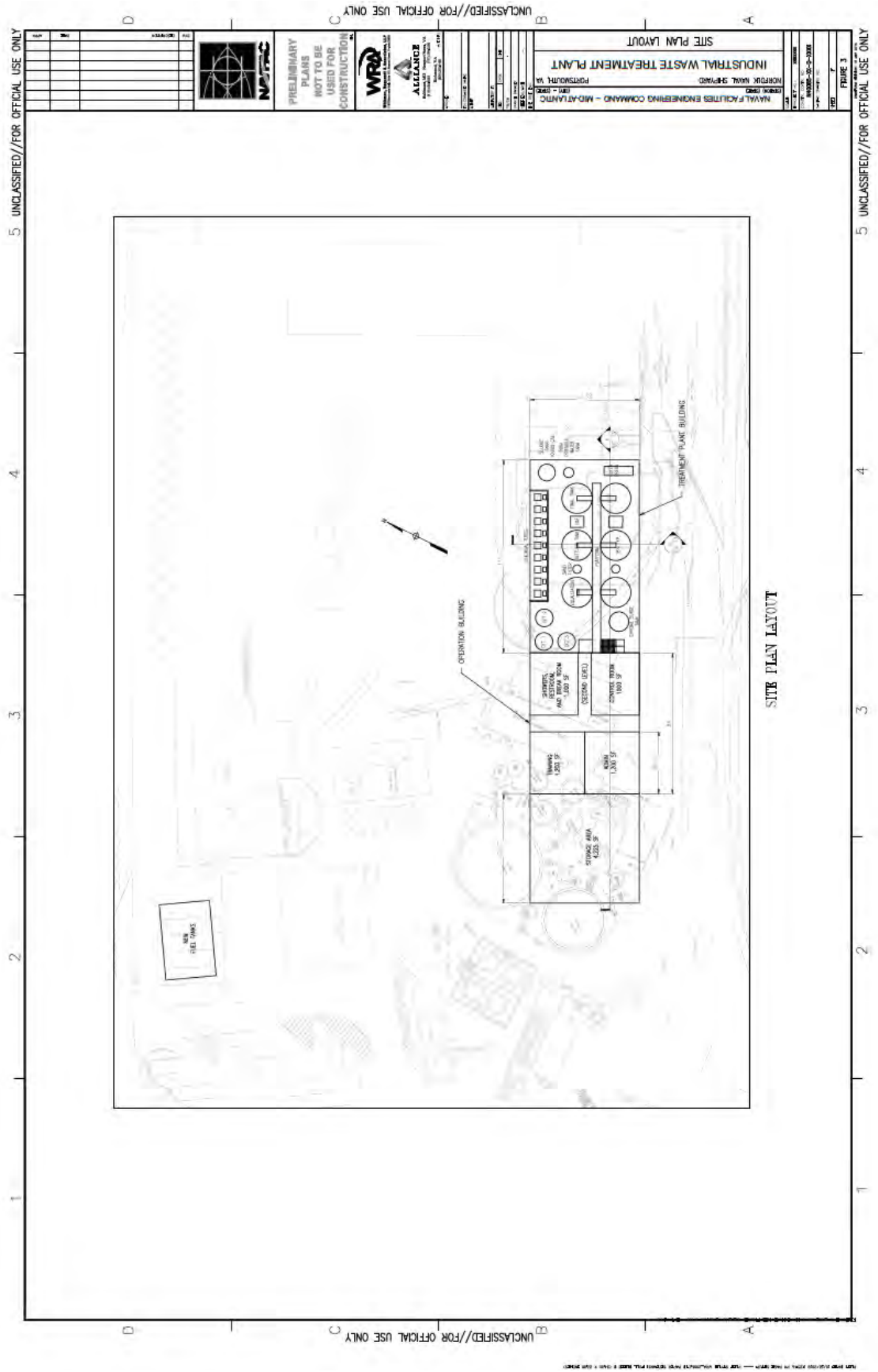
WESCO
WALSDORF
302.10-01
SECTION
PLAN
PLAN
PLAN

IWTP Plans, & Drawings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PRELIMINARY PLANS NOT TO BE USED FOR CONSTRUCTION
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NORFOLK NAVAL SHIPYARD
PORTSMOUTH, VA
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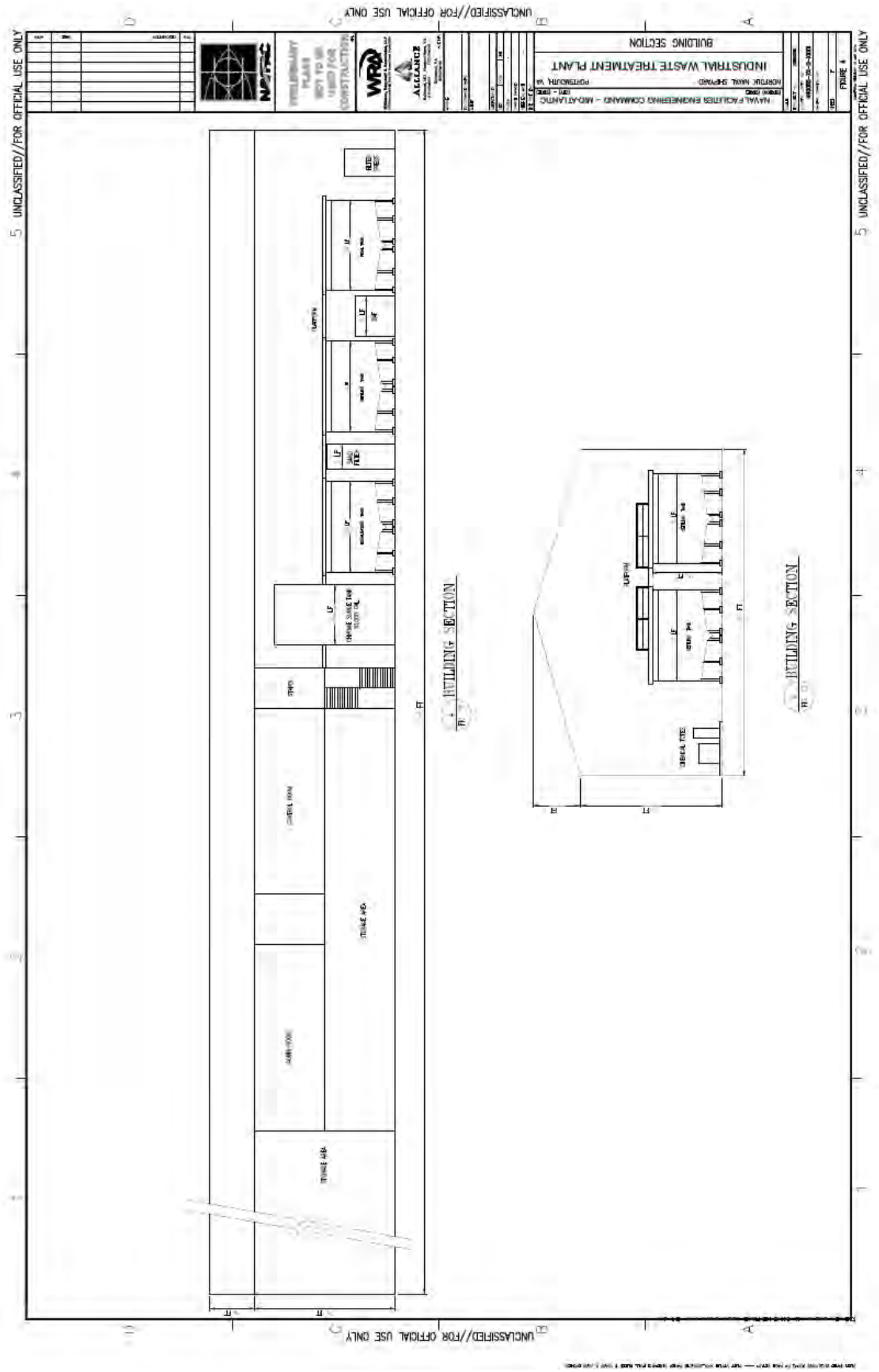
SITE PLAN LAYOUT
TREATMENT PLANT BUILDING
OPERATION BUILDING
SITE PLAN LAYOUT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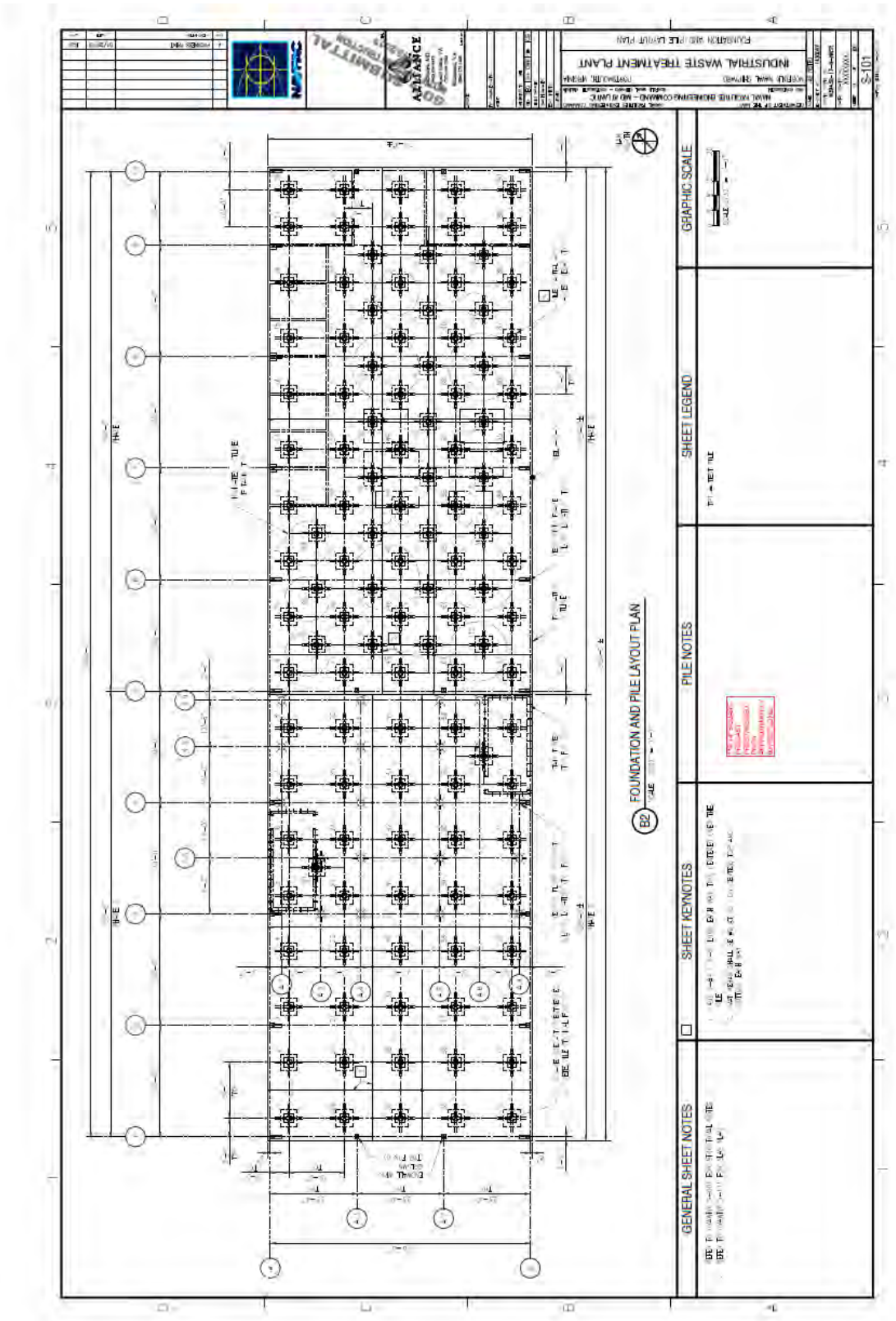
NORFOLK NAVAL SHIPYARD
PORTSMOUTH, VA
BUILDING SECTION
BUILDING SECTION


INDUSTRIAL WASTE TREATMENT PLANT
S-101
GRAPHIC SCALE
SHEET LEGEND
PILE NOTES
SHEET KEYNOTES
GENERAL SHEET NOTES
B2 FOUNDATION AND PILE LAYOUT PLAN

APPENDIX C:
U.S. Fish & Wildlife Service IPaC Package

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Memorandum:

Date: ..... **31 May 2019**

From: .... **Justine Woodward, NavFacEngCom Mid-Atlantic, EV21:JW**

To: ..... **IECM NNYS Portsmouth, VA - EA Project File**

Subj: ..... **No Effect Determination For Federally Endangered Species Under Section 7 Of the Endangered Species Act**

Pursuant to Section 7 of the Endangered Species Act (ESA), and the National Environmental Policy Act (NEPA), NavFacEngCom Mid-Atlantic, EV21 has reviewed information regarding Federally listed species and critical habitat that may be present at Norfolk Naval Shipyard (NNSY) and could be affected by implementing the proposed Energy Conservation Measures (ECM) as part of the Energy Savings Performance Contract (ESPC). Utilizing the U.S. Fish and Wildlife Service's (USFWS) "Information for Planning and Consultation (IPaC)" environmental review (Consultation Code: 05E2VA00-2019-SLI-1967), the Navy has determined that the proposed ECM construction projects, which do not include tree clearing activities, would have "No Effect" on the Federally endangered Northern Long-Eared Bat or any migratory bird species, as there is no habitat to support these species. Additionally, there is no critical habitat within the project boundary. Therefore, no further action is necessary.

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694 Fax: (804) 693-9032
http://www.fws.gov/northeast/virginiafield/

In Reply Refer To: February 08, 2019
Consultation Code: 05E2VA00-2019-SLI-1967
Event Code: 05E2VA00-2019-E-04486
Project Name: Norfolk Naval Shipyard

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
(804) 693-6694

Project Summary

Consultation Code: 05E2VA00-2019-SLI-1967

Event Code: 05E2VA00-2019-E-04486

Project Name: Norfolk Naval Shipyard

Project Type: ** OTHER **

Project Description: ESPC EA; Environmental Conservation Measures to be implemented at NNSY

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/36.81905732886439N76.29849646309464W

Counties: Chesapeake, VA | Portsmouth, VA

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

APPENDIX D:
Coastal Consistency Determination

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Subject: FW: [Non-DoD Source] Navy: Implementation of Energy Conservation Measures, DEQ # 19-059F
Attachments: ePix submittal (5-9-2019).pdf; ESPC EA SHPO (2019-3560).pdf

From: Peeling, Rebecca R CIV USN NAVFAC MIDLANT NOR (US) <rebecca.peeling@navy.mil>
Sent: Monday, August 05, 2019 10:11 am
To: Julia.Wellman@deq.virginia.gov;
Fulcher, Valerie <valerie.fulcher@deq.virginia.gov>
Cc: Krause, David J CIV USN NAVFAC MIDLANT NOR (US) <david.j.krause1@navy.mil>;
Stuck, Mary M CIV USN NAVFAC MIDLANT NOR (USA) <mary.stuck@navy.mil>
Subject: RE: Navy: Implementation Of Energy Conservation Measures, DEQ #19-059F

Good Morning,
I want to clarify one item that was noted in the Federal Consistency Determination.
The Navy has initiated consultation with the SHPO office for this project &
received concurrence on 22 May 19. Please see attached.
V/R
Rebecca Peeling
NNSY Portsmouth, VA – CR / NEPA Program Manager
(757) 334 - 1180

From: Fulcher, Valerie <valerie.fulcher@deq.virginia.gov>
Sent: Monday, August 05, 2019 9:17 AM
To: Peeling, Rebecca R CIV USN NAVFAC MIDLANT NOR (US) <rebecca.peeling@navy.mil>;
Ben McFarlane <bmcfarlane@hrpdcva.gov>;
swetsb@portsmouthva.gov; rr dgif-ESS Projects <essprojects@dgif.virginia.gov>;
Roberta Rhur <robbie.rhur@dcr.virginia.gov>; odwreview (VDH) <odwreview@vdh.virginia.gov>;
Roger Kirchen roger.kirchen@dhr.virginia.gov; Wellman, Julia <julia.wellman@deq.virginia.gov>
Subject: Navy: Implementation Of Energy Conservation Measures, DEQ #19-059F

Good morning– attached is your file copy of the completed federal review for the following project:

Federal Consistency Determination: Implementation of Energy Conservation Measures at Norfolk Naval Shipyard, Cities of Portsmouth and Chesapeake (DEQ 19-059F).

If you have any questions regarding this project, please call Julia at 804/698-4326;
eMail Julia.Wellman@deq.virginia.gov

Valerie A. Fulcher, CAP, OM, Environmental Program Specialist
Department of Environmental Quality - Environmental Enhancement - Office of Environmental Impact Review
1111 East Main Street, Richmond, VA 23219 - (804) 698 - 4330, (804) 698 - 4319 (Fax)
eMail: Valerie.Fulcher@deq.virginia.gov,
http://www.deq.virginia.gov/Programs/EnvironmentalImpactReview.aspx
For program updates and public notices please subscribe to Constant
Contact: https://lp.constantcontact.com/su/MVcCump/EIR

Subject: FW: Navy: Implementation Of Energy Conservation Measures, DEQ #19-059F
Attachments: signed state response with comments 19-059F FCD Navy Norfolk Shipyard.pdf

From: Peeling, Rebecca R CIV USN NAVFAC MIDLANT NOR (US) <rebecca.peeling@navy.mil>
Sent: Monday, August 05, 2019 9:53 am
To: Krause, David J CIV USN NAVFAC MIDLANT NOR (US) <david.j.krause1@navy.mil>
Cc: Stuck, Mary M CIV USN NAVFAC MIDLANT NOR (USA) <mary.stuck@navy.mil>
Subject: FW: Navy: Implementation Of Energy Conservation Measures, DEQ #19-059F

David,
I received the Federal Consistency Determination from DEQ this morning.
I was glancing through it; the item that jumped out to me was that the Department of Historic Resources (SHPO)
Office stated that the Navy hasn't started the consultation on this project.
This is not correct; we started and completed it in May 2019.
V/R
Rebecca Peeling
NNSY Portsmouth, VA – CR / NEPA Program Manager
(757) 334 - 1180

Subject: FW: Navy: Implementation Of Energy Conservation Measures, DEQ #19-059F
Attachments: signed state response with comments 19-059F FCD Navy Norfolk Shipyard.pdf

From: Fulcher, Valerie <valerie.fulcher@deq.virginia.gov>
Sent: Monday, August 05, 2019 9:17 AM
To: Peeling, Rebecca R CIV USN NAVFAC MIDLANT NOR (US) <rebecca.peeling@navy.mil>;
Ben McFarlane <bmcfarlane@hrpdcva.gov>;
swetsb@portsmouthva.gov; rr dgif-ESS Projects <essprojects@dgif.virginia.gov>;
Roberta Rhur <robbie.rhur@dcr.virginia.gov>;
odwreview (VDH) <odwreview@vdh.virginia.gov>;
Roger Kirchen <roger.kirchen@dhr.virginia.gov>
Cc: Wellman, Julia <julia.wellman@deq.virginia.gov>
Subject: Navy: Implementation Of Energy Conservation Measures, DEQ #19-059F

Good morning– attached is your file copy of the completed Federal review for the following project:

> **Federal Consistency Determination: Implementation of Energy Conservation Measures at Norfolk Naval Shipyard, Cities of Portsmouth and Chesapeake (DEQ 19-059F).**

If you have any questions regarding this project, please call Julia at (804) 698 - 4326;
eMail Julia.Wellman@deq.virginia.gov

Valerie A. Fulcher, CAP, OM, Environmental Program Specialist
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For program updates and public notices please subscribe to
Constant Contact: https://lp.constantcontact.com/su/MVcCump/EIR

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VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
1111 E. Main Street, Suite 1400, Richmond, Virginia 23219
P.O. Box 1105, Richmond, Virginia 23218
(800) 592-5482
www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director
(804) 698-4000

August 5, 2019

Ms. Rebecca Peeling
Department of the Navy
Norfolk Naval Shipyard
Portsmouth, VA 23709-5000

RE: Federal Consistency Determination: Implementation of Energy Conservation Measures at Norfolk Naval Shipyard, Cities of Portsmouth and Chesapeake (DEQ 19-059F).

Dear Ms. Peeling:

The Commonwealth of Virginia has completed its review of the federal consistency determination (FCD) for the above-referenced project. The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of federal consistency documents and responding to appropriate officials on behalf of the Commonwealth. This letter is in response to the FCD submission received on June 10, 2019. The following agencies participated in this review:

Department of Environmental Quality
Department of Game and Inland Fisheries
Department of Conservation and Recreation
Department of Health
Department of Historic Resources
Marine Resources Commission

The City of Portsmouth and Hampton Road Planning District Commission also were invited to comment.

PROJECT DESCRIPTION

Energy Conservation Measures
Norfolk Naval Shipyard
19-059F

The U.S. Department of the Navy (Navy) is proposing the construction of a new power plant and replacement of the existing industrial wastewater treatment plant at Norfolk Naval Shipyard (NNSY) in the City of Portsmouth. The proposed project includes the construction and operation of a combined heat and power plant. Within the power plant, the Navy proposes to install a micro-grid control system. A battery energy storage system would be installed next to the plant. The proposed 20-megawatt (MW) power plant would consist of two dual fuel (natural gas / fuel oil) - fired turbines, one steam - driven turbine, two heat recovery steam generators, three high-efficiency, low-emissions dual fuel backup steam boilers, and one standby diesel generator. A new steam distribution line would connect the power plant through existing main steam lines. A proposed new high-pressure, natural gas line would also be installed, owned, and operated by a natural gas provider and would run from an existing transport line on Military Highway (U.S. Route 13) north along area roads through St. Juliens Creek Annex, which is in the City of Chesapeake, to the site of the proposed plant. All proposed construction would occur within previously developed areas of the shipyard.

FEDERAL CONSISTENCY UNDER THE COASTAL ZONE MANAGEMENT ACT

Pursuant to the Coastal Zone Management Act of 1972, as amended, activities both within and outside of the Commonwealth's designated coastal zone with reasonably foreseeable effects on any coastal uses or resources resulting from a Federal agency activity (15 CFR Part 930, Subpart C) or Federal license or permit activity (15 CFR Part 930, Subpart D) must be consistent with Virginia's Coastal Zone Management (CZM) Program. The Virginia CZM Program consists of a network of programs administered by several agencies. DEQ coordinates the review of FCDs and federal consistency certifications (FCCs) with agencies administering the enforceable policies of the Virginia CZM Program.

PUBLIC PARTICIPATION

In accordance with 15 CFR §930.2, a public notice of this proposed action was published in the DEQ Office of Environmental Impact Review Program Newsletter and on the DEQ website from June 14, 2019 to July 9, 2019. No public comments were received in response to the notice.

FEDERAL CONSISTENCY CONCURRENCE

The FCD states that the project is consistent to the maximum extent practicable with the enforceable policies of the Virginia CZM Program. The reviewing agencies that are responsible for the administration of the enforceable policies generally agree with the FCD. Based on the review of the FCD, DEQ concurs that the proposed project is consistent to the maximum extent practicable with the CZM Program provided all

applicable permits and approvals are obtained. In addition, the FCD addresses the advisory policies of the Virginia CZM Program. However, other state approvals which may apply to this project are not included in this FCD. Therefore, the federal agency must also ensure that this project is operated in accordance with all applicable federal, state and local laws and regulations.

ANALYSIS OF ENFORCEABLE POLICIES

The analysis which follows responds to the discussion of the enforceable policies of the Virginia CZM Program that apply to this project and review comments submitted by agencies that administer the enforceable policies.

1. Fisheries Management. The FCD (page 6) states that fisheries would not be affected by the proposed project.

1(a) Agency Jurisdiction. The fisheries management enforceable policy is administered by the VMRC (Virginia Code Section 28.2-200 to 28.2-713) and the DGIF (Virginia Code Section 29.1-100 to 29.1-570). The VDH Division of Shellfish Sanitation (DSS) is responsible for protecting the health of the consumers of molluscan shellfish and crustacea by ensuring that shellfish growing waters are properly classified for harvesting, and that molluscan shellfish and crustacea processing facilities meet sanitation standards. The mission of this Division is to minimize the risk of disease from molluscan shellfish and crustacea products at the wholesale level by classifying shellfish waters for safe commercial and recreational harvest; by implementing a statewide regulatory inspection program for commercial processors and shippers; and by providing technical guidance and assistance to the shellfish and crustacea industries regarding technical and public health issues.

1(b) Agency Findings. Based on the scope and location of the proposed work, DGIF does not anticipate it to result in significant adverse impacts upon listed species or designated resources under its jurisdiction. VMRC states that no species of concern are within the area proposed to be impacted.

1(c) Conclusion. Assuming adherence to erosion and sediment control, the project is consistent to the maximum extent practicable with the fisheries management enforceable policy.

2. Wetlands Management. The FCD (page 6) states that no wetlands would be affected by the proposed project.

2(a) Agency Jurisdiction. The State Water Control Board promulgates Virginia's water regulations, covering a variety of permits to include Virginia Pollutant Discharge

Elimination System Permit, Virginia Pollution Abatement Permit, Surface and Groundwater Withdrawal Permit, and the Virginia Water Protection Permit (VWPP). The VWPP is a state permit which governs wetlands, surface water, and surface water withdrawals/impoundments. It also serves as § 401 certification of the federal Clean Water Act § 404 permits for dredge and fill activities in waters of the U.S. The VWPP Program is under the Office of Wetlands and Stream Protection (OWSP). Tidal wetlands are regulated by VMRC under the authority of Virginia Code §28.2-1301 through §28.2-1320.

2(b) Agency Findings. The DEQ Tidewater Regional Office (TRO) VWPP Program states that according to the FCD, the project would cross subaqueous bottom via directional drilling. The project will be consistent with the VWPP Program if the directional drilling operations do not impact surface waters or receive authorization for which VWPP has provided Section 401 Certification.

2(c) Agency Recommendation. If the project changes to impact surface waters or needs authorization for which the DEQ VWPP Program has not provide Section 401 Certification, coordinate with DEQ TRO to ensure compliance with the program.

2(d) Conclusion. If the directional drilling operations do not impact surface waters or if the activity receives authorization for which VWPP has provided Section 401 Certification, the project would be consistent to the maximum extent practicable with the wetlands management enforceable policy.

3. Subaqueous Lands Management. The FCD (page 3) states the installation of the natural gas pipeline would cross under several creeks including St. Juliens Creek and Paradise Creek. The line, which would be owned and operated by a natural gas provider, would be installed using horizontal directional boring to minimize excavation and disturbance to water resources. The appropriate permits to encroach over state-owned submerged lands would be secured prior to construction.

3(a) Agency Jurisdiction. The Virginia Marine Resources Commission (VMRC) regulates encroachments in, on or over state-owned subaqueous beds as well as tidal wetlands pursuant to Virginia Code §28.2-1200 through 1400. For nontidal waterways, VMRC states that it has been the policy of the Habitat Management Division to exert jurisdiction only over the beds of perennial streams where the upstream drainage area is 5 square miles or greater. The beds of such waterways are considered public below the ordinary high water line.

3(b) Agency Finding. After reviewing the provided documents, VMRC states that the proposed gas line, installed by a natural gas provider, will require a subaqueous permit

Energy Conservation Measures
Norfolk Naval Shipyard
19-059F

as the pipeline will cross under state-owned submerged lands including St. Julien's Creek and Paradise Creek.

3(c) Requirement. The project will require a VMRC submerged lands permit pursuant to Virginia Code §28.2-1200 through 1400.

3(d) Conclusion. Provided adherence to the requirements and conditions of a submerged lands permit, the project would be consistent to the maximum extent practicable with the subaqueous lands management enforceable policy.

4. Coastal Lands Management. The FCD (page 6) states that as a federal installation, Chesapeake Bay Preservation Area overlays are not applicable to NNSY. Accordingly, no designated RPAs or RMAs exist at NNSY.

4(a) Agency Jurisdiction. The DEQ Office of Local Government Programs (OLGP) administers the coastal lands management enforceable policy through the Chesapeake Bay Preservation Act (Bay Act) (Virginia Code §62.1-44.15 *et seq.*) and Chesapeake Bay Preservation Area Designation and Management Regulations (Regulations) (9VAC 25-830-10 *et seq.*).

4(b) Agency Findings. DEQ OLGP states that there are no lands analogous to RPA in the project area.

4(c) Conclusion. As proposed, the project is consistent to the maximum extent practicable with the coastal lands management enforceable policy.

5. Nonpoint Pollution Control. The FCD (page 3) states that land disturbance would occur as part of the project.

5(a) Agency Jurisdiction. The DEQ Office of Stormwater Management (OSM) administers nonpoint pollution control policy the Virginia Erosion and Sediment Control Law and Regulations (VESCL&R) and the Virginia Stormwater Management Law and Regulations (VSWML&R). DEQ is responsible for the issuance, denial, revocation, termination and enforcement of the General VPDES Permit for Discharges of Stormwater from Construction Activities (previously known as General Permit for Discharges of Stormwater from Construction Activities or Virginia Stormwater Management Program (VSMP) permit) for the control of stormwater discharges regulated under the VSWML and the VSMP Regulations.

5(b) Requirements.

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Norfolk Naval Shipyard
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5(b)(i) Erosion and Sediment Control and Stormwater Management Plans. The Navy and its authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with *VESCL&R* and *VSWML&R*, including coverage under the general permit for stormwater discharge from construction activities, and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act-Section 313, federal consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbing activities that result in the total land disturbance of equal to or greater than 10,000 square feet would be regulated by *VESCL&R*. Accordingly, the Navy must prepare and implement an erosion and sediment control (ESC) plan to ensure compliance with state law and regulations.

Land-disturbing activities that result in the total land disturbance of equal to or greater than 1 acre would be regulated by *VSWML&R*. Accordingly, the Applicant must prepare and implement a Stormwater Management (SWM) plan to ensure compliance with state law and regulations. The ESC/SWM plan is submitted to the DEQ TRO, which serves the area where the project is located for review for compliance. The Navy is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy (Reference: VESCL 62.1-44.15 *et seq.*).

5(b)(ii) General Permit for Stormwater Discharges from Construction Activities (VAR10). The operator or owner of a construction activity involving land disturbance of equal to or greater than 1 acre is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project specific stormwater pollution prevention plan (SWPPP). The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit and the SWPPP must address water quality and quantity in accordance with the VSMP Permit Regulations. General information and registration forms for the General Permit are available at https://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/ConstructionGeneralPermit.aspx (Reference: Virginia Stormwater Management Act 62.1-44.15 *et seq.*; VSMP Permit Regulations 9VAC25-880 *et seq.*).

5(b)(iii) SWPPP and Site Maps. DEQ TRO states that See Item 6 Point Source Pollution Control for additional information.

5(c) Conclusion. Provided the project complies with any applicable erosion and sediment control and stormwater management requirements, the project would be consistent to the maximum extent practicable with the nonpoint source pollution control enforceable policy.

Energy Conservation Measures
Norfolk Naval Shipyard
19-059F

6. Point Source Pollution Control. The FCD (page 3) states that the Navy would construct a new industrial wastewater treatment plant to replace the existing one. The discharge permit and actual permitted contaminant discharge would not change. Treated effluent would be discharged to the Southern Branch of the Elizabeth River, as is currently done, or stored in a 10,000 - gallon non - potable tank included with the proposed treatment plant. NNSY operates the treatment plant under VPDES industrial permit VA0005215.

6(a) Agency Jurisdiction. The point source program is administered by the State Water Control Board (DEQ) pursuant to Virginia Code §62.1-44.15. Point source pollution control is accomplished through the implementation of: (1) the National Pollutant Discharge Elimination System (NPDES) permit program established pursuant to Section 402 of the federal Clean Water Act and administered in Virginia as the Virginia Pollutant Discharge Elimination System (VPDES) permit program; and (2) the Virginia Water Protection Permit (VWPP) program administered by DEQ (Virginia Code §62.1-44.15:20 *et seq.*) and Water Quality Certification pursuant to Section 401 of the Clean Water Act.

6(b) Agency Findings. DEQ TRO states that the facility holds an individual major VPDES permit VA0005215. Although it was noted that there would be no anticipated impact to the permit or the discharges from the industrial wastewater treatment plant (internal facility outfall 401), no plans or specifications have been provided to alleviate those concerns, including any expected impacts to the formerly approved effluent mixing zone study performed at facility outfall 040.

The SWPPP and related mapping requirements under the permit may need to be addressed with new construction activities at the industrial wastewater treatment plant. If there are any new outfalls created at the combined heat and power plant, or if industrial activities at the power plant require specific content in VA0005215, the current SWPPP and associated maps may need revision.

6(c) Agency Recommendation. Coordinate with DEQ TRO regarding the anticipated discharges from the replacement industrial wastewater treatment plant, possible need for a permit modification if new outfalls are created, necessary updates to site plans and the SWPPP, and the possible impact to the formerly approved effluent mixing zone study performed at the facility outfall 040.

6(d) Requirement. The proposed project must adhere to the requirements of the individual major VPDES permit VA0005215.

Energy Conservation Measures
Norfolk Naval Shipyard
19-059F

6(e) Conclusion. Provided the project adheres to all VPDES requirements, the project would be consistent to the maximum extent practicable with the point source pollution control enforceable policy.

7. Air Pollution Control. The FCD (page 4) states that the combined heat and power plant will require a Prevention of Significant Deterioration (PSD) construction permit. Because the plant would be constructed and operated solely for NNSY, it would be incorporated into the NNSY Title V permit as a major modification.

7(a) Agency Jurisdiction. The DEQ Air Division, on behalf of the Air Pollution Control Board, is responsible for developing regulations that implement Virginia's Air Pollution Control Law. DEQ is charged with carrying out mandates of the state law and related regulations as well as Virginia's federal obligations under the Clean Air Act as amended in 1990. The objective is to protect and enhance public health and quality of life through control and mitigation of air pollution. The division ensures the safety and quality of air in Virginia by monitoring and analyzing air quality data, regulating sources of air pollution, and working with local, state and federal agencies to plan and implement strategies to protect Virginia's air quality. The appropriate regional office is directly responsible for the issue of necessary permits to construct and operate all stationary sources in the region as well as to monitor emissions from these sources for compliance. As a part of this mandate, the environmental documents of new projects to be undertaken in the state are also reviewed. In the case of certain projects, additional evaluation and demonstration must be made under the general conformity provisions of state and federal law.

7(b) Ozone Attainment Area. The project site is located in an ozone attainment area and an emission control area for volatile organic compounds (VOCs) and oxides of nitrogen (NO_X), which are contributors to ozone pollution.

7(c) Requirements.

7(c)(i) PSD Permit and Title V Modification. DEQ TRO states that the proposed project will require a PSD Permit for construction and operation. Within 12 months of beginning the operation of the new combined heat and power plant, NNSY will be required to submit a Title V application to modify the existing operating permit.

7(c)(ii) Fugitive Dust. During land-disturbing activities, fugitive dust must be kept to a minimum by using control methods outlined in 9VAC5-50-60 et seq. of the Regulations for the Control and Abatement of Air Pollution. These precautions include, but are not limited to, the following:

- Use, where possible, water or suitable chemicals for dust control during the

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proposed demolition and construction operations and from material stockpiles;
- Install and use hoods, fans and fabric filters to enclose and vent the handling of dusty materials;
- Cover open equipment for conveying materials; and
- Promptly remove spilled or tracked dirt or other materials from paved streets and dried sediments resulting from soil erosion.

7(c)(iii) Open Burning. If project activities include the burning of vegetative debris, this activity must meet the requirements under 9VAC5-130 *et seq*. of the regulations for open burning, and it may require a permit. The regulations provide for, but do not require, the local adoption of a model ordinance concerning open burning. The responsible agent should contact the locality to determine what local requirements, if any, exist.

7(c)(iv) Fuel-Burning Equipment. Fuel-burning equipment (generators, compressors, etc.) or any other air-pollution-emitting equipment may be subject to registration or permitting requirements. Any portable cement or asphalt plants employed in the process may be subject to air permitting.

7(c)(v) Asphalt Paving. In accordance with 9VAC5-45-760 *et seq*., there are limitations on the use of "cut-back" (liquefied asphalt cement, blended with petroleum solvents) that may apply to paving activities associated with the project. The asphalt must be "emulsified" (predominantly cement and water with a small amount of emulsifying agent) except when specified circumstances apply. Moreover, there are time-of-year restrictions on its use during the months of April through October in VOC emission control areas.

7(d) Agency Recommendation. DEQ recommends that all precautions are necessary to restrict the emissions of VOCs and NOx during construction.

7(e) Conclusion. Provided the project complies with applicable requirements, it would be consistent to the maximum extent practicable with the air pollution control enforceable policy of the Virginia CZM Program.

ADDITIONAL ENVIRONMENTAL CONSIDERATIONS

In addition to the enforceable policies of the Virginia CZM Program, comments also were provided with respect to applicable requirements and recommendations of the following programs:

1. Solid and Hazardous Waste Management.

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1(a) Agency Jurisdiction. On behalf of the Virginia Waste Management Board, the DEQ Division of Land Protection and Revitalization is responsible for carrying out the mandates of the Virginia Waste Management Act (Virginia Code §10.1-1400 *et seq.*), as well as meeting Virginia's federal obligations under the Resource Conservation and Recovery Act and the Comprehensive Environmental Response Compensation Liability Act, commonly known as Superfund. The DEQ Division of Land Protection and Revitalization also administers those laws and regulations on behalf of the State Water Control Board governing Petroleum Storage Tanks (Virginia Code §62.1-44.34:8 *et seq.*), including Aboveground Storage Tanks (9VAC25-91 *et seq.*) and Underground Storage Tanks (9VAC25-580 et seq. and 9VAC25-580-370 et seq.), also known as Virginia Tank Regulations, and § 62.1-44.34:14 et seq. which covers oil spills.

Virginia:

- Virginia Waste Management Act, Virginia Code § 10.1-1400 et seq.
- Virginia Solid Waste Management Regulations, 9VAC20-81
  - (9VAC20-81-620 applies to asbestos-containing materials)
- Virginia Hazardous Waste Management Regulations, 9VAC20-60
  - (9VAC20-60-261 applies to lead-based paints)
- Virginia Regulations for the Transportation of Hazardous Materials, 9VAC20-110.

Federal:

- Resource Conservation and Recovery Act (RCRA), 42 U.S. Code sections 6901 et seq.
- U.S. Department of Transportation Rules for Transportation of Hazardous Materials, 49 Code of Federal Regulations, Part 107
- Applicable rules contained in Title 40, Code of Federal Regulations.

1(b) Agency Findings. The DEQ DLPR staff conducted a search (200-foot radius) of the project area within solid and hazardous waste databases (including petroleum releases) to identify waste sites in close proximity to the project area. The search identified one petroleum release site within the project area which might impact the project. Additionally, no waste sites of possible concern were located within the zip code of the project area.

Petroleum Releases: PC Number 19901760, Norfolk Naval Shipyard, 2600-2700 Effingham St., Portsmouth, Virginia 23709. Release Date: 06/13/1990, Status: Closed.

1(c) Requirements.

- Test and dispose of any soil that is suspected of contamination or wastes that

are generated during construction-related activities in accordance with applicable federal, state and local laws and regulations.

- Characterize all construction and demolition debris, including any excess soil, in accordance with the Virginia Hazardous Waste Management Regulations prior to disposal at an appropriate offsite facility, as applicable.
- All structures being demolished or removed should be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to demolition. If ACM and LBP are found, in addition to the federal waste-related regulations mentioned above, state regulations 9VAC20-81-640 for ACM and 9VAC20-60-261 for LBP must be followed.

1(d) Agency Recommendations. Evaluate the identified petroleum release determine its impact on the proposed project. DEQ encourages all projects and facilities to implement pollution prevention principles, including:

- the reduction, reuse and recycling of all solid wastes generated; and
- the minimization and proper handling of generated hazardous wastes.

2. Historic Structures and Architectural Resources.

2(a) Agency Jurisdiction. The Virginia Department of Historic Resources (DHR) conducts reviews of both federal and state projects to determine their effect on historic properties. Under the federal process, DHR is the State Historic Preservation Office, and ensures that federal undertakings - including licenses, permits, or funding - comply with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulation at 36 CFR Part 800. Section 106 requires federal agencies to consider the effects of federal projects on properties that are listed or eligible for listing on the National Register of Historic Places. For state projects or activities on state lands, DHR is afforded an opportunity to review and comment on (1) the demolition of state property; (2) major state projects requiring an EIR; (3) archaeological investigations on state-controlled land; (4) projects that involve a landmark listed in the Virginia Landmarks Register; (5) the sale or lease of surplus state property; (6) exploration and recovery of underwater historic properties; and (7) excavation or removal of archaeological or historic features from caves. Please see DHR's website for more information about applicable state and federal laws and how to submit an application for review: http://www.dhr.virginia.gov/StateStewardship/Index.htm.

2(b) Agency Findings. DHR states that the proposed undertaking by the Navy has the potential to affect historic properties listed in or eligible for listing in the National Register of Historic Places and Virginia Landmarks Register. DHR believes the undertaking is subject to DHR review pursuant to Section 106 of the National Historic Preservation Act, as amended, and its implementing regulation 36 CFR Part 800. According to DHR's records the Navy has not yet initiated consultation with DHR on this undertaking.

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2(c) Requirement. Coordinate with DHR due to the Navy's Section 106 responsibility.

3. Natural Heritage Resources.

3(a) Agency Jurisdiction.

3(a)(i) The Virginia Department of Conservation and Recreation's (DCR) Division of Natural Heritage (DNH). DNH's mission is conserving Virginia's biodiversity through inventory, protection and stewardship. The Virginia Natural Area Preserves Act (Virginia Code §10.1-209 through 217), authorized DCR to maintain a statewide database for conservation planning and project review, protect land for the conservation of biodiversity, and the protect and ecologically manage the natural heritage resources of Virginia (the habitats of rare, threatened and endangered species, significant natural communities, geologic sites, and other natural features).

3(a)(ii) The Virginia Department of Agriculture and Consumer Services (VDACS): The Endangered Plant and Insect Species Act of 1979 (Virginia Code Chapter 39 §3.1-1020 through 1030) authorizes VDACS to conserve, protect and manage endangered and threatened species of plants and insects. Under a Memorandum of Agreement established between VDACS and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species.

3(b) Agency Findings – Natural Heritage Resources. According to the information currently in the Biotics Data System, natural heritage resources have not been documented within the submitted project boundary including a 100-foot buffer. Predictive models identifying potential habitat for natural heritage resources intersect the project boundary. However, based on DCR biologist's review of the proposed project, a survey is not recommended for the resources.

3(c) Agency Findings – Threatened and Endangered Plant and Insect Species. DCR states that the current activity will not affect any documented state-listed plant and insect species.

3(d) Agency Findings – Natural Area Preserves. DCR states that there are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

3(e) Agency Recommendations. Contact DCR DNH and re-submit project information and a map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

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4. Wildlife Resources.

4(a) Agency Jurisdiction. DGIF, as the Commonwealth's wildlife and freshwater fish management agency, exercises enforcement and regulatory jurisdiction over wildlife and freshwater fish, including state- or federally-listed endangered or threatened species, but excluding listed insects (Virginia Code, Title 29.1). DGIF is a consulting agency under the U.S. Fish and Wildlife Coordination Act (16 U.S. Code §661 et seq.) and provides environmental analysis of projects or permit applications coordinated through DEQ and several other state and federal agencies. DGIF determines likely impacts upon fish and wildlife resources and habitat, and recommends appropriate measures to avoid, reduce or compensate for those impacts. For more information, see the DGIF website at www.dgif.virginia.gov.

4(b) Agency Findings. Based on the scope and location of the proposed work, DGIF does not anticipate this project to result in adverse impacts upon listed species and designated resources under its jurisdiction.

5. Public Water Supplies.

5(a) Agency Jurisdiction. The Virginia Department of Health (VDH) Office of Drinking Water (ODW) reviews projects for the potential to impact public drinking water sources (groundwater wells, springs and surface water intakes). VDH administers both federal and state laws governing waterworks operation.

5(b) Agency Findings. VDH ODW states that there are no public groundwater wells within a 1-mile radius of the project site. The City of Norfolk's In-Town Lakes surface north and south water intakes are located within a 5-mile radius of the project site. The project is not within the watershed of any public surface water intakes.

5(c) Requirement. Potential impacts to public water distribution systems or sanitary sewage collection systems must be verified by the local utility according to VDH ODW.

6. Pollution Prevention. DEQ advocates that principles of pollution prevention and sustainability be used in all construction projects as well as in facility operations. Effective siting, planning, and on-site Best Management Practices (BMPs) will help to ensure that environmental impacts are minimized. However, pollution prevention and sustainability techniques also include decisions related to construction materials, design, and operational procedures that will facilitate the reduction of wastes at the source.

6(a) Recommendations. We have several pollution prevention recommendations that may be helpful in constructing or operating this facility:

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- Consider development of an effective Environmental Management System (EMS). An effective EMS will ensure that the proposed facility is committed to complying with environmental regulations, reducing risk, minimizing environmental impacts, setting environmental goals, and achieving improvements in its environmental performance. DEQ offers EMS development assistance and recognizes facilities with effective Environmental Management Systems through its Virginia Environmental Excellence Program (VEEP). VEEP provides recognition, annual permit fee discounts, and the possibility for alternative compliance methods.
- Consider environmental attributes when purchasing materials. For example, the extent of recycled material content, toxicity level, and amount of packaging should be considered and can be specified in purchasing contracts.
- Consider contractors' commitment to the environment when choosing contractors. Specifications regarding raw materials and construction practices can be included in contract documents and requests for proposals.
- Choose sustainable materials and practices for building construction and design.
- Integrate pollution prevention techniques into the facility maintenance and operation, to include inventory control for centralized storage of hazardous materials. Maintenance facilities should have sufficient and suitable space to allow for effective inventory control and preventive maintenance.

DEQ's Office of Pollution Prevention provides information and technical assistance relating to pollution prevention techniques and EMS. If interested, please contact DEQ (Meghann Quinn at 804-698-4021).

7. Pesticides and Herbicides. In general, when pesticides or herbicides must be used, their use should be strictly in accordance with manufacturers' recommendations. In addition, DEQ recommends that the responsible agent use the least toxic pesticides or herbicides effective in controlling the target species. For more information on pesticide or herbicide use, please contact the Virginia Department of Agriculture and Consumer Services (804-786-3501).

REGULATORY AND COORDINATION NEEDS

1. Wetlands and Water Quality. If the project changes to impact surface waters or needs authorization for which VWPP has not provided Section 401 Certification, coordinate with DEQ TRO (Jeff Hannah at Jeffrey.Hannah@deq.virginia.gov) to ensure compliance with the program.

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2. Subaqueous Lands Permit. The project will require a VMRC submerged lands permit pursuant to Virginia Code §28.2-1200 through 1400. Submit a JPA to VMRC (Rachel Peabody at Rachel.Peabody@mrc.virginia.gov or 757-247-8027).

3. Erosion and Sediment Control and Stormwater Management. The applicant must ensure that it is in compliance with Virginia Erosion and Sediment Control Law and Regulations and Stormwater Management Law and Regulations. The applicant must submit a site-specific ESC plan to DEQ TRO (Noah Hill at Noah.Hill@deq.virginia.gov or 757-373-9459) for review and approval pursuant to the local ESC ordinances. The applicant must prepare and implement a SWM plan to ensure compliance with state law and regulations (Reference: VESCL 62.1-44.15 *et seq.*).

4. General Permit for Stormwater Discharges from Construction Activities (VAR10). The operator or owner of a construction activity involving land disturbance of equal to or greater than 1 acre is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project specific stormwater pollution prevention plan (SWPPP). General questions regarding the Stormwater Management Program requirements should be directed to the DEQ Water Division (Holly Sepety at 804-698-4039) (Reference: VSWML §62.1-44.15 *et seq.*; VSMP Permit Regulations *9*VAC25-880 *et seq.*).

5. Point Source Pollution Control. The proposed project must adhere to the requirements of the individual major VPDES permit VA0005215. Coordinate with DEQ TRO (Carl Thomas at 757-518-2008 or Carl.Thomas@deq.virginia.gov) to ensure compliance with applicable requirements, including any necessary site plan or SWPPP updates or the possible need for a permit modification. The project must comply with the requirements of the VPDES permit to be consistent with the point source pollution control enforceable policy.

6. Air Pollution Control. Continue to coordinate with DEQ TRO (Laura Corl at Laura.Corl@deq.virginia.gov) on the required PSD permit and Title V modification.

7. Solid and Hazardous Wastes. All solid waste, hazardous waste and hazardous materials must be managed in accordance with all applicable federal, state and local environmental regulations. Contact DEQ TRO (Sean Priest at 757-518-2141 or Jonathan.Priest@deq.virginia.gov) for additional information on waste management as necessary.

7(a) Asbestos-Containing Material. It is the responsibility of the owner or operator of a renovation or demolition activity, prior to the commencement of the renovation or demolition, to thoroughly inspect the affected part of the facility where the operation will occur for the presence of asbestos, including Category I and Category II nonfriable

asbestos-containing material (as applicable). Upon classification as friable or non-friable, all asbestos-containing material shall be disposed of in accordance with the Virginia Solid Waste Management Regulations (9VAC20-81-640) and transported in accordance with the Virginia regulations governing Transportation of Hazardous Materials (9VAC20-110-10 *et seq.*). Contact the DEQ Division of Land Protection and Revitalization (Carlos Martinez at 804-698-4575) and the Department of Labor and Industry (804-371- 2327) for additional information.

7(b) Lead-Based Paint. If applicable, this project must comply with the U.S. Department of Labor Occupational Safety and Health Administration (OSHA) regulations and with the Virginia Lead-Based Paint Activities Rules and Regulations. For additional information regarding these requirements, contact the Department of Professional and Occupational Regulation (804-367-8500).

8. Historic Resources. Coordinate with DHR (Marc Holma at 804-482-6090 or Marc.Holma@dhr.virginia.gov) under the Navy's responsibilities pursuant to Section 106 of the National Historic Preservation Act, as amended, and its implementing regulation 36 CFR Part 800.

9. Natural Heritage Resources. Contact the DCR DNH (804-371-2708) and re-submit project information and a map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

10. Wildlife Resources. Contact DGIF (Amy Ewing at Amy.Ewing@dgif.virginia.gov) for additional information about its comments if necessary.

11. Water Supply Impacts. Coordinate with VDH ODW (Arlene Warren at Arelen.Warren@vdh.virginia.gov) for additional information about its comments as necessary.

Thank you for the opportunity to comment on the FCD. The detailed comments of reviewers are attached. If you have questions, please do not hesitate to call me at (804) 698-4204 or Julia Wellman at (804) 698-4326.

Sincerely,

Bettina Rayfield, Manager
Environmental Impact Review and Long Range Priorities Program

16

Energy Conservation Measures
Norfolk Naval Shipyard
19-059F

Enclosures

ec: Rebecca Peeling, Navy
Ben McFarlane, HRPDC
L. Pettis Patton, City of Portsmouth
Amy Ewing, DGIF
Robbie Rhur, DCR
Arlene Warren, VDH
Roger Kirchen, DHR

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DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR PROGRAM COORDINATION

ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY

TO: Julia H. Wellman DEQ - OEIR PROJECT NUMBER: DEQ #19-059F

PROJECT TYPE: ☐ STATE EA / EIR **X FEDERAL EA / EIS** ☐ SCC

X CONSISTENCY DETERMINATION

PROJECT TITLE: Implementation of Energy Conservation Measures at Norfolk Naval Shipyard, Portsmouth

PROJECT SPONSOR: U.S. Department of the Navy

PROJECT LOCATION: **X OZONE ATTAINMENT AND EMISSION CONTROL AREA FOR NOX & VOC**

REGULATORY REQUIREMENTSMAY BE APPLICABLE TO: **X CONSTRUCTION** ☐ OPERATION

STATE AIR POLLUTION CONTROL BOARD REGULATIONS THAT MAY APPLY:

1. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 E – STAGE I
2. ☐ 9 VAC 5-45-760 et seq. – Asphalt Paving operations
3. **X 9 VAC 5-130 et seq. – Open Burning**
4. **X 9 VAC 5-50-60 et seq. Fugitive Dust Emissions**
5. ☐ 9 VAC 5-50-130 et seq. - Odorous Emissions; Applicable to_____
6. ☐ 9 VAC 5-60-300 et seq. – Standards of Performance for Toxic Pollutants
7. ☐ 9 VAC 5-50-400 Subpart_____, Standards of Performance for New Stationary Sources, designates standards of performance for the_____
8. ☐ 9 VAC 5-80-1100 et seq. of the regulations – Permits for Stationary Sources
9. ☐ 9 VAC 5-80-1605 et seq. Of the regulations – Major or Modified Sources located in PSD areas. This rule may be applicable to the _____
10. ☐ 9 VAC 5-80-2000 et seq. of the regulations – New and modified sources located in non-attainment areas
11. ☐ 9 VAC 5-80-800 et seq. Of the regulations – State Operating Permits. This rule may be applicable to _____

COMMENTS SPECIFIC TO THE PROJECT:

All precautions are necessary to restrict the emissions of volatile organic compounds (VOC) and oxides of nitrogen (NO_x).

K. S. Narasimhan

(Kotur S. Narasimhan)
Office of Air Data Analysis **DATE: June 13, 2019**

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MEMORANDUM

DATE: July 1, 2019

TO: Julia Wellman DEQ

FROM: Roberta Rhur, Environmental Impact Review Coordinator

SUBJECT: DEQ 19-059F, Energy Conservation Measures at NNSY

Division of Natural Heritage

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in Biotics, natural heritage resources have not been documented within the submitted project boundary including a 100-foot buffer. Please note, predictive models identifying potential habitat for natural heritage resources intersect the project boundary. However, based on DCR biologist's review of the proposed project a survey is not recommended for the resources.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Ernie Aschenbach at 804-367-2733 or Ernie.Aschenbach@dgif.virginia.gov.

The remaining DCR divisions have no comments regarding the scope of this project. Thank you for the opportunity to comment.

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8/2019 Commonwealth of Virginia Mail - ESSLog# 39945_19-059F_NorfolkNaval_DGIF_AME20190703

Commonwealth of Virginia

Wellman, Julia <julia.wellman@deq.virginia.gov>

ESSLog# 39945_19-059F_NorfolkNaval_DGIF_AME20190703

1 message

Ewing, Amy <amy.ewing@dgif.virginia.gov> Wed, Jul 3, 2019 at 3:04 PM
To: Julia Wellman <julia.wellman@deq.virginia.gov>

Julia,
We have reviewed the subject project that proposes to implement energy conservation measures at Norfolk Naval Shipyard.

Based on the scope and location of the proposed work, we do not anticipate it to result in significant adverse impacts upon listed species or designated resources under our jurisdiction.

Assuming adherence to erosion and sediment controls, we find this project consistent with the Fisheries Management Section of the CZMA.

Thanks, Amy

Amy Ewing
Environmental Services Biologist
Manager, Fish and Wildlife Information Services
P 804.367.2211
Virginia Department of Game & Inland Fisheries
CONSERVE. CONNECT. PROTECT.
A 7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228
www.dgif.virginia.gov

tps://mail.google.com/mail/u/0?ik=20360974b0&view=pt&search=all&permthid=thread-f%3A1638065179609304685%7Cmsg-f%3A1638065179609... 1/1

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Commonwealth of Virginia

Wellman, Julia <julia.wellman@deq.virginia.gov>

Re: implementation of Energy Conservation Measures at Norfolk Naval Shipyard (DHR #2019-0388/DEQ# 19-059F)

1 message

Holma, Marc <marc.holma@dhr.virginia.gov> Mon, Jul 1, 2019 at 9:08 AM
To: Julia Wellman <julia.wellman@deq.virginia.gov>

Julia,

I put the wrong DHR file number in the subject line. It should be: **2019-0431**. Sorry for the confusion.

Marc

On Mon, Jul 1, 2019 at 9:01 AM Holma, Marc <marc.holma@dhr.virginia.gov> wrote:

> Julia,
>
> Please accept this email as DHR official response to DHR's request for our review and comment on the above referenced project. The proposed undertaking by the Navy has the potential to affect historic properties listed in or eligible for listing in the National Register of Historic Places and Virginia Landmarks Register. We believe the undertaking is subject to DHR review pursuant to Section 106 of the National Historic Preservation Act, as amended, and its implementing regulation 36 CFR Part 800. According to our records the Navy has not yet initiated consultation with DHR on this undertaking. We request that DEQ remind the Navy of its Section 106 responsibility and to begin coordination with DHR on this project in its response to the federal agency.
>
> Sincerely,
> Marc Holma
>
> --
> Marc Holma
> Architectural Historian
> Division of Review and Compliance
> (804) 482-6090
> marc.holma@dhr.virginia.gov

--
Marc Holma
Architectural Historian
Division of Review and Compliance
(804) 482-6090
marc.holma@dhr.virginia.gov

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VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

MEMORANDUM

TO: Julia Wellman, DEQ/EIR Environmental Program Planner

FROM: Carlos A. Martinez, Division of Land Protection & Revitalization Review Coordinator

DATE: July 9, 2019

COPIES: Sanjay Thirunagari, Division of Land Protection & Revitalization Review Manager; file

SUBJECT: Environmental Impact Review: 19-059F Implementation of Energy Conservation Measures at Norfolk Naval Shipyard in Portsmouth, Virginia.

The Division of Land Protection & Revitalization (DLPR) has completed its review of the U.S. Department of the Navy's June 12, 2019 EIR for Implementation of Energy Conservation Measures at Norfolk Naval Shipyard in Portsmouth, Virginia.

Solid and hazardous waste issues were not addressed in the submittal. The submittal did not indicate that a search of Federal or State environmental databases was conducted. DLPR staff conducted a search (200 ft. radius) of the project area of solid and hazardous waste databases (including petroleum releases) to identify waste sites in close proximity to the project area. DLPR identified one (1) petroleum release sites within the project area which might impact the project. Additionally, no waste sites of possible concern were located within the zip code of the project area, 23704.

DLPR staff has reviewed the submittal and offers the following comments:

Hazardous Waste/RCRA Facilities – none in close proximity to the project area

CERCLA Sites – none in close proximity to the project area

Formerly Used Defense Sites (FUDS) – none in close proximity to the project area.
Solid Waste – none in close proximity to the project area

Virginia Remediation Program (VRP) – none in close proximity to the project area

Petroleum Releases – One (1) found in close proximity to the project area

1. *PC Number 19901760, Norfolk Naval Shipyard, 2600-2700 Effingham St., Portsmouth, Virginia 23709. Release Date: 06/13/1990, Status: Closed.*

Please note that the DEQ's Pollution Complaint (PC) cases identified should be further evaluated by the project engineer or manager to establish the exact location, nature and extent of the petroleum release and the potential to impact the proposed project. In addition, the project engineer or manager should contact the DEQ's Tidewater Regional Office at (757) 518-2000 (Tanks Program) for further information about the PC cases.

PROJECT SPECIFIC COMMENTS

None

GENERAL COMMENTS

Soil, Sediment, Groundwater, and Waste Management

Any soil, sediment or groundwater that is suspected of contamination or wastes that are generated must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations. Some of the applicable state laws and regulations are: Virginia Waste Management Act, Code of Virginia Section 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60); Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-81); Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal laws and regulations are: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous Materials, 49 CFR Part 107.

Asbestos and/or Lead-based Paint

All structures being demolished/renovated/removed should be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to demolition. If ACM or LBP are found, in addition to the federal waste-related regulations mentioned above, State regulations 9VAC 20-81-620 for ACM and 9VAC 20-60-261 for LBP must be followed. Questions may be directed to Melinda Woodruff at the DEQ's Tidewater Regional Office at (757) 518-2000.

Pollution Prevention – Reuse - Recycling

Please note that DEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All generation of hazardous wastes should be minimized and handled appropriately.

If you have any questions or need further information, please contact Carlos A. Martinez by phone at (804) 698-4575 or email carlos.martinez@deq.virginia.gov.

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7/8/2019 Commonwealth of Virginia Mail - Re: NEW PROJECT Navy Energy Conservation Measures 19-059F

Commonwealth of Virginia

Wellman, Julia <julia.wellman@deq.virginia.gov>

Re: NEW PROJECT Navy Energy Conservation Measures 19-059F

1 message

Mackey, Heather <heather.mackey@deq.virginia.gov> Mon, Jul 8, 2019 at 10:46 AM
To: "Wellman, Julia" <julia.wellman@deq.virginia.gov>
Cc: "Daniel (DEQ)" <Daniel.Moore@deq.virginia.gov>

I agree Julia - there is no RPA in these areas, so no impact. Do you need me to write a letter?

Heather Mackey

Principal Environmental Planner, Local Government Assistance Programs

Department of Environmental Quality, Water Planning Division

1111 East Main Street

Richmond, Virginia 23219

Tel: 804-698-4399

Email: heather.mackey@deq.virginia.gov

Website: https://www.deq.virginia.gov/Programs/Water/ChesapeakeBay/ChesapeakeBayPreservationAct.asp

On Wed, Jun 12, 2019 at 2:41 PM Wellman, Julia <julia.wellman@deq.virginia.gov> wrote:

> This FCD did not identify lands analogous to CBPAs on the site. Since the project appears to be redevelopment in concrete covered areas, I did not push the issue. However, if you need more specific information, please let me know. Thanks.
>
> ---------- Forwarded message ---------
> From: **Fulcher, Valerie** <valerie.fulcher@deq.virginia.gov>
> Date: Wed, Jun 12, 2019 at 2:04 PM
> Subject: NEW PROJECT Navy Energy Conservation Measures 19-059F
> To: rr dgif-ESS Projects <essprojects@dgif.virginia.gov>, Roberta Rhur <robbie.rhur@dcr.virginia.gov>, McKelvey, Kristal <kristal.mckelvey@dcr.virginia.gov>, odwreview (VDH) <odwreview@vdh.virginia.gov>, Carlos Martinez <carlos.martinez@deq.virginia.gov>, Kotur Narasimhan <kotur.narasimhan@deq.virginia.gov>, Lawrence Gavan <larry.gavan@deq.virginia.gov>, Daniel Moore <daniel.moore@deq.virginia.gov>, Holly Sepety <holly.sepety@deq.virginia.gov>, Cindy Robinson <cindy.robinson@deq.virginia.gov>, Roger Kirchen <roger.kirchen@dhr.virginia.gov>, Ben McFarlane <bmcfarlane@hrpdcva.gov>, <hartleyj@portsmouthva.gov>
> Cc: Wellman, Julia <julia.wellman@deq.virginia.gov>
>
> Good afternoon - this is a new OEIR review request/project:
>
> **Document Type:** Federal Consistency Determination
> **Project Sponsor:** U.S. Department of the Navy
> **Project Title:** Implementation of Energy Conservation Measures at Norfolk Naval Shipyard, Portsmouth
> **Location:** City of Portsmouth
> **Project Number:** DEQ #19-059F

https://mail.google.com/mail/u/0?ik=20360974b0&view=pt&search=all&permthid=thread-f%3A1636158824866131784%7Cmsg-f%3A1638501954547... 1/3

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The document is attached.

The due date for comments is JULY 9, 2019. You can send your comments either directly to JULIA WELLMAN by email (Julia.Wellman@deq.virginia.gov), or you can send your comments by regular interagency/U.S. mail to the Department of Environmental Quality, Office of Environmental Impact Review, 1111 East Main St., Richmond, VA 23219.

If you cannot meet the deadline, please notify the project coordinator prior to the comment due date. Arrangements may be made to extend the deadline for comments if possible. An agency will be considered to have no concerns if comments are not received (or contact is made) within the review period. However, it is important that agencies consistently participate in accordance with Virginia Code Section 10.1-1192.

REVIEW INSTRUCTIONS:

A. Please review the document carefully. If the proposal has been previously reviewed (e.g. as a draft EIS or a Part 1 EIR), please consider whether your earlier comments have been adequately addressed.

B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency (agency stationary or email) and include the project number on all correspondence.

If you have any questions, please email Julia.

Thanks!

Valerie

–

Valerie A. Fulcher, CAP, OM, Environmental Program Specialist

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

1111 East Main Street

Richmond, VA 23219

804/698-4330

804/698-4319 (Fax)

email: Valerie.Fulcher@deq.virginia.gov

http://www.deq.virginia.gov/Programs/EnvironmentalImpactReview.aspx

For program updates and public notices please subscribe to the OEIR News Feed

–

Julia Wellman
Environmental Impact Review Coordinator
Department of Environmental Quality

1111 E Main Street, Suite 1400
Richmond, VA 23219
804-698-4326
Julia.Wellman@deq.virginia.gov
www.deq.virginia.gov

**** For program updates and public notices, please subscribe to the OEIR News Feed.****

Commonwealth of Virginia

Wellman, Julia <julia.wellman@deq.virginia.gov>

Re: NEW PROJECT Navy Energy Conservation Measures 19-059F

1 message

Gavan, Lawrence <larry.gavan@deq.virginia.gov> Wed, Jun 12, 2019 at 2:18 PM
To: "Wellman, Julia" <julia.wellman@deq.virginia.gov>

(a) Agency Jurisdiction. The Department of Environmental Quality (DEQ) administers the *Virginia Erosion and Sediment Control Law and Regulations* (*VESCL&R*) and *Virginia Stormwater Management Law and Regulations* (*VSWML&R*).

(b) Erosion and Sediment Control and Stormwater Management Plans. The Applicant and its authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with *VESCL&R* and *VSWML&R*, including coverage under the general permit for stormwater discharge from construction activities, and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act-Section 313, federal consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbing activities that result in the total land disturbance of equal to or greater than 10,000 square feet (2,500 square feet in Chesapeake Bay Preservation Area) would be regulated by *VESCL&R*. Accordingly, the Applicant must prepare and implement an erosion and sediment control (ESC) plan to ensure compliance with state law and regulations. Land-disturbing activities that result in the total land disturbance of equal to or greater than 1 acre (2,500 square feet in Chesapeake Bay Preservation Area) would be regulated by *VSWML&R*. Accordingly, the Applicant must prepare and implement a Stormwater Management (SWM) plan to ensure compliance with state law and regulations. The ESC/SWM plan is submitted to the DEQ Regional Office that serves the area where the project is located for review for compliance. The Applicant is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy. [Reference: VESCL 62.1-44.15 et seq.]

(c) General Permit for Stormwater Discharges from Construction Activities (VAR10). DEQ is responsible for the issuance, denial, revocation, termination and enforcement of the Virginia Stormwater Management Program (VSMP) General Permit for Stormwater Discharges from Construction Activities related to municipal separate storm sewer systems (MS4s) and construction activities for the control of stormwater discharges from MS4s and land disturbing activities under the Virginia Stormwater Management Program.

The owner or operator of projects involving land-disturbing activities of equal to or greater than 1 acre is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project-specific Stormwater Pollution Prevention Plan. Construction activities requiring registration also include land disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan of development will collectively disturb equal to or greater than one acre The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit and the SWPPP must address water quality and quantity in accordance with the *VSMP Permit Regulations*. General information and registration forms for the General Permit are available at: http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/ConstructionGeneralPermit.aspx
[Reference: Virginia Stormwater Management Act 62.1-44.15 et seq.; VSMP Permit Regulations 9VAC25-880 *et seq.]*

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6/12/2019 Commonwealth of Virginia Mail - Re: NEW PROJECT Navy Energy Conservation Measures 19-059F

On Wed, Jun 12, 2019 at 2:04 PM Fulcher, Valerie <valerie.fulcher@deq.virginia.gov> wrote:

Good afternoon - this is a new OEIR review request/project:

Document Type: Federal Consistency Determination
Project Sponsor: U.S. Department of the Navy
Project Title: Implementation of Energy Conservation Measures at Norfolk Naval Shipyard, Portsmouth
Location: City of Portsmouth
Project Number: DEQ #19-059F

The document is attached.

The due date for comments is JULY 9, 2019. You can send your comments either directly to JULIA WELLMAN by email (Julia.Wellman@deq.virginia.gov), or you can send your comments by regular interagency/U.S. mail to the Department of Environmental Quality, Office of Environmental Impact Review, 1111 East Main St., Richmond, VA 23219.

If you cannot meet the deadline, please notify the project coordinator prior to the comment due date. Arrangements may be made to extend the deadline for comments if possible. An agency will be considered to have no concerns if comments are not received (or contact is made) within the review period. However, it is important that agencies consistently participate in accordance with Virginia Code Section 10.1-1192.

REVIEW INSTRUCTIONS:

A. Please review the document carefully. If the proposal has been previously reviewed (e.g. as a draft EIS or a Part 1 EIR), please consider whether your earlier comments have been adequately addressed.

B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency (agency stationary or email) and include the project number on all correspondence.

If you have any questions, please email Julia.

Thanks!

Valerie

–

Valerie A. Fulcher, CAP, OM, Environmental Program Specialist

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

1111 East Main Street

Richmond, VA 23219

804/698-4330

804/698-4319 (Fax)

email: Valerie.Fulcher@deq.virginia.gov

> http://www.deq.virginia.gov/Programs/EnvironmentalImpactReview.aspx
>
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DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
ENVIRONMENTAL IMPACT REVIEW COMMENTS

July 15, 2019

PROJECT NUMBER: 19-059F

PROJECT TITLE: Implementation of Energy Conservation Measures at Norfolk Naval Shipyard, Portsmouth

As Requested, TRO staff has reviewed the supplied information and has the following comments:

Petroleum Storage Tank Cleanups:
No comments.

Petroleum Storage Tank Compliance/Inspections:
No comments.

Virginia Water Protection Permit Program (VWPP):
The application indicates that the project would cross subaqueous bottom via directional drilling. The project will be consistent with our program if the directional drilling operations do not impact surface waters or receive authorization for which VWPP has provided Section 401 Certification.

Air Permit Program :
The following air regulations of the Virginia Administrative Code may be applicable: 9VAC5-50-60 *et seq.* which addresses the abatement of visible emissions and fugitive dust emissions. For additional information, contact Laura Corl at (757) 518-2178.

Water Permit Program :
The facility holds a individual EPA major VPDES permit (VA0005215). Although information was provided indicating the existing metal finishing IWTP would be replaced as part of the EIR, and it was noted no anticipated impact to the permit or the discharges from the industrial wastewater treatment plant (IWTP, internal facility outfall 401) were anticipated, no plans or specifications have been provided to alleviate those concerns, including any expected impacts to the formerly approved effluent mixing zone study performed at facility outfall 040. Additionally, the SWP3 and related mapping requirements under the permit may need to be addressed with new construction activities at the IWTP, should they occur.

If there are any new outfalls created at the CHP, or if industrial activities at the CHP require specific content in VA0005215, the current SWP3, and associated maps may need revision. Please contact Carl Thomas (757) 518-2008 for additional details.

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DEPARTMENT OF ENVIRONMENTAL QUALITY
TIDEWATER REGIONAL OFFICE
ENVIRONMENTAL IMPACT REVIEW COMMENTS

July 15, 2019

PROJECT NUMBER: 19-059F

PROJECT TITLE: Implementation of Energy Conservation Measures at Norfolk Naval Shipyard, Portsmouth

Waste Permit Program :
All construction, demolition and debris waste including excess soil must be characterized in accordance with the Virginia Hazardous Waste Management Regulations prior to management at an appropriate facility. For additional information, contact Sean Priest, DEQ-TRO at (757) 518-2141 or jonathan.priest@deq.virginia.gov.

Storm Water Program:
Erosion and sediment control plans should be submitted to DEQ for land disturbance over 10,000 sq/ft

The staff from the Tidewater Regional Office thanks you for the opportunity to provide comments.

Sincerely,

Cindy Robinson
Environmental Specialist II
5636 Southern Blvd.
VA Beach, VA 23462
(757) 518-2167
Cindy.Robinson@deq.virginia.gov

2 of 2

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Commonwealth of Virginia

Wellman, Julia <julia.wellman@deq.virginia.gov>

Re: EIR 19-059F_Implementation of Energy Conservation Measures at Norfolk Naval Shipyard, Portsmouth

1 message

Corl, Laura <laura.corl@deq.virginia.gov> Wed, Jul 31, 2019 at 8:49 AM
To: "Wellman, Julia" <julia.wellman@deq.virginia.gov>
Cc: "Robinson, Cindy" <cindy.robinson@deq.virginia.gov>

Julia,

We do have a PSD permit in-house for this source in order to construct and operate. Once that is complete, they will be required to submit a Title V application to modify their Operating Permit within 12 months of beginning operating the new CHP.

Hope this helps. If you have any questions, please let me know.

Laura Corl
Air Permit Manager
Tidewater Regional Office
Department of Environmental Quality
5636 Southern Blvd
Virginia Beach, Virginia 23462
757-518-2178
www.deq.virginia.gov

On Wed, Jul 31, 2019 at 8:44 AM Wellman, Julia <julia.wellman@deq.virginia.gov> wrote:

> Hi Cindy and Laura,
>
> The submission for the proposed project at the Norfolk Naval Shipyard in Portsmouth indicates (below) that the plant requires a PSD construction permit and incorporated into the NNSY Title V permit as a major modification.
>
> Will you please confirm whether this is correct or not? I'm coming up against a deadline, and I need to completed the review.
>
> Please get back to me as soon as possible today. Thank you, Julia
>
> Air Pollution Control
> Pursuant to Code of Virginia Code of Virginia §10-1.1300 through §10.1-1320 and the Clean Air Act (CAA) (42 U.S.C. §7401 et seq.), the Virginia DEQ implements a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards (NAAQS). The State Air Pollution Control Board administers this program.
> Consistency Analysis: The Proposed Action would include the construction and operation of a CHP Plant, a new stationary emissions source. A new permit would be required for operation of the CHP Plant. Construction activities under the Proposed Action would contribute to the annual air emissions inventory. The permit application was submitted to Virginia DEQ on May 14, 2019.
> The CHP Plant requires a Prevention of Significant Deterioration (PSD) construction permit due to the emissions anticipated. Because the CHP Plant would be constructed and operated solely for NNSY, it would be incorporated into the NNSY Title V permit as a major modification. Operational emissions for the CHP Plant would be evaluated as part of the PSD permitting process in order to ensure that the facility would be in compliance with all relevant air quality standards. The emission sources must apply Best Available Control Technology (BACT) and perform a modeling analysis to demonstrate compliance with the NAAQS and the PSD increments. The issuance of a PSD permit would signify that the CHP Plant would demonstrate compliance with all ambient standards and

would result in no significant deterioration of air quality in the area. Table 1 compares 2017 emissions at NNSY and the proposed maximum emissions once the CHP Plant is constructed and operational. Future year emissions assume that all other activity emissions at NNSY stay the same.
Table 1: Net Change Emissions Associated With The Proposed Action (Tons Per Year)
Activity VOC CO NOx SO2 PM10 PM2.5
2017 NNSY Emissions 29.39 2.50 10.08 0.0 6.13 5.94
Future NNSY Emissions with CHP 42.47 98.47 84.31 6.81 23.89 23.64
Net Change 13.08 95.97 74.23 6.81 17.76 17.70
The emissions generated under the Proposed Action would not violate Federal or Virginia air quality standards. Temporary and minor increases in air emissions from the combustion of fossil fuels by motorized equipment, operation of aircraft and ground vehicles, and from emissions of fugitive dust and dirt during site ground disturbance would be reduced through the implementation of BMPs. Fugitive dust from land-disturbing activities would be kept to a minimum using control methods outlined in 9VAC5-50-60 et seq. of the Regulations for the Control and Abatement of Air Pollution. Based on the emissions as outlined in Table 2 during the construction phase, most of the mobile source pollutant emissions are below what are considered the Title V insignificant emission rate of 5 tons per year for stationary sources, a rate below where minimal impacts are expected from stationary sources. For the only pollutant above this 5 tons per year threshold – CO, the NAAQS are much higher than all other NAAQS. As the area is currently attaining all NAAQS, the small emissions during construction phase should have no effect on the NAAQS in the area. Construction and annual operational emissions would not exceed de minimis levels under the CAA General Conformity Rule.
5
Table 2: Criteria Pollutant Construction Emissions (Tons Per Year)
Activity VOC CO NOx SO2 PM10 PM2.5
Construction & Demolition 0.47 6.91 3.37 0.05 0.19 0.19
The Proposed Action would be fully consistent with the air pollution control policy of the Virginia Coastal Zone Management Program.

On Mon, Jul 22, 2019 at 1:12 PM Wellman, Julia <julia.wellman@deq.virginia.gov> wrote:

Hi Cindy,

Will you please double check with the air folks? The submittal states that the project would need a PSD permit. Does TRO handle that? If so, will you please ask air to confirm? If not, I'll check with CO air division.

On Mon, Jul 15, 2019 at 7:38 AM Robinson, Cindy <cindy.robinson@deq.virginia.gov> wrote:

Good morning Julia,

Please find attached a copy of TRO comments for the subject EIR. If you have any questions, please let me know.

Thanks,
Cindy Robinson
Department of Environmental Quality
Environmental Specialist II
Tidewater Regional Office
5636 Southern Blvd.
Virginia Beach, VA 23462
Email: cindy.robinson@deq.virginia.gov
Phone: (757) 518-2167
Fax: (757)518-2009

--

Julia Wellman
Environmental Impact Review Coordinator

Department of Environmental Quality
1111 E Main Street, Suite 1400
Richmond, VA 23219
804-698-4326
Julia.Wellman@deq.virginia.gov
www.deq.virginia.gov

**** For program updates and public notices, please subscribe to Constant Contact: https://lp.constantcontact.com/su/MVcCump/EIR ****

–

Julia Wellman
Environmental Impact Review Coordinator
Department of Environmental Quality
1111 E Main Street, Suite 1400
Richmond, VA 23219
804-698-4326
Julia.Wellman@deq.virginia.gov
www.deq.virginia.gov

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Commonwealth of Virginia

Wellman, Julia <julia.wellman@deq.virginia.gov>

Re: NEW PROJECT Navy Energy Conservation Measures 19-059F

1 message

Warren, Arlene <arlene.warren@vdh.virginia.gov> Fri, Jul 12, 2019 at 11:16 AM
To: Julia Wellman <julia.wellman@deq.virginia.gov>

Project Name: Implementation of Energy Conservation Measures at Norfolk Naval Shipyard
Project #: 19-059 F
UPC #: N/A
Location: City of Portsmouth.

VDH – Office of Drinking Water has reviewed the above project. Below are our comments as they relate to proximity to **public drinking water sources** (groundwater wells, springs and surface water intakes). Potential impacts to public water distribution systems or sanitary sewage collection systems **must be verified by the local utility.**

There are no public groundwater wells within a 1-mile radius of the project site.

The following surface water intakes are located within a 5 mile radius of the project site:

PWS ID Number	System Name	Facility Name
3550051	CITY OF CHESAPEAKE - NORTHWEST RIVER SYS	IN-TOWN LAKES-NORTH INTAKE
3550051	CITY OF CHESAPEAKE - NORTHWEST RIVER SYS	IN TOWN LAKES -SOUTH INTAKE

The project is not within the watershed of any public surface water intakes.

- *No comments were received from OEHS Onsite Sewage & Water Services, Mr. Lance Gregory.*
- *No comments were received from Environmental Epidemiology, Mr. Dwight Flammia.*

The Virginia Department of Health – Office of Drinking Water appreciates the opportunity to provide comments. If you have any questions, please let me know.

Best Regards,

Arlene Fields Warren

GIS Program Support Technician

Office of Drinking Water

Virginia Department of Health

109 Governor Street

Richmond, VA 23219

(804) 864-7781

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On Wed, Jun 12, 2019 at 2:04 PM Fulcher, Valerie <valerie.fulcher@deq.virginia.gov> wrote:

Good afternoon - this is a new OEIR review request/project:

Document Type: Federal Consistency Determination
Project Sponsor: U.S. Department of the Navy
Project Title: Implementation of Energy Conservation Measures at Norfolk Naval Shipyard, Portsmouth
Location: City of Portsmouth
Project Number: DEQ #19-059F

The document is attached.

The due date for comments is JULY 9, 2019. You can send your comments either directly to JULIA WELLMAN by email (Julia.Wellman@deq.virginia.gov), or you can send your comments by regular interagency/U.S. mail to the Department of Environmental Quality, Office of Environmental Impact Review, 1111 East Main St., Richmond, VA 23219.

If you cannot meet the deadline, please notify the project coordinator prior to the comment due date. Arrangements may be made to extend the deadline for comments if possible. An agency will be considered to have no concerns if comments are not received (or contact is made) within the review period. However, it is important that agencies consistently participate in accordance with Virginia Code Section 10.1-1192.

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B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency (agency stationary or email) and include the project number on all correspondence.

If you have any questions, please email Julia.

Thanks!

Valerie

–

Valerie A. Fulcher, CAP, OM, Environmental Program Specialist

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

1111 East Main Street

Richmond, VA 23219

804/698-4330

804/698-4319 (Fax)

email: Valerie.Fulcher@deq.virginia.gov

http://www.deq.virginia.gov/Programs/EnvironmentalImpactReview.aspx

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COMMONWEALTH of VIRGINIA

Marine Resources Commission
380 Fenwick Road
Bldg 96
Fort Monroe, VA 23651-1064

Matthew J. Strickler
Secretary of Natural Resources

Steven G. Bowman
Commissioner

July 26, 2019

Department of Environmental Quality
Attn: Julia Wellman
1111 East Main St.
Richmond, VA 23219

Re: Federal Consistency Determination
Implementation of Energy Conservation Measures at
Norfolk Naval Shipyard
DEQ #19-059F

Dear Ms. Wellman

This will respond to the request for comments regarding the Federal Consistency Determination for the implementation of energy conservation measures at Norfolk Naval Shipyard (DEQ #19-059F), prepared by the Department of the Navy. Specifically, the Navy has proposed energy conservation measures, including the installation of a combined heat and power plant with a micro-control grid system and a battery energy storage system. The project is located in the City of Portsmouth, Virginia.

After reviewing the provided documents, the proposed gas line, installed by a natural gas provider, WILL require a subaqueous permit as the pipeline will cross under state-owned submerged lands including St. Julien's Creek and Paradise Creek.

Please be advised that the Virginia Marine Resources Commission (VMRC) pursuant to Chapter 12, 13, & 14 of Title 28.2 of the Code of Virginia administers permits required for submerged lands, tidal wetlands, and beaches and dunes. The VMRC administers the enforceable policies of fisheries management, subaqueous lands, tidal wetlands, and coastal primary sand dunes and beaches which comprise some of Virginia's Coastal Zone Management Program. VMRC staff has reviewed the submittal and offers the following comments:

Fisheries and Shellfish: No species of concern proposed to be impacted within the project limits

State-owned Submerged Lands: The project will require a VMRC submerged lands permit

Tidal Wetlands: No impacts proposed

Beaches and Coastal Primary Sand Dunes: None in close proximity to the project area

Our final recommendation cannot be reached until the submittal of a Joint Permit Application and completion of our permit review process. Any permit issued by the VMRC will specify necessary

Department of Environmental Quality
July 26, 2019
Page Two

special conditions for the project.

If you have any questions please contact me at (757) 247-8027 or by email at rachael.peabody@mrc.virginia.gov. Thank you for the opportunity to comment.

Sincerely,

Rachael Peabody
Environmental Engineer, Habitat Management

RLP/keb
HM

DEPARTMENT OF THE NAVY
NORFOLK NAVAL SHIPYARD
PORTSMOUTH, VIRGINIA 23709-5000

5090
Ser 100/PRM104
6 June 2019

Ms. Bettina Rayfield
Office of Environmental Impact Review
Department of Environmental Quality
Post Office Box 1105
Richmond, Virginia 23218

Dear Ms. Rayfield:

SUBJECT: FEDERAL COASTAL CONSISTENCY DETERMINATION FOR IMPLEMENTATION OF ENERGY CONSERVATION MEASURES AT NORFOLK NAVAL SHIPYARD

The U.S. Department of the Navy (Navy) is proposing to implement energy conservation measures through award of an Energy Savings Performance Contract at Norfolk Naval Shipyard (NNSY) in Portsmouth, Virginia. The Proposed Action would construct and operate a combined heat and power (CHP) plant; install a micro-grid control system within the CHP; install a battery energy storage system located immediately adjacent to the south side of the proposed CHP plant; and replace the existing industrial wastewater treatment plant. A proposed new high-pressure natural gas line and steam distribution line would also be installed. All construction would occur within previously developed areas of NNSY.

The enclosed Federal Coastal Consistency Determination and associated figures are being submitted in accordance with Section 307(c)(1) of the Federal Coastal Zone Management Act of 1972 as amended. The Navy has determined that the proposed federal agency action may have an effect on a coastal use or resource of the Commonwealth of Virginia's coastal zone and will be consistent to the maximum extent practicable with the applicable enforceable policies of the Virginia Coastal Zone Management Program.

Pursuant to 15 Code of Federal Regulations (CFR) Section 930.41, the Virginia Coastal Zone Management Program has 60 days from the receipt of this letter in which to concur with or object to this Consistency Determination, or to request an extension under 15 CFR Section 930.41(b). Virginia's concurrence will be presumed if its response is not received by the Navy on the 60th day from receipt of this letter. The Commonwealth's response should be sent to: Ms. Rebecca Peeling at Rebecca.Peeling@navy.mil. If you have any questions, please contact Ms. Peeling at (757) 334-1180.

Mary Stuck

MARY STUCK
By direction

Enclosures: 1. Federal Coastal Consistency Determination

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FEDERAL COASTAL CONSISTENCY DETERMINATION IMPLEMENTATION OF ENERGY CONSERVATION MEASURES AT NORFOLK NAVAL SHIPYARD, PORTSMOUTH, VIRGINIA

INTRODUCTION

This document provides the Commonwealth of Virginia with the U.S. Department of the Navy's (Navy) Coastal Consistency Determination under the Coastal Zone Management Act (CZMA) Section 307(c)(1) of the Federal CZMA of 1972, as amended, and 15 Code of Federal Regulations (CFR) Part 930, Subpart C, for the Navy's proposal to implement energy conservation measures (ECMs) at the Norfolk Naval Shipyard (NNSY) in Portsmouth, Virginia.

DESCRIPTION OF PROPOSED FEDERAL AGENCY ACTION

The Navy proposes to implement Energy Conservation Measures (ECMs) through award of an Energy Savings Performance Contract (ESPC) at the NNSY. The ECMs would be owned and operated by the Navy and installed and maintained by an energy service company. The Proposed Action includes the construction and operation of a Combined Heat and Power (CHP) Plant; installation of a micro - grid control system within the CHP Plant; installation of a battery energy storage system next to the CHP Plant; and replacement of the existing industrial wastewater treatment plant (IWTP). The proposed CHP Plant would provide the installation with its own source of steam and electricity. The proposed 20 megawatt (MW) CHP Plant would consist of two dual fuel (natural gas / fuel oil) - fired turbines with an electrical capacity of 7.6 MW, one 4.3 MW steam - driven turbine, two heat recovery steam generators, three high efficiency, low emissions dual fuel backup steam boilers, and one 1.5 MW standby diesel generator. A new steam distribution line would connect the CHP Plant to existing main steam lines. A proposed new high-pressure, natural gas line would also be installed, owned, and operated by a natural gas provider and would run from an existing transport line on Military Highway (U.S. Route 13) north along area roads through St. Juliens Creek Annex to the site of the proposed CHP Plant. All proposed construction would occur within previously developed areas of NNSY. Figure 1 shows the regional location of NNSY; Figure 2 depicts the locations of the proposed ECM construction projects; and Figure 3 and Figure 4 provide the focused location for the CHP Plant and IWTP, respectively.

Numerous non-construction ECMs, which primarily consist of upgrading and installing efficient energy systems and fixtures within existing facilities to manage and reduce energy consumption, are also proposed to be implemented at NNSY Mainsite and Scott Center, Southgate and St. Juliens Creek annexes. These ECMs involve no ground - disturbing activities, and would have no effect on a coastal use or resource of the Commonwealth's coastal zone. Therefore, they are not discussed further in this document.

REGULATORY BACKGROUND INFORMATION

The CZMA, codified in 16 United States Code Section 1451 (16 U.S.C. §1451) *et seq*. and administered by the Secretary of Commerce through the Office of Coastal Resources Management of the National Oceanic and Atmospheric Administration (NOAA), established a comprehensive regulatory scheme for effective management, beneficial use, protection, and development of the coastal zone and its natural resources. The CZMA encourages coastal states and provides a mechanism for them to develop, obtain Federal approval for, and implement a broad-based coastal management program.

Pursuant to Section 307 of CZMA (16 U.S.C. §1456), each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs. Pursuant to CZMA regulations, (15 CFR 930.30) all Federal agency activities with an "effect on any coastal use or resource" must be undertaken in a manner "consistent to the maximum extent practicable with the enforceable policies of approved management programs."

Federal approval of a state coastal management program triggers an obligation upon Federal agencies under CZMA Section 307 to make coastal consistency determinations for their activities. Section 307 applies to Federal agency activity in a state's coastal zone and to Federal agency activity outside the coastal zone, if the activity affects a land or water use in or natural resources of the coastal zone for which a Federal agency provides financial assistance. Such activity, whether direct, indirect, or cumulative, must be demonstrated to be consistent with the enforceable policies of the state's coastal management program, unless full consistency is otherwise prohibited by Federal law. There are no categorical exemptions to or exclusions from Section 307.

EFFECTS TEST DETERMINATION

In accordance with 15 CFR Part 930; Subpart C, the Navy reviewed its Proposed Action and has determined that the Proposed Action may have an effect on a coastal use or resource of the Commonwealth of Virginia's coastal zone. Specifically, the Navy has determined that the proposed Federal agency action is reasonably likely to affect a natural resource (e.g., Subaqueous Lands Management, Non-Point Source Pollution Control, Air Pollution Control, and Point Source Pollution Control) of the Commonwealth of Virginia's coastal zone. Therefore, the Navy has prepared this consistency determination rather than a "No – Effect" determination. However, the Navy would conduct the proposed activity in a manner that is fully consistent with the applicable enforceable policies of the Virginia Coastal Zone Management Program. The Coastal Consistency Determination is submitted under the CZMA and its implementing regulations, and Chief of Naval Operations (OPNAV) Instruction M-5090.1, "Environmental Readiness Manual."

VIRGINIA COASTAL ZONE MANAGEMENT PROGRAM

The nine enforceable policies of Virginia's Federally-approved coastal zone management program are: (1) fisheries management; (2) subaqueous lands management; (3) wetlands management; (4) primary coastal sand dunes management; (5) non - point source pollution control; (6) point source pollution control; (7) shoreline sanitation; (8) air pollution control; and (9) coastal lands management.

Although not required for the purposes of consistency, in accordance with 15 CFR 930.39(c), the Navy has also considered the advisory policies (recommendations) of the Virginia Coastal Zone Management Program. The Navy considered advisory policies for geographic areas of particular concern including coastal natural resource areas, coastal natural hazard areas, and waterfront development areas. The Proposed Action would have no direct or indirect effect on coastal natural resource areas. The Proposed Action is not located within a coastal natural hazard area such as a highly erodible area. The Proposed Action does not involve any waterfront development such as a port or fishing pier. Additionally, the Proposed Action would have no effect on advisory policies regarding: Virginia public beaches; Virginia Outdoors Plan; parks, natural areas and wildlife management areas; waterfront recreational land acquisition; or waterfront recreational facilities. Finally, the Proposed Action would have no effect on waterfront historic properties. The Navy has initiated consultation with the Virginia Department of Historic Resources' State Historic Preservation Officer (SHPO).

ANALYSIS OF ENFORCEABLE POLICIES

Enforceable Policies Applicable To The Proposed Action

Subaqueous Land Management
Pursuant to Code of Virginia §28.2-1200 through §28.2-1213, the VMRC administers a permit program for the use of State-owned submerged lands. The management program establishes conditions for granting or denying permits to use state - owned bottomlands based on considerations of potential effects on marine and fisheries resources, wetlands, adjacent or nearby properties, anticipated public and private benefits, and water quality standards established by the Virginia DEQ Water Division.

Consistency Analysis: The Proposed Action would include the installation of a natural gas pipeline primarily within the existing utility easement; however, the installation would cross under several creeks including St. Juliens Creek and Paradise Creek (see Figure 2). The line, which would be owned and operated by a natural gas provider, would be installed using horizontal directional boring to minimize excavation and disturbance to water resources. The appropriate permits to encroach over State - owned submerged lands would be secured prior to construction.

The Proposed Action would be fully consistent with the subaqueous lands management policy of the Virginia Coastal Zone Management Program.

Non-Point Source Pollution Control
Pursuant to Code of Virginia §62.1- 44.15:24 et seq. and §62.1- 44.15:51 et seq., the Virginia DEQ administers a program for the control of soil sedimentation and erosion into surface waters of the Chesapeake Bay, its tributaries, and other rivers and waters of the Commonwealth, and for reducing chemical inputs conveyed to water bodies by these processes.

Consistency Analysis: No surface waters are located in proximity to the construction projects under the Proposed Action; however, the Proposed Action does involve soil disturbing activities including the removal of an 8,000 - gallon underground spill containment tank that is no longer being utilized. Standard Best Management Practices (BMPs) for minimizing erosion and sedimentation impacts from construction would be undertaken prior to any construction activities and a Virginia Erosion and Sediment Control Plan would be adhered to during construction. The Proposed Action would not result in any increases in impervious surfaces because the new CHP Plant is proposed in the location of an existing paved, parking lot and the proposed IWTP would be constructed in the location of the existing IWTP.

The Proposed Action would be fully consistent with the non - point source pollution control policy of the Virginia Coastal Zone Management Program.

Air Pollution Control

Pursuant to Code of Virginia Code of Virginia §10-1.1300 through §10.1-1320 and the Clean Air Act (CAA) (42 U.S.C. §7401 et seq.), the Virginia DEQ implements a legally enforceable State Implementation Plan for the attainment and maintenance of the National Ambient Air Quality Standards (NAAQS). The State Air Pollution Control Board administers this program.

Consistency Analysis: The Proposed Action would include the construction and operation of a CHP Plant, a new stationary emissions source. A new permit would be required for operation of the CHP Plant. Construction activities under the Proposed Action would contribute to the annual air emissions inventory. The permit application was submitted to Virginia DEQ on May 14, 2019.

The CHP Plant requires a Prevention of Significant Deterioration (PSD) construction permit due to the emissions anticipated. Because the CHP Plant would be constructed and operated solely for NNSY, it would be incorporated into the NNSY Title V permit as a major modification. Operational emissions for the CHP Plant would be evaluated as part of the PSD permitting process in order to ensure that the facility would be in compliance with all relevant air quality standards. The emission sources must apply Best Available Control Technology (BACT) and perform a modeling analysis to demonstrate compliance with the NAAQS and the PSD increments. The issuance of a PSD permit would signify that the CHP Plant would demonstrate compliance with all ambient standards and would result in no significant deterioration of air quality in the area. Table 1 compares 2017 emissions at NNSY and the proposed maximum emissions once the CHP Plant is constructed and operational. Future year emissions assume that all other activity emissions at NNSY stay the same.

Table 1: Net Change Emissions Associated With The Proposed Action (Tons Per Year)

Activity	*VOC*	*CO*	*NO_x*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
2017 NNSY Emissions	29.39	2.50	10.08	0.0	6.13	5.94
Future NNSY Emissions with CHP	42.47	98.47	84.31	6.81	23.89	23.64
Net Change	**13.08**	**95.97**	**74.23**	**6.81**	**17.76**	**17.70**

The emissions generated under the Proposed Action would not violate Federal or Virginia air quality standards. Temporary and minor increases in air emissions from the combustion of fossil fuels by motorized equipment, operation of aircraft and ground vehicles, and from emissions of fugitive dust and dirt during site ground disturbance would be reduced through the implementation of BMPs. Fugitive dust from land-disturbing activities would be kept to a minimum using control methods outlined in 9VAC5-50-60 *et seq*. of the Regulations for the Control and Abatement of Air Pollution. Based on the emissions as outlined in Table 2 during the construction phase, most of the mobile source pollutant emissions are below what are considered the Title V insignificant emission rate of 5 tons per year for stationary sources, a rate below where minimal impacts are expected from stationary sources. For the only pollutant above this 5 tons per year threshold – CO, the NAAQS are much higher than all other NAAQS. As the area is currently attaining all NAAQS, the small emissions during construction phase should have no effect on the NAAQS in the area. Construction and annual operational emissions would not exceed *de minimis* levels under the CAA General Conformity Rule.

Table 2: Criteria Pollutant Construction Emissions (Tons Per Year)

Activity	*VOC*	*CO*	*NOx*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
Construction & Demolition	**0.47**	**6.91**	**3.37**	**0.05**	**0.19**	**0.19**

The Proposed Action would be fully consistent with the air pollution control policy of the Virginia Coastal Zone Management Program.

Point Source Pollution Control

Pursuant to Code of Virginia Code of Virginia §62.1-44.15 and the CWA (33 U.S.C. §1251 et seq.), the Virginia DEQ regulates discharges to state waters through the Virginia Pollution Discharge Elimination System (VPDES) and Virginia Pollution Abatement Permit programs. The point source program is administered by the State Water Control Board (Virginia DEQ) pursuant to Virginia Code §62.1-44.15. Point source pollution control is accomplished by implementing: (1) the National Pollutant Discharge Elimination System permit program established pursuant to Section 402 of the CWA and administered in Virginia as the VPDES permit program and (2) the Virginia Water Protection Permit program administered by Virginia DEQ and Water Quality Certification pursuant to Section 401 of the CWA.

Consistency Analysis: The Proposed Action would construct a new IWTP to replace the existing IWTP currently located at Building 1485 at NNSY Mainsite. The proposed IWTP would include two parallel batch treatment trains, each with a capacity of 1.35 million gallons per year, which can treat two different wastewater streams simultaneously using different treatment chemicals and methods. The wastewater treatment process would remain essentially the same as it is currently; the same treatment chemicals, batch processing, residence times, and test methods would continue to be used. The discharge permit and actual permitted contaminant discharge would not change; but, would remain the same as the existing plant. Treated effluent would be discharged to the Southern Branch of the Elizabeth River, as is currently done, or stored in a 10,000 - gallon non - potable tank included with the proposed IWTP. A relatively small percentage of the non - potable water would be re - used to wash down wastewater transport tanks and totes at the unloading area. After washing the tanks, the washdown water would be captured and then circulated back through the IWTP treatment process, making it a closed - loop system.

NNSY operates the IWTP under VPDES industrial permit VA0005215. Under VPDES permit VA0005215, NNSY maintains more than 75 permitted outfalls, most of which are stormwater outfalls, that empty into the Southern Branch of the Elizabeth River. Runoff from the western portion of the shipyard is routed to Paradise Creek. NNSY is not currently required to treat stormwater runoff. As part of NNSY's VPDES permit, outfalls for stormwater from industrial areas are monitored regularly for selected metals (e.g., copper and zinc), general water quality parameters (e.g., flow and pH), and other parameters depending on the outfall. BMPs would continue to be used at NNSY to control existing erosion and stormwater runoff. Any applicable permitting requirements would be satisfied in accordance with VPDES requirements.

The Proposed Action would be fully consistent with the point source pollution control policy of the Virginia Coastal Zone Management Program.

Enforceable Policies Not Applicable To The Proposed Action

The Navy reviewed the Virginia Coastal Zone Management Program to identify enforceable policies relevant to the Proposed Action. Table 3 presents the enforceable policies that the Navy has determined to be not applicable to the Navy's Proposed Action. For the reasons set forth therein, the enforceable policies listed in Table 3 are not addressed further.

Table 3: Enforceable Policies Of Virginia's Coastal Zone Management Program Not Applicable To The Proposed Action

Enforceable Policy	Policy Requirements	Consistency Analysis
Fisheries Management Virginia Code §28.2-200 through 713; §29.1-100 through 570; & §3.2-3935 through 3937	The program stresses the conservation & enhancement of finfish & shellfish resources & the promotion of commercial & recreational fisheries to maximize food production & recreational opportunities. This program is administered by the Virginia Marine Resources Commission (VMRC) & the Virginia Department of Game & Inland Fisheries. These agencies & the Virginia Department of Agriculture & Consumer Services, monitor boating activities to mitigate threats to marine animal species from the introduction tributyltin, a component found in certain types of boat paint.	***Not Applicable.*** The Proposed Action would have no direct or indirect impacts on commercial or recreational fisheries.
Wetlands Management Virginia Code §28.2-1301 through 1320 & §62.1-44.15.5	The VMRC administers a program for the protection of tidal wetlands; the Virginia DEQ administers a water protection permit program to include tidal & non-tidal wetlands.	***Not Applicable.*** The Proposed Action would include construction in previously developed, upland areas. As such, there would be no direct or indirect impacts on wetlands from implementing the Proposed Action.
Coastal Primary Sand Dunes Management Virginia Code §28.2-1400 through 1420	The VMRC administers a program to prevent the destruction and / or alteration of coastal primary sand dunes & beaches pursuant to the Coastal Primary Sand Dune Protection Act.	***Not Applicable.*** No aspect of the Proposed Action would occur on or adjacent to coastal primary dunes or beaches.
Shoreline Sanitation Virginia Code §32.1-164 through 165	The Virginia Department of Health regulates the storage, treatment, disposal, or reclamation of sewage or combined sewage industrial wastes, including septic tanks & alternative discharge sewage systems.	***Not Applicable.*** No septic tanks would be installed or demolished, & no sanitary wastewater would be discharged to the ground under the Proposed Action.
Coastal Lands Management Virginia Code §62.1-44.15:67 through 62.1-44.15:79; & 9 VAC 25-830-10 et seq.	Administered by the Chesapeake Bay Local Assistance Department, the Chesapeake Bay Preservation Act guides land development in coastal areas to protect the Chesapeake Bay & its tributaries. Coastal lands management is conducted by state & local cooperative programs administered by Virginia DEQ's Water Division established pursuant to the Chesapeake Bay Preservation Act & Chesapeake Bay Preservation Area Designation & Management Regulations. The Chesapeake Bay Preservation Area Designation & Management Regulations require localities in Tidewater Virginia to establish local protection ordinance designating Chesapeake Bay Resource Protection Areas (RPAs) or Resource Management Areas (RMAs).	***Not Applicable.*** As a federal installation, Chesapeake Bay Preservation Area overlays are not applicable to NNSY. Accordingly, no designated RPAs or RMAs exist at NNSY.

Conclusions

Based on the foregoing analysis, the Navy has determined that the proposed Federal activity is reasonably likely to affect a coastal use or resource of the Commonwealth of Virginia's coastal zone pursuant to the CZMA. However, the Navy will implement the Proposed Action in a manner that is fully consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

Mary Stuck
Mary Stuck
Installation Environmental Program Director
By Direction of the Commander

6/7/19
Date

7

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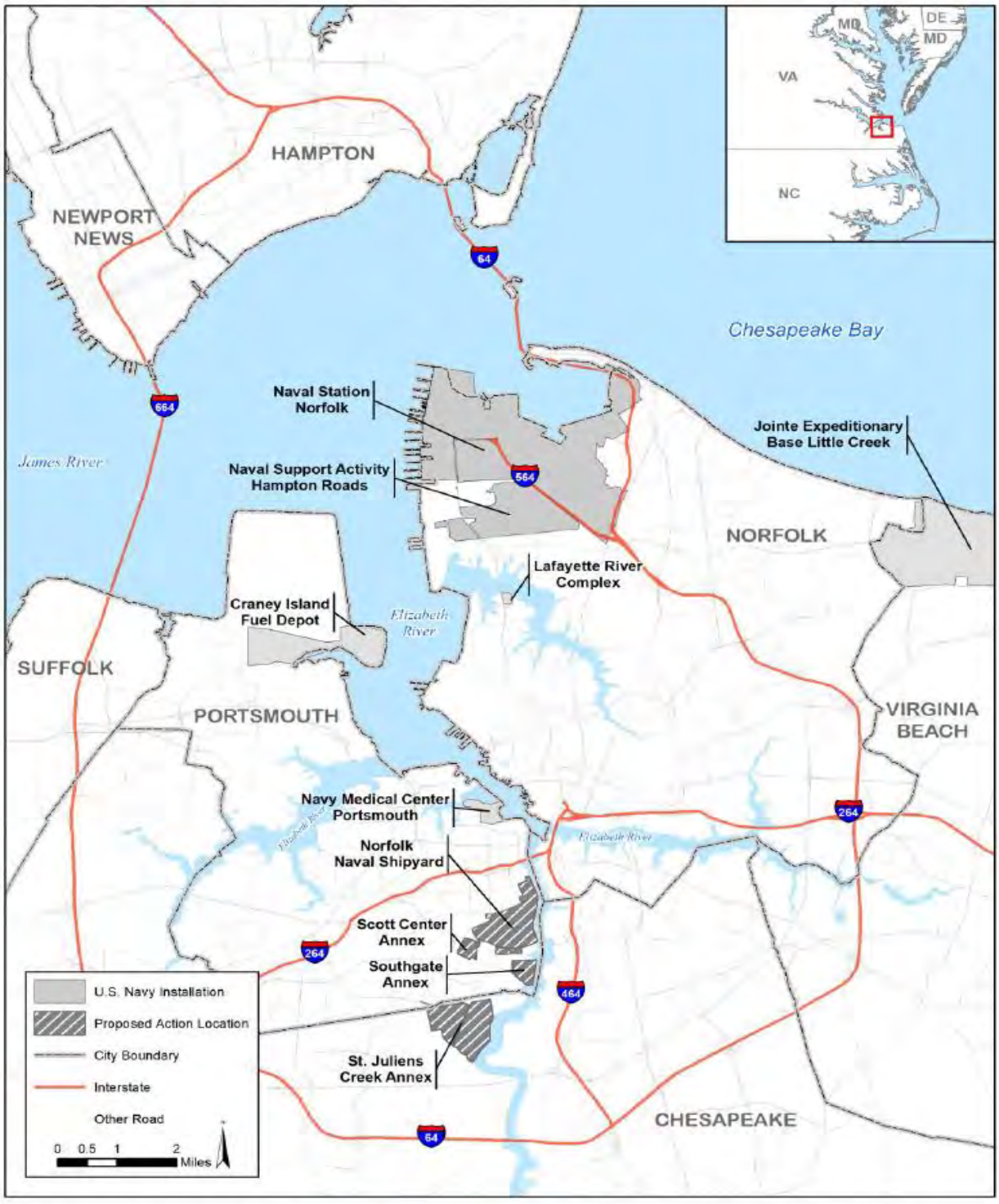

Figure 1: Location Of Norfolk Naval Shipyard In The Hampton Roads Region

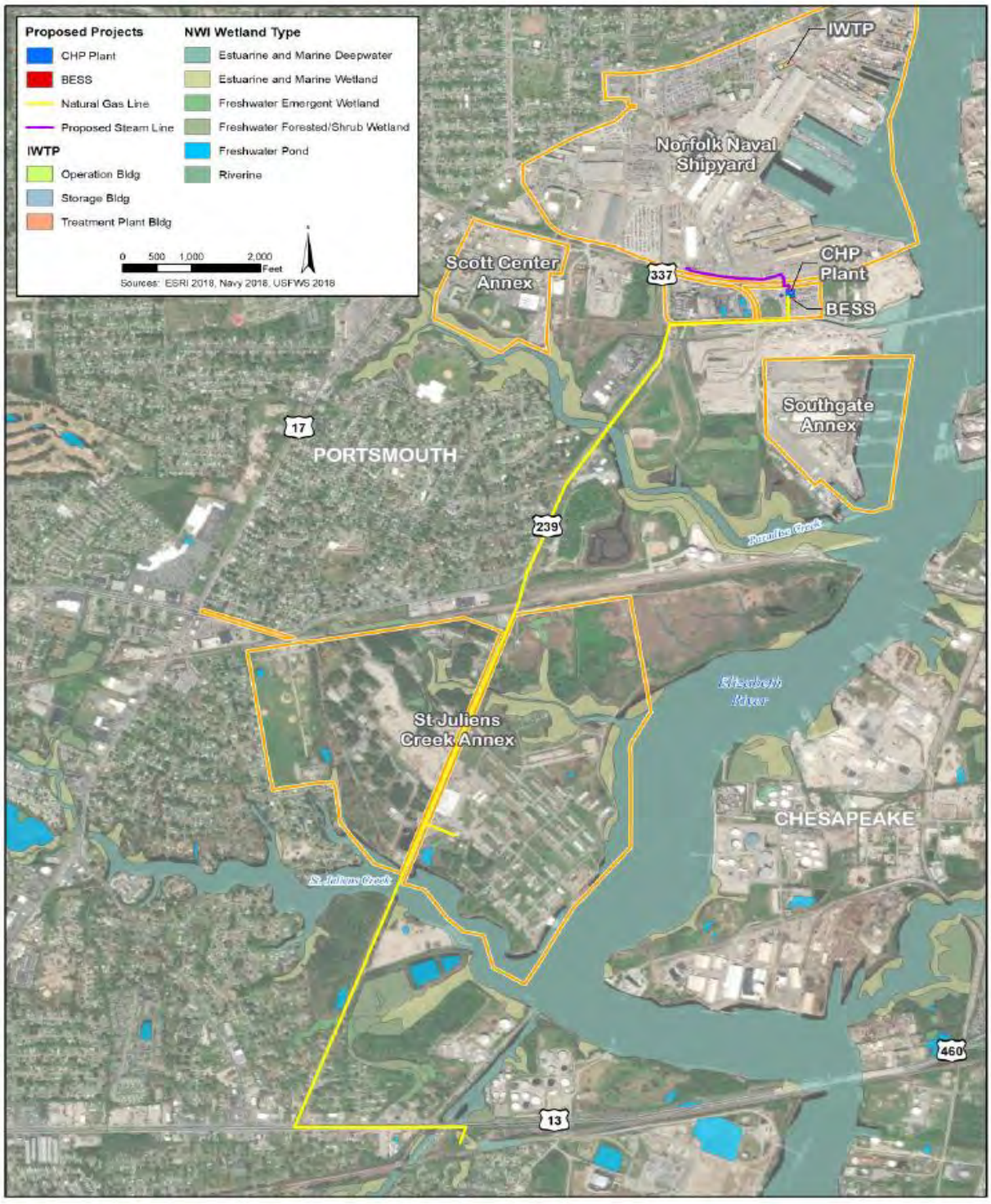

Figure 2: Locations Of The Proposed ECM Construction Projects

Figure 3: Locations Of The Proposed Combined Heat & Power Plant, & Battery Energy Storage System

Figure 4: Locations Of The Existing & Proposed Industrial Wastewater Treatment Plant

Subject: Re: Federal Coastal Consistency Determination for Implementation of Energy Conservation Measures at Norfolk Naval Shipyard.

From: valerie.fulcher@deq.virginia.gov <valerie.fulcher@deq.virginia.gov>
On Behalf Of Environmental Impact Review, rr
Sent: Monday, June 10, 2019 10:55 am
To: Peeling, Rebecca R CIV USN NAVFAC MIDLANT NOR (US) <rebecca.peeling@navy.mil>
Cc: Stuck, Mary M CIV USN NAVFAC MIDLANT NOR (USA) <mary.stuck@navy.mil>;
Krause, David J CIV USN NAVFAC MIDLANT NOR (US) <david.j.krause1@navy.mil>
Subject: Re: Federal Coastal Consistency Determination For Implementation Of Energy Conservation Measures at Norfolk Naval Shipyard.

Good morning: I've downloaded the project and forwarded it for staff assignment.
Once the project is set up and sent to reviewers, you'll find it noted on our Current Projects webpage (which includes the name of the staff contact):

http://www.deq.virginia.gov/Programs/EnvironmentalImpactReview/CurrentProjects.aspx

Valerie A. Fulcher, CAP, OM, Environmental Program Specialist
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http://www.deq.virginia.gov/Programs/EnvironmentalImpactReview.aspx
For program updates and public notices please subscribe to the OEIR News Feed

---

> On Mon, Jun 10, 2019 at 10:11 AM Peeling, Rebecca R CIV USN NAVFAC MIDLANT NOR (US) wrote:
>
> Good Morning,
> I am submitting a Federal Coastal Consistency Determination for Implementation of Energy Conservation Measures at Norfolk Naval Shipyard.
>
> Through the submittal instructions on the DEQ website, it is my understanding this could be submitted through eMail. However, if that is incorrect please let me know and I will submit the document through the proper channels.
>
> If you have, any questions or concerns please feel free to contact me.
> V/R
> Rebecca Peeling
> NNSY Portsmouth, VA – CR / NEPA / NR Program Manager
> (757) 334 - 1180

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APPENDIX E:
ECMs Project Descriptions, Building Numbers, Site Locations, & Applicable Level Of NEPA Analysis

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Table E-1: ECM Project Description, Building, Site Location, & Applicable Level Of NEPA Analysis

ECM Number	ECM Title	ECM Measure	Description Of Activity	Building Number Or Site Location	Level Of NEPA Analysis
8	**Steam Distribution Upgrades**	8.1	Repair insulation on steam pipe & fittings in 74 buildings; use insulating jackets at NNSY Mainsite & Scott Center Annex	9, 11, 13, 14, 15, 16, 17, 19, 22, 23, 29, 30, 31, 32, 33, 37, 39, 42, 51, 59, 60, 61, 62, 65, 73, 74, 163, 171, 172, 174, 184, 202, 234, 234A, 235, 236, 260, 261, 262, 268, 270, 271, 273, 274, 277, 278, 279, 280, 297, 298, 300, 306, 310, 369, 403, 414, 463, 464, 510, 522, 599, 1436, 1484, 1485, 1499, 1500, 1504, 1526, 1539, 1575, 1585, 1590, 1593, & M-22	**Categorical Exclusion (CatEx) 15 [1]: The modification of existing systems or equipment when the environmental effects will remain substantially the same & the use is consistent with applicable regulations.**
		8.4	Replace failed steam traps in 70 buildings at NNSY Mainsite, Scott Center, & St. Juliens Creek annexes	NNSY Mainside, & Scott Center - 11, 13, 15, 16, 19, 22, 31, 32, 37, 39, 42, 51, 59, 61, 73, 74, 163, 171, 172, 174, 184, 202, 234, 235, 236, 260, 268, 269, 270, 274, 276, 279, 280, 297, 298, 299, 300, 310, 369, 414, 463, 464, 510, 522, 599, 1329, 1484, 1499, 1500, 1531, 1575, 1585, 1590, & M-22 St. Juliens Creek Annex - 2, 6, 16, 17, 18, 43, 75, 80, 165, 166, 167, 171, 172, 185, 1556, & M-5	**CatEx 15**
		8.5	Repair steam leaks by fixing valves or replacing faulty sections of pipe at NNSY Mainsite. Replace Service Area 2's overhead steam distribution piping. Install new concrete piers for the overhead steam pipe supports for a new steam line.	NNSY Mainsite & St. Juliens Creek Annex	**CatEx 15**

ECM Number	ECM Title	ECM Measure	Description Of Activity	Building Number Or Site Location	Level Of NEPA Analysis
10	**Energy Security**	10.1	Construct a Combined Heat & Power (CHP) Plant at NNSY; including the installation of a new high - pressure natural gas pipeline; & a dual fuel burner with controls, to a Navy - installed, boiler, in Building 283 at St. Julien's.	Site of CHP - Vehicular parking lot on south side of NNSY; Natural Gas Pipeline - Military Highway (U.S. Route 13) North along area roads through St. Juliens Creek Annex to site of the proposed CHP Plant, with short extension to St. Juliens Creek Annex boiler plant.	**Environmental Assessment (EA)**
		10.2	Install a Micro - grid Control System (MCS) & Battery Energy Storage System (BESS) next to proposed CHP plant at NNSY.	Vehicular parking lot on south side of NNSY.	**EA**
14	**Transformer Modernization**	14	Replace 282 dry - type transformers with high efficiency models in 33 buildings throughout NNSY Mainsite.	22, 37, 61, 62, 163, 171, 172, 174, 184, 202, 234, 235, 236, 268, 270, 277, 297, 298, 369, 464, 508, 510, 1460, 1485,1499, 1500, 1502, 1505, 1557, 1593, 1594, 22A, & C222	**CatEx 15**
16	**Industrial Wastewater Treatment Plant**	16	Construct a new Industrial Wastewater Treatment Plant (IWTP) at NNSY to replace the existing IWTP, at the same location.	1250, 1485, 1586, & 1587	**EA**

Note: [1] - The Department of the Navy (Navy) proposes to revise portions of its internal regulations, that establish the responsibilities & procedures for complying with the National Environmental Policy Act (NEPA). The proposed rule revises the Navy's implementing regulations, 32 CFR Part 775, that were originally published on August 20, 1990, & revised on February 23, 2004.
The 2004 rule change changed, revised & added to Navy's list of approved Categorical Exclusions (CatExes).
The 2019 proposed rule change clarifies what types of activities fall under CatExes, which normally do not require additional NEPA analysis. Under the proposed rule change, CatEx # 14, & CatEx # 15 would be combined into a single CatEx # 14.
As the proposed rule is currently under review & has not been implemented; CatEx # 15 is presently the correct CatEx for several of this NNSY IECM EA's ECMs.

Table E-2: ECM Operations, Maintenance, Repair, & Replacement Responsibilities, & Rationales

ECM Number	ECM Title [1]	Operational Responsibility	Maintenance Responsibility	Repair & Replacement Responsibility	Rationale For Government Maintenance And / Or Repair & Replacement Responsibility
8	**Steam Distribution Upgrades:**				
8.1	**Insulate Steam Pipe & Fittings**	***Government***	**Contractor**	***Government***	The need to repair or replace insulation is most often due to one of two reasons: 1) Insulation being removed to perform maintenance activities on equipment & being damaged while being removed, or 2) Pipe leaks lead to saturation of insulation & deterioration. Neither of these causes is predictable at any regular interval, & therefore determining an annual cost of R&R with any degree of accuracy is exceedingly difficult. The frequency of insulation failure due to these causes is also low, representing a small risk to the Government. Therefore, the Government will retain R&R responsibility. However, the Contractor is responsible for performing an annual survey of removable insulating blankets and re - installing any blankets that are found to have been removed or improperly re - installed.
8.4	**Replace Failed Steam Traps**	***Government***	**Contractor**	**Contractor**	**N / A**
8.5	**Steam Line Replacements** **(St. Julien's Creek Annex)**	***Government***	***Government***	***Government***	The scope of this ECM is the like – for - like replacement of an existing steam distribution system, which is currently maintained & repaired by the Government. Because the Government currently has the staff & budget to maintain the system, the responsibility will remain with the Government. Additionally, the project would not be able to support the additional cost if the Contractor were to take over maintenance, & R&R.
10	**Energy Security:**				
10.1	**Combined Heat & Power (CHP) Plant**	**Contractor**	**Contractor**	**Contractor**	**N / A [2]**
10.2	**Boiler Plant Improvements** **(St. Julien's Creek Annex)**	***Government***	**Contractor**	**Contractor**	**N / A**

ECM Number	ECM Title [1]	Operational Responsibility	Maintenance Responsibility	Repair & Replacement Responsibility	Rationale For Government Maintenance And / Or Repair & Replacement Responsibility
14	**Transformers Replacements**	***Government***	***Government***	***Government***	Dry - type transformers require little to no maintenance. Additionally, the transformers will include a 32 year material warranty. Assumption of maintenance, & R&R represents a very small risk to the Government, & the Government is currently maintaining all transformers that will be replaced under the scope of this measure.
16	**Industrial Wastewater Treatment Plant (IWTP)**	***Government***	***Government***	***Government***	The existing IWTP that will be replaced, under the scope of this measure, is currently operated, maintained, & repaired by the Government. The plant is fully staffed with an operations team with the specialized knowledge needed to operate, & maintain an Industrial Wastewater Treatment Plant. The existing Government team will continue to operate, & maintain the plant. Furthermore, the project could not support the added cost of having the Contractor assume maintenance, & R&R responsibility.

Notes: [1] – The Contractor will provide O&M Manuals, Instructions, & recommended schedules for each ECM.
[2] – The CHP Plant will be operated by the Contractor; however, the Navy is responsible for providing:
1) A qualified NG Procurement Manager, to serve as POC for the Plant Manager;
2) All utility costs.

APPENDIX F:
Air Quality Calculations

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TAB A. NNSY ECM PROJECT EMISSIONS

Project Name	Type (Renov or Const)	FootPrint (AC)	Grading (sf)	Demo Bldgs (SF)	Demo asphalt/ concrete (SF)
CONSTRUCTION PROJECTS					
BESS	Construction	0.05	2,100	N/A	N/A
CHP Plant	Construction	0.69	30,056	N/A	30,000
500,000 gallon fuel tank	Construction	0.32	13,939	N/A	13,939
IWTP	Construction	1	37,160	20,000	22,620

Project Name	Site Prep - Excavate/Fill (CY)	Trenching (LF)	Building Construction - Total Size (sf)	Building Construction- foundation footprint (sf)	# Stories
CONSTRUCTION PROJECTS					
BESS	78	N/A	2,100	2,100	1
CHP Plant	2,160	16,000	30,000	30,000	2
500,000 gallon fuel tank	1,342	150	N/A	N/A	N/A
IWTP	1,579	N/A	22,620	17,160	2

Project Name	Paving - Surface area (SF)	Pavement type, vehicle or aircraft	Paving - HMA (CF)	Sidewalks, etc (cy)	Gravel Work (CY)	Concrete Work - foundation (CY)
CONSTRUCTION PROJECTS						
BESS	N/A	N/A	N/A	N/A	39	78
CHP Plant	N/A	vehicle	N/A	111	1,145	2,222
500,000 gallon fuel tank	N/A	N/A	N/A	N/A	1,033	1,094
IWTP	20,000	vehicle	6,667	N/A	666	838

75 foot diameter for tank
38 ft tall
133 ft diameter of
4 ft berm height
5 ft berm width
418 ft is length of berm
8360 cubic feet
310 cubic yards

30 ft pile depth
2 ft piles
300 total
4 ft elevation
8 holes/day productivity rate

BESS

2,100 sf bldg
78 cy excavation
78 cy concrete
39 cy gravel
2,100 grading

2 months construction duration
6 trucks of dirt hauled out
9 concrete trucks
4 trucks of gravel hauled in
40 Material Deliveries

CHP Plant

30,000 sf bldg
30,056 sf grading
2,160 cy excavation
2,333 cy concrete
1,145 cy gravel
300 30' piles
16,000 ft trenching

18 months construction duration
360 Material Deliveries
180 trucks of dirt hauled out
194 concrete trucks
95 trucks of gravel hauled in
100 truck trips delivery

500,000 gallon fuel tank

13,939 sf grading
1,342 cy excavation
1,094 cy concrete
1,033 cy gravel
150 ft trenching

3 months construction duration
112 trucks of dirt hauled out
91 concrete trucks
91 trucks of gravel hauled in
60 Material Deliveries

IWTP

22,620 sf bldg
37,160 sf grading
1,579 cy excavation
838 cy concrete
666 CY gravel
247 cy asphalt

18 months construction duration
360 Material Deliveries
132 trucks of dirt hauled out
70 concrete trucks
55 trucks of gravel hauled in
21 trucks of asphalt hauled in

Demolish asphalt/concrete	66,559 sf	2 month demolition
	1,849 CY demolition debris	185 Truck loads demolition debris
Demolish old IWTP	20,000 sf	2 month demolition
Assume 1 CY construction debris per 20 SF of building		
	1,000 CY demolition debris	100 Truck loads demolition debris

	Total Truck Trips
Dirt	430
Concrete	364
Gravel	246
Asphalt	21
Demo Debris	285
Materials Delivery	820
Grand Total Truck Trips	2,165
Ave # Truck Trip/Day	9

CY material brought in	CY material taken out
7,473	8,008

Trenching area SF	24225
Material removed	449 CY
Total new Bldg SF	52,620
area to be graded SF	83,255
excavation	5,159 cy
asphalt/concrete & gravel	7,473 cy
bldg demo CY	1,000
bldg demo SF	20,000
Other demo CY	1,849
Other demo SF	66,559
Total demo SF	86,559
Paving area	20,000

Basic Conversions

453.59	grams per pound
43,560	Conversion from Acre to SF
0.03704	Cubic feet to Cubic Yards
0.1111	Square Feet to Square Yards
1.4	tons/CY for Gravel
80,000	lbs/Truck Load for Delivery
1.66	CY for each CY of asphalt/concrete demo
0.333333333	asphalt thickness for demolition
0.333333333	asphalt thickness for pavement
2000	pounds per ton
145	lb/ft³ density of Hot Mix Asphalt
0.666666667	asphalt thickness for pavement on runways

Excavate/Fill (CY)	5,159 CY	5,608 CY hauled
Trenching (LF)	16,150 LF	449 CY
Grading (SY)	9,251 SY	

Table 1. Site Prep

Off-road Equipment	Hours	Engine HP	Load Factor	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO_2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO_2 g/hp-hr
Excavator	57	243	0.59	0.34	1.21	4.03	0.12	0.22	0.22	536
Skid Steer Loader	100	160	0.23	0.38	1.47	4.34	0.12	0.31	0.30	536
Dozer (Rubber Tired)	19	145	0.59	0.38	1.41	4.17	0.12	0.30	0.29	536
Compactor	20	103	0.58	0.40	1.57	4.57	0.12	0.32	0.31	536
Grader	4	285	0.58	0.34	1.21	4.07	0.12	0.23	0.22	536
Backhoe/Loader	6	87	0.59	0.35	1.25	4.23	0.12	0.24	0.23	536

	VOC lb	CO lb	NOx lb	SO2 lb	PM lb	PM2.5 lb	CO_2 lb
Excavator	4.02	14.14	47.12	1.35	2.61	2.53	6,266.00
Skid Steer Loader	3.11	11.93	35.20	0.93	2.48	2.40	4,345.92
Dozer (Rubber Tired)	1.35	5.07	14.96	0.41	1.06	1.03	1,919.66
Compactor	1.04	4.14	12.03	0.30	0.84	0.82	1,410.91
Grader	0.50	1.76	5.93	0.17	0.33	0.32	781.02
Backhoe/loader	0.24	0.85	2.87	0.08	0.16	0.16	363.78
Subtotal in lb:	10	38	118	3	7	7	15,087
Site Prep Grand Total in Tons	0.01	0.02	0.06	0.00	0.00	0.00	
Site Prep Grand Total in Metric Tons							7

49,260 SF Foundation
Table 2. Building Construction 54,720 SF Total

Off-road Equipment	Hours of Operation	Engine HP	Load Factor	Emission Factors VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO_2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO_2 g/hp-hr
Crane	274	330	0.58	0.25	1.22	5.26	0.11	0.21	0.20	530
Concrete Truck	274	300	0.43	0.19	1.45	4.32	0.12	0.21	0.20	536
Diesel Generator	219	40	0.43	0.26	1.41	3.51	0.11	0.23	0.22	536
Telehandler	547	99	0.59	0.51	3.94	4.93	0.13	0.52	0.51	595
Scissors Lift	438	83	0.59	0.51	3.94	4.93	0.13	0.52	0.51	595
Skid Steer Loader	274	67	0.59	1.69	7.97	6.70	0.15	1.19	1.15	691
Auger	300	260	0.43	0.46	1.55	5.90	0.11	0.31	0.30	530
All Terrain Forklift	11	84	0.59	0.51	3.94	4.93	0.13	0.52	0.51	595

	Annual Emissions VOC lb	CO lb	NOx lb	SO2 lb	PM lb	PM2.5 lb	CO_2 lb
Crane	28.41	141.00	608.13	13.19	24.02	23.30	61312.58
Concrete Truck	14.62	113.35	336.69	8.99	16.37	15.88	41788.26
Diesel Generator	2.18	11.70	29.13	0.90	1.93	1.87	4452.79
Telehandler	35.89	277.51	347.19	9.01	36.71	35.61	41883.78
Scissors Lift	24.09	186.30	233.08	6.05	24.64	23.90	28117.43
Skid Steer Loader	40.41	190.26	159.94	3.55	28.40	27.54	16497.25
Auger	34.31	114.75	436.41	8.42	23.21	22.51	39163.19
All Terrain Forklift	0.61	4.74	5.92	0.15	0.63	0.61	714.65
Subtotal (lbs):	181	1040	2156	50	156	151	238930
Building Construction Grand Total in Tons	0.09	0.52	1.08	0.03	0.08	0.08	
Building Construction Grand Total in Metric Tons							106

Table 3. Gravel Work 2,883 CY

Off-road Equipment	Hours	Engine HP	Load Factor	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO_2 g/hp-hr	PM_{10} g/hp-hr	$PM_{2.5}$ g/hp-hr	CO_2 g/hp-hr
Dozer	29	185	0.59	0.34	1.21	4.08	0.12	0.23	0.22	536
Wheel Loader for Spreading	36	87	0.59	0.35	1.25	4.23	0.12	0.24	0.23	536
Compactor	80	103	0.43	0.36	1.34	4.45	0.12	0.26	0.25	536

	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO_2 lb
Dozer	2.40	8.43	28.47	0.80	1.58	1.53	3738.98
Wheel Loader for Spreading	1.42	5.09	17.25	0.47	0.97	0.94	2182.69
Compactor	2.81	10.46	34.77	0.90	2.01	1.95	4184.92
Subtotal (lbs):	7	24	80	2	5	4	10,107
Gravel Work Grand Total in Tons	0.00	0.01	0.04	0.00	0.00	0.00	
Gravel Work Grand Total in Metric Tons							5

Table 4. Concrete Work Concrete Surface 3,249 CY

[1]Off-road Equipment	[2]Cumulative Hours of Operation	[3]Engine HP	[4]Load Factor	[5,7]Emission Factors VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO_2 g/hp-hr	PM10 g/hp-hr	PM2.5 g/hp-hr	CO_2 g/hp-hr
Concrete Mixer	171	35	0.43	0.69	3.04	6.17	0.13	0.54	0.52	588
Concrete Truck	155	300	0.43	0.38	1.75	6.18	0.11	0.27	0.26	530

	Annual Emissions VOC lb	CO lb	NOx lb	SO2 lb	PM lb	PM2.5 lb	CO_2 lb
	0.39	1.73	3.50	0.07	0.31	0.30	333.95
	16.70	76.81	272.03	5.02	11.82	11.47	23,315.51
Concrete Construction Grand Total in Tons	0.01	0.04	0.14	0.00	0.01	0.01	
Concrete Construction Grand Total in Metric Tons							11

Pavement - Surface Area 20,000 SF 247 CY

Table 5. Paving Paving - HMA 6,667 CF

Off-road Equipment	Hours of Operation	Engine HP	Load Factor	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO2 g/hp-hr	PM g/hp-hr	PM2.5 g/hp-hr	CO_2 g/hp-hr
Grader	61	145	0.59	0.38	1.41	4.16	0.12	0.30	0.29	536
Roller	92	401	0.59	0.34	2.46	5.53	0.12	0.34	0.33	536
Paving Machine	123	164	0.59	0.38	1.44	4.25	0.12	0.30	0.29	536
Asphalt Curbing Machine	12	130	0.59	0.40	1.57	4.57	0.13	0.32	0.31	536
				VOC lb	CO lb	NOx lb	SO2 lb	PM lb	PM2.5 lb	CO_2 lb
			Grader	4.33	16.25	47.88	1.33	3.40	3.30	6,163.12
			Roller	16.38	118.18	265.60	5.53	16.25	15.77	25,711.11
			Paving Machine	9.97	37.85	111.57	3.02	7.87	7.64	14,055.38
			Asphalt Curbing Machine	0.80	3.19	9.26	0.23	0.65	0.63	1,086.88

Hot Mix Asphalt (HMA)	Volume of HMA (ft^3)	Weight of HMA [tons]	VOC lb/ton of asphalt	VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO_2 lb
Standard Hot Mix Asphalt	6,667	4,474	0.04	178.95	-	-	-	-	-	-
			Subtotal (lbs):	210	175	434	10	28	27	47,016
			Paving Grand Total in Tons	0.11	0.09	0.22	0.01	0.01	0.01	
			Paving Grand Total in Metric Tons							21

Table 6. Building Demolition 20,000 SF 1,000 Estimated CY of debris based on 20 SF/CY

Off-road Equipment	Hours of Operation	Engine HP	Load Factor	Emission Factors VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO_2 g/hp-hr	PM_{10} g/hp-hr	$PM_{2.5}$ g/hp-hr	CO_2 g/hp-hr
Hydraulic excavator	167	86	0.59	0.23	2.57	2.68	0.11	0.40	0.39	595.46
Wheel Loader w/ Integral Backhoe	167	87	0.23	1.07	6.13	5.02	0.14	0.95	0.92	692.77
Wheel mounted air compressor	167	49	0.59	0.26	1.41	3.51	0.11	0.23	0.22	536.20
				Annual Emissions VOC lb	CO lb	NOx lb	SO_2 lb	PM_{10} lb	$PM_{2.5}$ lb	CO_2 lb
			Hydraulic excavator	4.28	48.02	50.07	2.12	7.53	7.30	11,123.94
			Wheel Loader w/ Integral Backhoe	7.88	45.14	36.99	1.04	6.99	6.78	5,103.73
			Wheel mounted air compressor	2.79	15.00	37.34	1.15	2.47	2.39	5,707.22
			Subtotal (lbs):	14.93	108.16	124.41	4.31	16.99	16.48	21934.88
			Building Demo Grand Total in Tons	0.007	0.054	0.062	0.002	0.008	0.008	
			Building Demo Grand Total in Metric Tons							10

Table 7. Asphalt/Concrete Demolition 66,559 SF

Off-road Equipment	Hours of Operation	Engine HP	Load Factor	Emission Factors VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	SO_2 g/hp-hr	PM_{10} g/hp-hr	$PM_{2.5}$ g/hp-hr	CO_2 g/hp-hr
Crawler Dozer w/attachments	242	125	0.58	0.34	1.21	4.08	0.12	0.23	0.22	535.79
Air Compressor	242	49	0.59	0.33	2.54	4.53	0.13	0.54	0.53	595.16
Excavator	55	380	0.59	0.31	2.50	4.51	0.13	0.55	0.54	595.21
				Annual Emissions VOC lb	CO lb	NOx lb	SO_2 lb	PM_{10} lb	$PM_{2.5}$ lb	CO_2 lb
			Crawler Dozer w/attachments	13.30	46.70	157.82	4.46	8.74	8.48	20724.51
			Wheel mounted air compressor	5.05	39.20	69.83	1.97	8.36	8.11	9179.88
			Excavator	8.49	67.88	122.52	3.48	15.00	14.55	16181.02
			Subtotal (lbs):	27	154	350	10	32	31	46085
			Asphalt Demo Grand Total in Tons	0.01	0.08	0.18	0.00	0.02	0.02	
			Asphalt Demo Grand Total in Metric Tons							21

Table 8. Annual Construction Worker POVs 48 workers on site on average, assume 20% carpool 16 Miles/trip

Year	Vehicle Miles	VOCs lb/mi	CO lb/mi	NOx lb/mi	SO_2 lb/mi	PM_{10} lb/mi	$PM_{2.5}$ lb/mi	CO_2 g/mi	CH_4 g/mi	N_2O g/mi
Construction & Demo	321,820	0.00129	0.03881	0.00510	0.00001	0.00021	0.00019	364.00	0.031	0.032
			VOCs ton/year	CO ton/year	NOx ton/year	SO_2 ton/year	PM_{10} ton/year	$PM_{2.5}$ ton/year	CO_2e metric ton/year	
			0.207	5.923	0.820	0.002	0.034	0.031	120	

Table 9. Truck Hauling — 1,801 trips — Assume 20 mi RT

On-road Equipment	Miles	Engine HP	VOC lb/mile	CO lb/mile	NOx lb/mile	SO_2 lb/mile	PM_{10} lb/mile	$PM_{2.5}$ lb/mile	CO_2 lb/mile
Dump Truck	36,028	230	0.0015	0.0080	0.0361	0.0000	0.0015	0.0015	3.4385
			VOC lb	CO lb	NOx lb	SO2 lb	PM10 lb	PM2.5 lb	CO_2 lb
		Dump Truck	54.81	289.73	1299.52	0.65	54.20	52.52	123,882
			0.03	0.14	0.65	0.00	0.03	0.03	
									56

Table 10. Concrete Truck — 364 trips — Assume 20 mi RT

On-road Equipment	Miles	Engine HP	VOC lb/mile	CO lb/mile	NOx lb/mile	SO2 lb/mile	PM10 lb/mile	PM2.5 lb/mile	CO2 lb/mile
Concrete Truck - trips	7,282	230	0.001521	0.008042	0.036070	1.80E-05	0.001504	0.001458	3.438541
			VOC lb	CO lb	NOx lb	SO2 lb	PM lb	PM2.5 lb	CO_2 lb
		Concrete Truc	11.08	58.56	262.67	0.13	10.96	10.62	25,040
			0.01	0.03	0.13	0.00	0.01	0.01	
									11

Table 11. NNSY Construction/Demolition Annual Estimated Air Emissions

	VOC T/yr	CO T/yr	NOx T/yr	SO_2 T/yr	PM_{10} T/yr	$PM_{2.5}$ T/yr	CO_2 MT/yr
Construction & Demolition	0.47	6.91	3.37	0.05	0.19	0.19	368

Turbine operation
EFs from AP-42, Table 3.1-1
and 3.1-2

2,315,595	MMBtu/yr	Natural Gas	137,152	MMBtu/yr Fuel Oil
110	lb CO2/MMB	burning Natural Gas	157	lb CO2/MMBtu
127,358	Tons CO2/yr		10,766	Tons CO2/yr
115,537	metric Tons CO2/yr		9,767	metric Tons CO2/yr
0.003	lb N2O/mmBtu		ND	
3	Tons N2O/yr			
3	metric Tons N2O/yr			
0.0086	lb methane/mmBtu		ND	
10	Tons methane/yr			
9	metric Tons methane/yr			
116,666	**metric Tons CO2e/yr**			

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ENVIRONMENTAL ASSESSMENT
FOR
IMPLEMENTATION OF ENERGY CONSERVATION MEASURES
AT
NORFOLK NAVAL SHIPYARD, PORTSMOUTH, VIRGINIA