Environmental Impact Statement For Proposed Land Acquisition

At Washington Navy Yard, Washington, D.C.

Draft | October 2022

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DRAFT

ENVIRONMENTAL IMPACT STATEMENT

For

PROPOSED LAND ACQUISITION

At

WASHINGTON NAVY YARD, WASHINGTON D.C.

October 2022

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Abstract

Designation:	Draft Environmental Impact Statement
Title of Proposed Action:	Proposed Land Acquisition at Washington Navy Yard
Project Location:	Washington Navy Yard, Washington, D.C.
Lead Agency for the EIS:	Department of the Navy
Affected Region:	Washington, D.C.
Action Proponent:	Naval District Washington
Point of Contact:	Nicole Tompkins-Flagg NAVFAC Washington Washington Navy Yard 1314 Harwood Street SE Washington, D.C., 20374 nicole.m.tompkins-flagg.civ@us.navy.mil
Date:	October 2022
Date Navy Must Receive Comments:	December 2, 2022

Naval District Washington, a Command of the U.S. Navy (hereinafter referred to as the Navy), has prepared this Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA), and Council on Environmental Quality and Navy NEPA regulations. The Navy proposes to obtain approximately 6 acres of land at the Southeast Federal Center (SEFC) E Parcels to improve the overall antiterrorism (AT) posture of the Washington Navy Yard (WNY). Encroachment at the WNY is an immediate concern because of proposed incompatible private development currently scheduled and approved for construction on the SEFC E Parcels, adjacent to the northwest perimeter of the WNY. By obtaining the SEFC E Parcels the Navy would: improve the WNY AT posture by reducing the encroachment threat by the planned, private development on the SEFC E Parcels; protect mission-critical activities conducted at the WNY from visual surveillance and acoustic and electronic eavesdropping; and enhance the overall safety of personnel, facilities, and infrastructure at the WNY. Should the Navy obtain ownership through a federal-to-federal transfer of the SEFC E Parcels from U.S. General Services Administration, the Navy is considering three alternative uses for the acquired property: construction of a relocated Navy Museum, construction of administrative facilities, or maintaining the status quo (no new development). This EIS evaluates potential environmental impacts associated with Alternative 1: Land Acquisition through Land Exchange, Alternative 2: Direct Land Acquisition, and the No Action Alternative. The following resource areas were evaluated: transportation; cultural resources; land use/zoning; hazardous materials and wastes; water resources; construction noise; air quality; socioeconomics; environmental justice; utilities and infrastructure; and cumulative impacts.

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EXECUTIVE SUMMARY

ES.1 Proposed Action

Naval District Washington (NDW[1]), a Command of the United States (U.S.) Navy (hereinafter referred to as the Navy) proposes to obtain approximately 6 acres of land at the Southeast Federal Center (SEFC) (Parcels E1, E2, E3, and E4[2]) to improve the overall antiterrorism (AT) posture of the Washington Navy Yard (WNY), Washington, District of Columbia (D.C.). Encroachment at the WNY is an immediate concern because of proposed incompatible private development currently scheduled and approved for construction on the SEFC E Parcels, adjacent to the northwest perimeter of the WNY. By obtaining the SEFC E Parcels, the Navy would:

- improve the WNY AT posture by reducing the encroachment threat posed by planned, private development on the SEFC E Parcels;
- protect mission-critical activities conducted at the WNY from visual surveillance, and acoustic and electronic eavesdropping; and
- enhance the overall safety of personnel, facilities, and infrastructure at the WNY.

Should the Navy obtain ownership of the SEFC E Parcels from U.S. General Services Administration (GSA) through a federal-to-federal land transfer, the Navy is considering three alternative uses for the acquired property: construction of a relocated Navy Museum, construction of administrative facilities, or maintaining the status quo (no new development).

ES.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to improve the overall WNY AT posture (i.e., increase physical security and antiterrorism mitigation measures), as well as protect mission-critical activities at the WNY from visual surveillance and acoustic and electronic eavesdropping. The need for the Proposed Action is to protect the WNY from encroachment that would result from proposed private development located adjacent to the northwest perimeter of the WNY.

ES.3 Alternatives Considered

ES.3.1 No Action Alternative: Private Development on the SEFC E Parcels

Under the No Action Alternative, the Proposed Action would not occur. The Navy would not acquire the SEFC E Parcels or redevelop the parcels. No Navy relocations as a result of a land exchange would occur. The developer would construct planned mixed-use development on the SEFC E Parcels. This planned private development includes potential renovation of two historic buildings (Buildings 74 and 202) and construction of two new buildings. Renovated Building 202 may provide approximately 328,000 square feet of office space. Renovated Building 74 and two new buildings constructed at a height of 110 feet would provide approximately 538,000 square feet of residential space. Approximately 581 parking

[1] NDW is a Region within Commander Navy Installations Command.
[2] According to GSA, the second amendment to the master plan, dated 2020, labels the parcels E1, E2, E3, and E4. The 2006 Master Plan labeled the parcels E1, E2, and E3.

spaces would be provided. The development and construction period is assumed to be 10 years, starting as early as 2023.

ES.3.2 Alternative 1: Land Acquisition through Land Exchange

Under Alternative 1, the Navy would exchange certain underutilized[3] properties within the WNY Southeast Corner to obtain acquisition rights and ownership of SEFC E Parcels. Under this alternative, the Navy would acquire development rights to the approximately 6-acre SEFC E Parcels. GSA would then transfer ownership of the SEFC E Parcels to the Navy via a federal-to-federal transfer. In exchange for acquisition rights, the Navy would transfer and/or lease underutilized assets (approximately 15 acres) at the WNY Southeast Corner to the developer.

Alternative 1 includes the following elements:

- Land exchange of SEFC E Parcels for WNY Southeast Corner
- Relocation of functions from the WNY Southeast Corner to other areas on the WNY
- Future development on the WNY Southeast Corner by the private developer
- In-kind considerations at the WNY to be provided by the developer
- Exchange option[4] for two Joint Base Anacostia-Bolling (JBAB) parcels
- Three different sub-alternatives for the Navy's future use of the SEFC E Parcels referred to as Alternatives 1A, 1B, and 1C as described in Section ES.3.4

ES.3.3 Alternative 2: Direct Land Acquisition

Under Alternative 2, the Navy would acquire the rights to the SEFC E Parcels from the developer through purchase or condemnation, and receive the SEFC E Parcels from GSA through a federal-to-federal transfer. No WNY property would transfer to the developer, and no missions or tenants would need to be relocated under this alternative. Alternative 2 includes the following elements:

- Purchase of acquisition rights and federal-to-federal transfer of the SEFC E Parcels
- Three different sub-alternatives for the Navy's future use of the SEFC E Parcels referred to as Alternative 2A, 2B, and 2C as described in Section ES.3.4

ES.3.4 Sub-alternatives for Both Alternative 1 and Alternative 2

The Navy has identified three sub-alternatives for the SEFC E Parcels if they are acquired:

- Sub-alternative A: Reuse of the SEFC E Parcels with relocated Navy Museum
- Sub-alternative B: Reuse of the SEFC E Parcels with Navy Administrative Development
- Sub-alternative C: No Development on SEFC E Parcels

[3] Underutilized refers to administrative areas and with buildings that are not being used to full potential.
[4] The Navy would provide the developer with an exchange option to acquire two parcels on JBAB should the Navy elect to divest these parcels in the future. Any future development of JBAB or a replacement site is conditioned on completing an appropriate NEPA analysis.

For the three sub-alternatives listed above, the proposed use of the SEFC E Parcels is the same for both Alternative 1 and Alternative 2. However, the analysis of impacts from each sub-alternative is different for Alternative 1 and Alternative 2 as described below:

- Impact analysis for Alternative 1 and sub-alternatives includes impacts from Navy reuse of the SEFC E Parcels in addition to private development on the WNY Southeast Corner and upgrades at the WNY provided by the developer as in-kind considerations (associated with land acquisition through land exchange).
- Impact analysis for Alternative 2 and sub-alternatives only includes impacts from Navy reuse of SEFC E Parcels (associated with purchase of acquisition rights).

ES.4 Preferred Alternative

The Navy's Preferred Alternative is Alternative 1A: Land Acquisition through Land Exchange, which includes the exchange of the SEFC E Parcels for the WNY Southeast Corner, private development and upgrades at the WNY provided by the developer as in-kind considerations, and reuse of the SEFC E Parcels with construction and operation of a relocated Navy Museum. Alternative 1A meets the purpose and need to improve the overall WNY AT posture, and protects WNY mission-critical activities from visual surveillance and acoustic and electronic eavesdropping. Alternative 1A also enhances the overall safety of personnel, facilities, and infrastructure at the WNY by constructing and operating compatible development on the SEFC E Parcels.

Land acquisition through land exchange (Alternative 1) is preferred over direct land acquisition (Alternative 2) for multiple reasons. For one, Alternative 1 meets the requirements of Section 2845 of the 2019 NDAA, which specifically provides for the acquisition of the SEFC E parcels via exchange of real property that the Navy considers appropriate to protect the interests of the United States. This grants the Navy discretion to leverage the Navy's existing, underutilized property rather than seeking an appropriation to purchase the acquisition rights from the developer.. In contrast, Alternative 2 would require appropriated funds that could be used for other national priorities.

Additionally, in Alternative 1, the Navy would acquire 6 acres of private land in exchange for transfer/lease of 15 acres of federal land to a developer, which would become developable and taxable private land that would benefit the local community. Conversely, Alternative 2 would change 6 acres of developable and taxable private land to non-taxable federal land. Alternative 1 would also provide the opportunity for in-kind considerations from the developer, such as upgrades to the Riverwalk and Piers, which would benefit the Navy and the local community.

For the reuse of the SEFC E Parcels, Sub-alternative A (Navy Museum) is preferred over Sub-alternatives B (Navy administrative facilities) and C (no development) because Sub-alternative A allows the Navy to meet a long-term need of relocating the existing museum. Relocating the Navy Museum would benefit both the Navy and the surrounding community by addressing the limitations of the existing museum, providing a location for a new, world-class museum for public enjoyment, and bringing potential retail and commercial amenities to the local area.

ES.5 Summary of Environmental Resources Evaluated in Environmental Impact Statement

The National Environmental Policy Act (NEPA), and Council on Environmental Quality and Department of the Navy NEPA regulations specify that an Environmental Impact Statement (EIS) should address

resource areas that are potentially subject to impacts. In addition, the level of analysis should be commensurate with the anticipated level of environmental impact.

The following resource areas have been carried forward for detailed analysis in this EIS: transportation; cultural resources; land use/zoning; hazardous materials and wastes; water resources; construction noise; air quality; socioeconomics; environmental justice; utilities and infrastructure; and cumulative impacts. Because potential impacts were considered to be less than significant, negligible, or nonexistent, the following resources were considered, but not carried forward for detailed analysis in this EIS: biological resources, visual resources except those relating to historic properties, airspace, public health and safety, and geological resources.

A summary of potential impacts associated with each of the action alternatives and the No Action Alternative are presented in Tables ES-1. As noted in Table ES-1, the potential for significant impacts to traffic, cultural resources, land use/zoning, and noise could occur under certain alternatives. No significant impacts were identified for hazardous materials and wastes, water resources, air quality, socioeconomics, environmental justice, and utilities and infrastructure. Section 3.12, *Summary of Potential Impacts to Resources and Impact Avoidance and Minimization*, summarizes impacts and identifies mitigation measures the Navy could implement to reduce potential significant impacts to resources.

Table ES-1 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1A: Land Acquisition through Land Exchange with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative1B: Land Acquisition through Land Exchange with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 1C: Land Acquisition through Land Exchange with No Development on SEFC E Parcels*	*Alternative 2A: Direct Land Acquisition with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative 2B: Direct Land Acquisition with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 2C: Direct Land Acquisition with No Development on SEFC E Parcels*
Transportation	• No significant traffic impacts. Minor additional traffic impacts during the morning and afternoon peaks.	• No significant traffic impacts. Minor additional traffic impacts during the morning and afternoon peaks.	• Potential significant traffic impacts due to serious queuing delays. Additional minor traffic impacts during the morning, afternoon, and weekend peaks.	• No significant traffic impacts. Minor additional traffic impacts during the morning and afternoon peaks.	• No significant traffic impacts. Minor additional traffic impacts during the morning and afternoon peaks.	• No significant traffic impacts. Minor additional traffic impacts during the morning and afternoon peaks.	• No significant traffic impacts. Minor traffic impacts during the morning and afternoon peaks under current conditions.
Cultural Resources	• Adverse effects to historic properties under Section 106 of the NHPA. NEPA impacts would be significant but would be resolved by agreements with the developer and consulting parties.	• Adverse effects to historic properties. NEPA impacts would be significant but would be resolved by agreements with the Navy, the developer, and consulting parties.	• Same as Alternative 1A.	• Adverse effects to historic properties on the WNY Southeast Corner but no change to existing conditions on the SEFC E Parcels. NEPA impacts would be significant but would be resolved by agreements with the Navy, the developer, and consulting parties.	• Adverse effects to historic properties on the SEFC E Parcels. No change to the WNY Southeast Corner. NEPA impacts would be significant but would be resolved by agreements with the Navy, and consulting parties.	• Same as Alternative 2A.	• No effects to historic properties because of no change to current conditions.
Land Use/Zoning	• Potentially significant land use impacts at the WNY due to compromised antiterrorism posture for the WNY. Private development of the SEFC E Parcels would be incompatible with the WNY mission. No significant zoning impacts.	• No significant impacts to land use or zoning.	• No significant impacts to land use or zoning.	• No significant impacts to land use or zoning.	• No significant impacts to land use or zoning.	• No significant impacts to land use or zoning.	• No significant impacts to land use or zoning

Table ES-1 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1A: Land Acquisition through Land Exchange with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative1B: Land Acquisition through Land Exchange with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 1C: Land Acquisition through Land Exchange with No Development on SEFC E Parcels*	*Alternative 2A: Direct Land Acquisition with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative 2B: Direct Land Acquisition with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 2C: Direct Land Acquisition with No Development on SEFC E Parcels*
Hazardous Materials and Wastes	• No significant impacts. Beneficial impacts would include remediation of any special hazards in Buildings 74 and 202 and removal of contaminated soil.	• No significant impacts to hazardous materials and wastes. An acceptable location for the Navy Hazardous Waste Storage Site would be identified prior to the land transfer, and the Navy would conduct appropriate NEPA analysis upon identification of a new site. Beneficial impacts would include remediation of any special hazards in Buildings 74 and 202 and removal of contaminated soil.	• Same as Alternative 1A.	• No significant impacts to hazardous materials and wastes. An acceptable location for the Navy Hazardous Waste Storage Site would be identified prior to the land transfer, and the Navy would conduct appropriate NEPA analysis upon identification of a new site. Beneficial impacts would not occur; no remediation of any special hazards in Buildings 74 and 202 and no removal contaminated soil.	• No significant impacts and the Hazardous Waste Storage Site would not need to be relocated. Beneficial impacts would occur with remediation of any special hazards in Buildings 74 and 202 and removal contaminated soil.	• Same as Alternative 2A.	• No significant impacts and the Hazardous Waste Storage Site would not need to be relocated. Beneficial impacts would not occur; no remediation of any special hazards in Buildings 74 and 202 and no removal contaminated soil.
Water Resources	• No significant impacts to stormwater infrastructure at SEFC E Parcels. The existing flood risk would remain.	• No significant impacts to stormwater infrastructure at WNY Southeast Corner and SEFC E Parcels. The flood risk would remain.	• Same as Alternative 1A.	• No significant impacts to stormwater infrastructure at WNY Southeast Corner. The flood risk would remain.	• No impact because no change to the WNY Southeast Corner. No significant impacts to stormwater infrastructure at SEFC E Parcels. • The flood risk would remain.	• Same as Alternative 2A.	• No impact because no change to the WNY Southeast Corner. Limited construction at the SEFC E Parcels would not significantly impact water resources. The flood risk would remain the same.
Noise	• Potentially significant temporary noise impacts at noise-sensitive locations during construction at the SEFC E Parcels. No permanent noise impacts at the SEFC E Parcels.	• Potentially significant temporary noise impacts at noise-sensitive locations during construction at the SEFC E Parcels. No permanent noise impacts at the SEFC E Parcels.	• Same as Alternative 1A.	• No significant noise impacts.	• Potentially significant temporary noise impacts at noise-sensitive locations during construction at the SEFC E Parcels. No permanent noise impacts at the SEFC E Parcels.	• Potentially significant temporary noise impacts at noise-sensitive locations during construction at the SEFC E Parcels. No permanent noise impacts at the SEFC E Parcels.	• No significant noise impacts.
Air Quality[(1)]	• No significant air quality impacts with construction and operation emissions below applicable significance thresholds.	• No significant air quality impacts with construction and operation emissions below applicable significance thresholds.	• Same as Alternative 1A.	• No significant air quality impacts with less air emissions than Alternative 1A with no Navy or private development on SEFC E Parcels.	• No significant air quality impacts with SEFC E Parcels construction and operation below applicable significance thresholds.	• Same as Alternative 2A.	• No significant air quality impacts due to limited construction (fence and utilities on SEFC E Parcels).

Table ES-1 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1A: Land Acquisition through Land Exchange with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative1B: Land Acquisition through Land Exchange with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 1C: Land Acquisition through Land Exchange with No Development on SEFC E Parcels*	*Alternative 2A: Direct Land Acquisition with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative 2B: Direct Land Acquisition with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 2C: Direct Land Acquisition with No Development on SEFC E Parcels*
Socioeconomics	• No significant impacts. Impacts to population, housing, and schools during the construction period would be minor. Beneficial economic impacts from construction and operation of private development on SEFC E Parcels.	• No significant impacts. Beneficial economic impacts from construction and operation of the Navy Museum on the SEFC E Parcels and private development on WNY Southeast Corner.	• No significant impacts. Beneficial economic impacts from construction and operation of Navy administrative development on the SEFC E Parcels and private development on WNY Southeast Corner.	• No significant impacts. No short-term or long-term economic impacts with no development of SEFC E Parcels. Beneficial impacts from private development on the WNY Southeast Corner.	• No significant impacts. Beneficial economic impacts from construction and operation of Navy Museum on the SEFC E Parcels. Minor negative economic impact as a result of direct land acquisition that would increase federal land and remove some property from taxable status resulting in reduced property tax revenues.	• No significant impacts. Beneficial economic impacts from construction and operation of Navy administrative development on the SEFC E Parcels. Minor negative economic impact as a result of direct land acquisition that would increase federal land and remove property from taxable status resulting in reduced property tax revenues.	• No significant impacts. No short-term or long-term economic impacts with no development of SEFC E Parcels. Minor negative economic impact with the increase in federal land but without adding the benefits of development.
Environmental Justice[2]	• No disproportionately high and adverse effects on minority and low-income populations and no significant impacts to the health and safety of children from private development on SEFC E Parcels.	• No disproportionately high and adverse effects on minority and low-income populations and no significant impacts to the health and safety of children from private development on WNY Southeast Corner or in-kind considerations and relocated Navy Museum on SEFC E Parcels.	• No disproportionately high and adverse effects on minority and low-income populations and no significant impacts to the health and safety of children from private development on WNY Southeast Corner or in-kind considerations and Navy administrative development on SEFC E Parcels.	• No disproportionately high and adverse effects on low-income or minority populations and no significant impacts to the health and safety of children from private development on WNY Southeast Corner or in-kind considerations and no development on SEFC E Parcels.	• Same as No Action Alternative.	• Same as No Action Alternative.	• No disproportionately high and adverse impacts to low-income or minority populations and no significant impacts to the health and safety of children because there would be no development on the SEFC E Parcels.
Utilities and Infrastructure	• No significant impacts to capacity with ample capacity; minor short-term impacts during utilities connections.	• Same as No Action Alternative.	• Same as No Action Alternative.	• Same as No Action Alternative.	• Same as No Action Alternative.	• Same as No Action Alternative.	• No significant impacts to utilities and infrastructure with limited proposed development.

Notes: NEPA = National Environmental Policy Act; NHPA = National Historic Preservation Act; SEFC = Southeast Federal Center; WNY = Washington Navy Yard.
1. Evaluation of air quality impacts in accordance with Clean Air Act National Ambient Air Quality Standards.
2. Evaluation of human health and environmental effects to minority and low-income populations in accordance with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations*; evaluation of environmental health and safety effects to children in accordance with Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*.

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ES.6 Public Involvement

NEPA and its implementing regulations require federal agencies to involve the public during preparation of EISs. The NEPA environmental review process is intended to help public officials make decisions based on an understanding of the environmental consequences and take actions that protect, restore, and enhance the environment (40 Code of Federal Regulations [CFR] 1500.1).

The Navy published a Notice of Intent (NOI) to prepare an EIS in the Federal Register on February 18, 2022 (87 Federal Register 9328–9329). The NOI provided an overview of the Proposed Action, a summary of anticipated issues, and a description of how the public could participate in the EIS process, including dates and locations for scoping meetings. The public was also notified by advertisements in *The Washington Post* newspaper (February 18, 19, and 20, 2022) and on Naval District Washington's website: https://ndw.cnic.navy.mil/WNY-Land-Acquisition/1/.

The public was invited to participate in both the NEPA and Section 106 of the National Historic Preservation Act (NHPA) processes. The Navy solicited public and agency comments during a scoping period from February 18 through March 21, 2022. Virtual scoping meetings were held on March 8 and March 9, 2022. The Navy received 14 comments. Respondents submitted their comments by postal mail, verbally at the virtual public scoping meetings via a court reporter, and by email. Comments received during the scoping period were considered in preparing the Draft EIS and complying with Section 106 of the NHPA.

The comments received generally cover the following topics:

- Request for the Capitol Riverfront Business Improvement District to be involved in the NEPA process
- Support for a Navy Museum as a reuse of the parcel
- Maintaining the historic characteristics of the buildings under the transfer agreement
- Plans for access impacting the historic Navy Yard Wall
- Consideration of public access to the Anacostia Riverwalk Trail
- Request for a Comprehensive Transportation Review Scoping Form for the potential land exchange and the private development in the WNY Southeast Corner to include: access and repair of the Anacostia Riverwalk Trail, vehicle and bike parking, and standards for sidewalks, roadways, landscaping, and lighting
- Request by D.C. Department of Transportation (DDOT) to be a cooperating agency[5]

The Navy is coordinating or consulting with: U.S. Air Force; U.S. Environmental Protection Agency; Advisory Council on Historic Preservation (ACHP); National Park Service, National Capital Area; National Capital Parks – East; District of Columbia State Historic Preservation Officer (D.C. SHPO); DDOT; Department of Energy & Environment; D.C. Office of Planning; National Capital Planning Commission; U.S. Commission of Fine Arts; GSA; Advisory Neighborhood Commissions; Capitol Hill Restoration

[5] In the scoping letter, DDOT requested to be a cooperating agency in the EIS process. The Navy met with DDOT and reaffirmed their continuing role in the EIS process and, as a result, DDOT determined that they did not need to be a cooperating agency. Appendix A contains correspondence.

Society; Historic Anacostia Preservation Society; and Capitol Riverfront Business Improvement District regarding this Proposed Action.

The Navy's discussions with agencies and public involvement contributed to development of the action alternatives and helped to identify potential environmental impact avoidance, minimization, and mitigation measures for the project. The Navy will continue to discuss issues and follow appropriate consultations associated with the Proposed Action and alternatives as the EIS process continues.

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Proposed Land Acquisition at Washington Navy Yard
Washington, D.C.

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Abbreviations and Acronyms

Acronym	Definition
ACAM	Air Conformity Applicability Model
ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-Containing Material
ANSI	American National Standards Institute
APE	Area of Potential Effects
AT	Antiterrorism
BMP	best management practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFA	U.S. Commission of Fine Arts
CFR	Code of Federal Regulations
CNIC	Commander, Naval Installations Command
CNO	Chief of Naval Operations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CWA	Clean Water Act
D.C.	District of Columbia
dB	Decibel
D.C. SHPO	District of Columbia State Historic Preservation Officer
DDOT	D.C. Department of Transportation
DERP	Defense Environmental Restoration Program
DMS	Dynamic Message Sign
DoD	United States Department of Defense
DOEE	D.C. Department of Energy & Environment
DoN	Department of the Navy
EA	Exposure Area
EIS	Environmental Impact Statement
EO	Executive Order
ER	Environmental Restoration
FC	Facilities Criteria
FEMA	Federal Emergency Management Agency
FFA	Federal Facilities Agreement
FHWA	Federal Highway Administration
FY	Fiscal Year
GHG	Greenhouse Gas
gpd	gallon per day
GSA	General Services Administration
HAP	Hazardous Air Pollutant
ICRMP	Integrated Cultural Resources Management Plan
JBAB	Joint Base Anacostia-Bolling
ITE	Institute of Transportation Engineers
L_{Aeq1hr}	Equivalent Sound Level
LBP	Lead-Based Paint
LEED	Leadership in Energy and Environmental Design
LID	Low Impact Development
L_{max}	Maximum Sound Level
LOS	Level of Service
LUC	Land Use Control
MOU	Memorandum of Understanding
MRP	Munitions Response Program
MS4	Municipal Separate Storm Sewer System
msl	Mean Sea Level
MT	Metric Ton
MW	Megawatt
NAAQS	National Ambient Air Quality Standards

Acronym	Definition
NAVFAC	Naval Facilities Engineering Systems Command
NCPC	National Capital Planning Commission
NDAA	National Defense Authorization Act
NDW	Naval District Washington
NEPA	National Environmental Policy Act
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
NOI	notice of intent
NO_x	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSAW	Naval Support Activity Washington
NSR	New Source Review
OU	Operational Unit
PA	Programmatic Agreement
PAH	Polycyclic Aromatic Hydrocarbon
Pb	Lead
PCB	Polychlorinated Biphenyl
PEPCO	Potomac Electric Power Company
PFAS	Per- and Polyfluoroalkyl Substances
$PM_{2.5}$	Fine Particulate Matter Less Than or Equal to 2.5 Microns in Diameter
PM_{10}	Suspended Particulate Matter Less Than or Equal to 10 Microns in Diameter
POI	Point of Interest
POL	Petroleum, Oils, and Lubricants
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
ROI	Region of Influence
SEFC	Southeast Federal Center
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_x	Sulfur Oxides
SSA	Site Screening Area
SVOC	Semi-volatile Organic Compound
SWMP	Stormwater Management Plan
TMDL	Total Maximum Daily Load
tpy	Tons Per Year
UFC	Unified Facilities Criteria
U.S.	United States
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
WNY	Washington Navy Yard

1 Purpose of and Need for the Proposed Action

1.1 Introduction

Naval District Washington (NDW[6]), a Command of the United States (U.S.) Navy (hereinafter referred to as the Navy) proposes to obtain approximately 6 acres of land at the Southeast Federal Center (SEFC), (Parcels E1, E2, E3, and E4[7]) (GSA, 2020) to improve the overall antiterrorism (AT) posture of the Washington Navy Yard (WNY), Washington, District of Columbia (D.C.). Encroachment at the WNY is an immediate concern because of proposed incompatible private development currently scheduled and approved for construction in 2023 on the SEFC E Parcels, adjacent to the northwest perimeter of the WNY. By obtaining the SEFC E Parcels, the Navy would:

- improve the WNY AT posture by reducing the encroachment threat posed by planned, private development on the SEFC E Parcels;
- protect mission-critical activities conducted at the WNY from visual surveillance, and acoustic and electronic eavesdropping; and
- enhance the overall safety of personnel, facilities, and infrastructure at the WNY.

Should the Navy obtain ownership of the SEFC E Parcels from U.S. General Services Administration (GSA) through a federal-to-federal land transfer, the Navy is considering three alternative uses for the acquired property: construction of a relocated Navy Museum, construction of administrative facilities, or maintaining the status quo (no new development).

The Navy has prepared this Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA), and Council on Environmental Quality (CEQ) and Department of the Navy regulations for implementing NEPA.

1.2 Background

1.2.1 Location

The WNY consists of approximately 77.9 acres of land located between 5th and 11th Streets in the southeastern quadrant of the District of Columbia (Figure 1.2-1). The WNY is bounded by M Street SE to the north; 11th Street SE to the east; Anacostia River to the south; and sections of Isaac Hull Avenue, Tingey Street, and Pendleton Avenue to the west (Figure 1.2-2). Several major arterial roads are located near the WNY including: I-395, I-295, South Capitol Street, M Street SE, and 11th Street SE. The WNY is accessible by Metrorail and Metrobus. The installation is located in an urban area surrounded by public facilities, parks, and residential communities, including the SEFC (Figure 1.2-2).

[6] NDW is a Region within Commander Navy Installations Command.

[7] According to GSA, the second amendment to the master plan, dated 2020, labels the parcels E1, E2, E3,and E4. The 2006 Master Plan labels the parcels E1, E2, and E3.

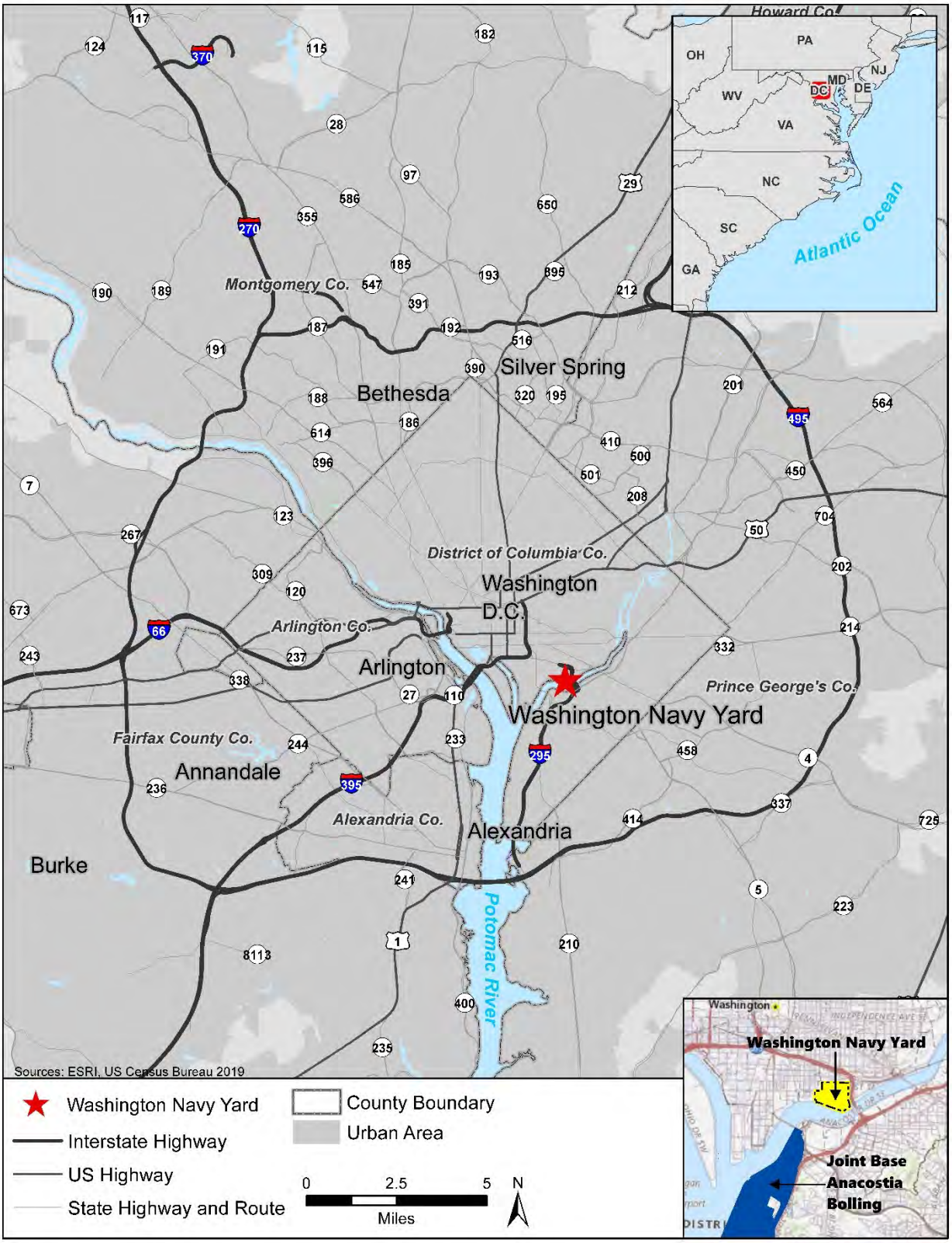

Figure 1.2-1 Location Map

Figure 1.2-2 Site Map

The Washington Navy Yard Central Yard, the area between Isaac Hull Avenue and Parsons Avenue SE, was first listed in the National Register of Historic Places (NRHP) in 1973 and designated a National Historic Landmark (NHL) in 1976 (NAVFAC Washington, 2019a). The area west of Isaac Hull Avenue SE, known as the Washington Navy Yard Annex Historic District, was first determined eligible in 1977 and listed in the NRHP in 2008. This area is now owned by GSA, except for Navy-owned Buildings 116, 118, and 197. The area east of Parsons Avenue, extending to 11th Street SE, sometimes referred to as the East Yard or the Eastern Extension, was surveyed in 2001 and was determined to be eligible for the NRHP (NAVFAC Washington, 2019a).

1.2.2 WNY Land Assets

The WNY was established in 1799 and is the Navy's oldest shore establishment. Land along the Anacostia River was set aside by George Washington for use by the federal government. The original boundaries were established in 1800 along 9th and M Streets SE and are still marked by a brick wall built in 1809 (CNIC, 2021). Until the 1850's, the WNY was a shipbuilding and repair facility. From the 1850s until 1961, the primary function of the WNY changed to ordnance production. In 1962, the WNY was divided into two sections, with the eastern section (77.9 acres) remaining under control of the Navy (the present WNY). In 1963, the western section (60.5 acres) known then as the Washington Navy Yard Annex, was transferred to GSA and renamed as SEFC.

GSA originally planned to reuse the SEFC. In 2000, the Southeast Federal Center Public-Private Development Act (Public Law 106-407) authorized GSA to consider transfer of the SEFC by sale and/or ground lease to a private developer for mixed-use development. Five master plans and associated studies were prepared resulting in GSA conveying 11 acres to U.S. Department of Transportation (USDOT) for construction of a new headquarters (completed in 2007). In 2005, GSA entered into an agreement with the developer for the phased development of the remaining approximately 40 acres. The development agreement ultimately provided for 3.2 million square feet of residential and 2 million square feet of commercial, retail, and cultural space, a 5-acre waterfront park with a promenade along the Anacostia River, and other public amenities (GSA, 2021). The private development of SEFC E Parcels, as allowed in the SEFC Master Plan, is inconsistent with the overall AT posture of the WNY and presents encroachment threats.

The WNY continues to be the "Quarterdeck of the Navy" and serves as the Headquarters for Naval District Washington, where it houses numerous support activities for fleet and aviation communities (CNIC, 2021). The WNY currently has a primarily administrative function with land use categorized as: administrative (46 percent of total land area), base support, commercial, cultural, family/bachelor housing, medical, open space/preservation, parking, piers, recreation, storage, temporary lodging, and utilities (NAVFAC Washington, 2017a).

1.2.3 Land Acquisition Options

The Navy could acquire the SEFC E Parcels either through a land exchange or purchase. The land acquisition option would involve a legal land exchange agreement with the developer and a follow-on federal-to-federal land transfer by GSA. The other option is a purchase of the acquisition rights from the developer with a follow-on federal-to-federal land transfer by GSA. More details on both options are provided below.

1.2.3.1 Land Exchange

Section 2845 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (National Defense Authorization Act [NDAA] 2019), authorizes a potential land exchange for the WNY. It states that the Navy may convey right, title, and interest in one or more parcels of real estate which the Secretary considers appropriate to protect the interests of the U.S. In exchange, the Navy may accept parcels of the SEFC in the vicinity of the WNY, provided replacement of facilities being conveyed are of equal value and similar utility. An independent appraiser would be required to determine values of the real estate. Further, the Navy would require the other party in this land exchange to either cover or reimburse costs incurred by the Navy for activities required to carry out the land exchange. These activities may include: surveys, environmental documentation, administrative functions, and relocation of activities and facilities, including equipment. The exchange of real property requires the use of an appropriate legal instrument to be based upon terms and conditions mutually satisfactory to both parties of the exchange, including such additional terms and conditions as the Navy considers appropriate (NDAA, 2019).

As specified by the 2019 NDAA, the Navy would prepare an agreement with the developer to define the roles and responsibilities and identify the terms and conditions of a land exchange. Parcels considered for exchange could include those on the WNY and/or Joint Base Anacostia-Bolling (JBAB).

The exchange of land and acquisition of rights and any future construction and redevelopment would be contingent upon meeting applicable environmental requirements, including NEPA requirements, compliance with all applicable federal and local laws, and execution of the required real estate decision documents. Specifically, the reuse of land exchanged by the Navy to the developer (including: the reuse of existing facilities, and the construction of new buildings on the WNY and/or JBAB) would be regulated by local government and zoning ordinances. The land exchange agreement between the Navy and the developer and other applicable plans and regulations would also apply.

The Navy will not make irretrievable commitments of resources regarding the land exchange prior to completion of NEPA requirements. Therefore, this EIS evaluates the reasonably foreseeable effects of proposed future buildout scenarios of the affected parcels (SEFC E Parcels and the WNY Southeast Corner) to be exchanged, including future land uses by both the developer and the Navy. The Navy would provide the developer with an exchange option to acquire two parcels on JBAB should the Navy elect to divest these parcels in the future. The legal land exchange agreement between the Navy and the developer specifically conditions any future development of JBAB or a replacement site on completing an appropriate NEPA analysis.

1.2.3.2 Direct Land Acquisition

If there were to be a new appropriation from Congress providing supplemental budget authority, the Navy would purchase the acquisition rights from the developer at current market value. In this case, no WNY property would transfer to the developer. GSA would transfer the SEFC E Parcels to the Navy via a federal-to-federal transfer and the Navy would own the land as a federal entity.

1.3 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to improve the overall WNY AT posture (i.e., increase physical security and antiterrorism mitigation measures), as well as protect mission-critical activities from visual

surveillance, and acoustic and electronic eavesdropping of the WNY. The need for the Proposed Action is to protect the WNY from encroachment that would result from proposed private development located adjacent to the northwest perimeter of the WNY.

Comprehensive AT programs that integrate physical security, law enforcement, and emergency management are routinely implemented at military installations across the country. AT programs are designed to proactively detect and prevent terrorist attacks against military and civilian personnel, family members, facilities, and associated equipment and infrastructure critical to the military mission. These programs also prepare military installations to plan for, defend against, and respond to terrorist incidents.

Periodic evaluations of AT programs are conducted to determine their effectiveness in mitigating the risk of injury, death, or damage resulting from physical security breaches and terrorist activities at military installations (Department of Defense [DoD] Antiterrorism Programs, Report No. DODIG-2018-046). Multiple organizations over the last eight years have performed AT measures conformance evaluations of buildings in the northwest area of the WNY. These evaluations informed the Navy that the proposed private development with high-rise buildings on the SEFC E Parcels would conflict with protection of personnel and buildings in the northwest area of WNY and the activities it hosts. Additionally, the evaluations concluded that acquiring physical control over the SEFC E Parcels, including Tingey Street, would improve the overall safety of personnel, facilities, and infrastructure at the WNY.

Specifically, the Proposed Action would support compliance with the following codes and guidance:

Antiterrorism Force Protection Standards. DoD developed and mandated criteria and minimum construction standards to mitigate AT vulnerabilities and terrorist threats identified following the events of September 11, 2001. Antiterrorism standards consist of requirements for stand-off distances, building separation, unobstructed space, drive-up and drop-off areas, access roads, and parking; structural design; structural isolation; and electrical and mechanical design. Force Protection Standards require clear zones, restricted area boundaries, patrol roads, and access control.

Unified Facilities Criteria (UFC) 4-020-01, DoD Security Engineering Facilities Planning Manual (DoD, 2008). This UFC supports planning of projects that include requirements for security and antiterrorism and is used in conjunction with UFC 4-010-01 to establish security and antiterrorism design criteria for DoD facility designs.

UFC 4-010-01, Change 1, DoD Minimum Antiterrorism Standards for Buildings, August 19, 2020 (DoD, 2020a). This UFC provides minimum engineering standards for DoD projects to provide AT mitigation measures designed to reduce collateral damage and the scope and severity of mass casualties in DoD buildings in the event of a terrorist attack.

DoD Instruction 5200.08-R, Change 2, October 19, 2020, Physical Security Program (DoD, 2020b). This regulation implements baseline DoD policies and minimum standards for physical protection of DoD personnel, installations, operations, and related resources. The physical security program includes active and passive measures designed to prevent unauthorized access to personnel, equipment, installations, and information and safeguard against espionage, sabotage, terrorism, damage, and criminal activity. Physical security employs physical protective and security procedural measures in combination with active or passive systems, technologies, devices, and security personnel used to protect assets from possible threats. These measures, among others, can include the following: physical barriers and facility hardening, secure locking systems, electronic security systems, surveillance systems, protective lighting, and credential technologies.

1.4 Scope of Environmental Analysis

Agencies shall use an early and open process to determine the scope of issues for analysis in an EIS, including identifying the significant issues and eliminating from further study non-significant issues. This EIS includes an analysis of potential environmental impacts associated with the action alternatives and the No Action Alternative. Based on an assessment of potential environmental impacts by Navy subject matter experts and feedback received during the public scoping period (see Section 1.7, *Public and Agency Participation and Intergovernmental Coordination*), the environmental issue areas carried forward for detailed analysis in this EIS include: transportation; cultural resources; land use/zoning; hazardous materials and wastes; water resources; construction noise; air quality; socioeconomics; environmental justice; utilities and infrastructure; and cumulative effects. The study area for each environmental issue analyzed may differ due to how the Proposed Action interacts with or impacts the resource. For example, the study area for geological resources may only include the construction footprint of a building, whereas the air quality study area would expand to include the air quality control region. Resources considered, but not carried forward for detailed analysis in this EIS included biological resources, visual resources except relating to historic properties, airspace, public health and safety, and geological resources, as described in Section 3.1, *Resources not Addressed in Detail*.

1.5 Key Documents

Key documents used in the development of this EIS include the following:

- **Installation Master Plan, Washington Navy Yard, 2017** (NAVFAC Washington, 2017a). The Master Plan guides efficient shore installation management to maintain the integrity of mission readiness. Any changes to regulations and codes, mission, and personnel could result in the need to relocate or consolidate functions, renovate facilities, and construct new facilities. These changes could impact infrastructure, buildings, environment, security, transportation, and quality of life. The Installation Master Plan document establishes the framework for efficient use and/or disposition of land and facilities.
- **Southeast Federal Center – Revised Master Plan 2nd Amendment, 2020** (GSA, 2020)**.** GSA submitted a 2nd amendment to the SEFC Master Plan for the 42-acre planned development known as The Yards. This amendment retains medium density buildout and similar square footage as the 2007 Master Plan and NEPA Record of Decision (ROD). The National Capital Planning Commission (NCPC) approved this amendment on June 4, 2020 noting that the amendment contains minor modifications to the land use, phasing, and parking plans. The SEFC E Parcels development did not have any land use changes but was moved from Phase 2 to Phase 3. Plans for parcels will continue to be submitted to NCPC for review until full buildout is complete.
- **Integrated Cultural Resources Management Plan (ICRMP) 2018-2022, Naval Support Activity Washington (NSAW), Final 2019** (NAVFAC Washington, 2019a). The ICRMP is a planning document to guide the Installation Commanding Officer with management of cultural resources in support of the mission and to comply with federal cultural resource laws. The plan provides the current status of known cultural resources and a description of previous cultural resources studies at the WNY. It identifies recommendations and standard operating procedures to remain compliant with regulations.

- **NSAW Hazardous Waste Management Plan, August 2018** (NAVFAC Washington, 2018). The Hazardous Waste Management Plan is designed to provide guidance to all personnel and installations under NSAW, including the WNY. The procedures and requirements in this plan are, for the most part, mandated by law and are not discretionary. This plan provides detailed guidance pertaining to generation, identification, collection, storage, and disposal of hazardous waste at installations assigned to NSAW.
- **National Priority List/Federal Facility Agreement** – The WNY was placed on the National Priorities List on August 27, 1998. Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), federal agencies are responsible for investigating and carrying out most cleanup actions at their own facilities. The U.S. Environmental Protection Agency (USEPA) Region III, D.C. Department of Health (predecessor to D.C. Department of Energy & Environment [DOEE]), and the Navy negotiated an interagency agreement or a Federal Facilities Agreement (FFA) signed on June 30, 1999. The FFA covers investigation, development, selection, and implementation of response actions for all releases (or threatened releases) of hazardous substances, contaminants, hazardous wastes, hazardous constituents, or pollutants at or from the site. The Navy is the lead agency with USEPA oversight for management and cleanup of the WNY sites. The DOEE's role is to provide regulatory oversight and represent D.C.'s interest. As ordered in the FFA, response activities will continue under CERCLA and the Defense Environmental Restoration Program. The Navy must conduct cleanup in compliance with CERCLA and applicable D.C. laws and regulations.

1.6 Relevant Laws and Regulations

The Navy has prepared this EIS in accordance with federal and local laws, statutes, regulations, and policies pertinent to implementation of the Proposed Action. 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).

1.7 Public and Agency Participation and Intergovernmental Coordination

NEPA and its implementing regulations require federal agencies to involve the public during preparation of EISs. The NEPA environmental review process is intended to help public officials make decisions based on an understanding of the environmental consequences and take actions that protect, restore, and enhance the environment (40 CFR 1500.1).

The Navy published a Notice of Intent (NOI) to prepare an EIS in the Federal Register on February 18, 2022 (87 Federal Register 9328-9329). The NOI provided an overview of the Proposed Action, a summary of anticipated issues, and a description of how the public could participate in the EIS process, including dates and locations for scoping meetings. The Navy also notified the public through advertisements published in *The Washington Post* newspaper (February 18, 19, and 20, 2022) and on Naval District Washington's website: https://ndw.cnic.navy.mil/WNY-Land-Acquisition/1/.

The public was invited to participate in both the NEPA and Section 106 of the National Historic Preservation Act (NHPA) processes. The Navy solicited public and agency comments during a scoping period from February 18, 2022 through March 21, 2022. Virtual scoping meetings were held on March 8 and March 9, 2022. The Navy received 14 comments. Respondents submitted their comments by postal mail, verbally at the virtual public scoping meetings via a court reporter, and by email. The Navy

considered comments received during the scoping period, including comments on alternatives, information, and analysis, during preparation of this EIS.

A more detailed description of the public scoping process and public comments is included in Appendix A. The comments received generally cover the following topics:

- Request for the Capitol Riverfront Business Improvement District to be involved in the NEPA process
- Support for a Navy Museum as a reuse of the parcel
- Maintaining the historic characteristics of the buildings under the transfer agreement
- Plans for access impacting the historic Navy Yard Wall
- Consideration of public access to the Anacostia Riverwalk Trail
- Comprehensive Transportation Review Scoping Form should be prepared for the potential land exchange and the private development in the WNY Southeast Corner to include: access and repair of the Anacostia Riverwalk Trail, vehicle and bike parking, and standards for sidewalks, roadways, landscaping, and lighting
- Request by D.C. Department of Transportation (DDOT) to be a cooperating agency[8]

The Navy has prepared this Draft EIS to assess the potential environmental impacts associated with the Proposed Action and to allow the opportunity for public review and comment. The Draft EIS review period began with a public notice published in the *Federal Register* indicating the availability of the Draft EIS, locations where hard copies are available for review, and how to access the document electronically. Ads were also placed in *The Washington Post* announcing the availability of the Draft EIS and how to access a copy of the Draft EIS.

Regarding this Proposed Action, the Navy is coordinating or consulting with: the U.S. Air Force; White House Communications Agency; the USEPA; Advisory Council on Historic Preservation (ACHP); National Park Service, National Capital Area; National Capital Parks – East; D.C. State Historic Preservation Officer (D.C. SHPO); DDOT; DOEE; D.C. Office of Planning; NCPC; U.S. Commission of Fine Arts (CFA); GSA; Advisory Neighborhood Commissions; Capitol Hill Restoration Society; Historic Anacostia Preservation Society; and Capitol Riverfront Business Improvement District.

The Navy's discussions with agencies and public involvement contributed to the development of the action alternatives and helped to identify potential environmental impact avoidance, minimization, and mitigation measures for the project. The Navy will continue to discuss issues and follow appropriate consultations associated with the Proposed Action and alternatives as the EIS process continues.

Appendix A includes agency consultation letters and responses, and Appendix B contains the traffic study. Appendix C includes results of consultation with D.C. SHPO and other consulting parties and a summary of the Phase IA archaeological assessment prepared by the Navy. Appendix D contains the noise study and Appendix E includes the air quality calculations.

[8] In the scoping letter, DDOT requested to be a cooperating agency in the EIS process. The Navy met with DDOT and reaffirmed their continuing role in the EIS process and, as a result, DDOT determined that they did not need to be a cooperating agency. Appendix A contains correspondence.

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2 Proposed Action and Alternatives

2.1 Proposed Action

The Navy proposes to obtain approximately 6 acres at land on the SEFC E Parcels to improve the overall AT posture of the WNY. By obtaining the SEFC E Parcels, the Navy would:

- improve the WNY AT posture by reducing the encroachment threat posed by planned, private development on the SEFC E Parcels;
- protect mission-critical activities conducted at the WNY from visual surveillance, and acoustic and electronic eavesdropping, and
- enhance the overall safety of personnel, facilities, and infrastructure at the WNY.

Should the Navy obtain ownership of the SEFC E Parcels, the Navy is considering three alternative uses for the acquired property: construction of a relocated Navy Museum, construction of administrative facilities, or maintaining the status quo (no new development).

2.2 Screening Factors

NEPA's 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 meeting the purpose and need require detailed analysis.

Potential alternatives that meet the purpose and need were evaluated against the following screening factors:

- Must improve overall AT posture of the WNY for existing and foreseeable missions and commands.
- If a land exchange is contemplated, must be consistent with the terms of the Fiscal Year (FY) 19 NDAA section 2845.
- If a land exchange is contemplated, shall only consider an exchange of the WNY assets that the Navy has determined are underutilized[9], and that are viable for redevelopment, based on feasible access by private entities.

2.3 Alternatives Carried Forward for Analysis

Based on review of potential alternatives against the screening factors, two action alternatives were identified and are analyzed in detail in this EIS: Alternative 1: Land Acquisition through Land Exchange, and Alternative 2: Direct Land Acquisition. Both action alternatives have the same three sub-alternatives that address reuse of the acquired property.

2.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. The Navy would not acquire or reuse the SEFC E Parcels. Instead, the planned, private development on the SEFC E Parcels would

[9] Underutilized refers to administrative areas and buildings that are not being used to full potential.

proceed as planned. The Navy is not involved with the private development on the SEFC E Parcels. Private development on the SEFC E Parcels has already been approved by local government in accordance with zoning ordinances and is currently scheduled to begin construction in 2023. This section provides details about the planned, private development on the SEFC E Parcels that were derived from several sources: SEFC Revised Master Plan 2nd Amendment (GSA, 2020), *Final Environmental Impact Statement for Development of the Southeast Federal Center* (GSA, 2004), as well as information provided by the developer. It is worth noting that the descriptions and estimated sizes provided for the planned, private development on the SEFC E Parcels is based on most recent information available but could change as the developer's plans progress. Moreover, the Navy has no control over any changes to the information presented in this description of the No Action Alternative.

The developer would construct planned mixed-use development on the SEFC E Parcels (Figure 2.3-1). This planned private development includes potential renovation of two historic buildings (Buildings 74 and 202) and construction of two new buildings. Renovated Building 202 would provide approximately 328,000 square feet of office space. Renovated Building 74 and two new buildings constructed at a height of approximately 110 feet would provide approximately 538,000 square feet of residential space (Table 2.3-1) (GSA, 2020). Approximately 581 parking spaces would be provided. The development and construction period is assumed to be 10 years, starting as early as 2023.

Table 2.3-1 No Action Alternative: Private Development on SEFC E Parcels

Proposed Activity	***Approximate Size (square feet)***	***Estimated Number of Residential Units[(1)]***	***Estimated Number of Workers[(2)]***
Construction of two new buildings on SEFC E Parcels for residential use	538,000	540	0
Renovation of historic Building 74 on SEFC E Parcels for residential use			
Renovation of historic Building 202 on SEFC E Parcels for office use	328,000	0	985
Total	866,000	540	985

Notes: 1. Average size for each residential unit on the SEFC E Parcels is assumed to be approximately 1,000 square feet (DoN, 2022a).
2. Number of workers for office space on the SEFC E Parcels is estimated using an assumption of 333 square feet per worker (DoN, 2022a).

Given the size of the three planned residential buildings, it is estimated that approximately 540 residential units would be constructed on the SEFC E Parcels. Using a factor of 2.3 residents per household (U.S. Census Bureau, 2021), it is estimated that approximately 1,240 residents would live at the SEFC E Parcels upon completion of construction. Considering the size of the planned office building, the estimated number of workers is approximately 985.

As the Navy would not have control over who occupied residential areas on the SEFC E Parcels, nearby mission-critical activities on the WNY could be exposed to activities that are inconsistent with the Navy's AT requirements. Moreover, the safety of personnel, facilities, and infrastructure on the WNY adjacent to the SEFC E Parcels would be degraded, thereby threatening national security.

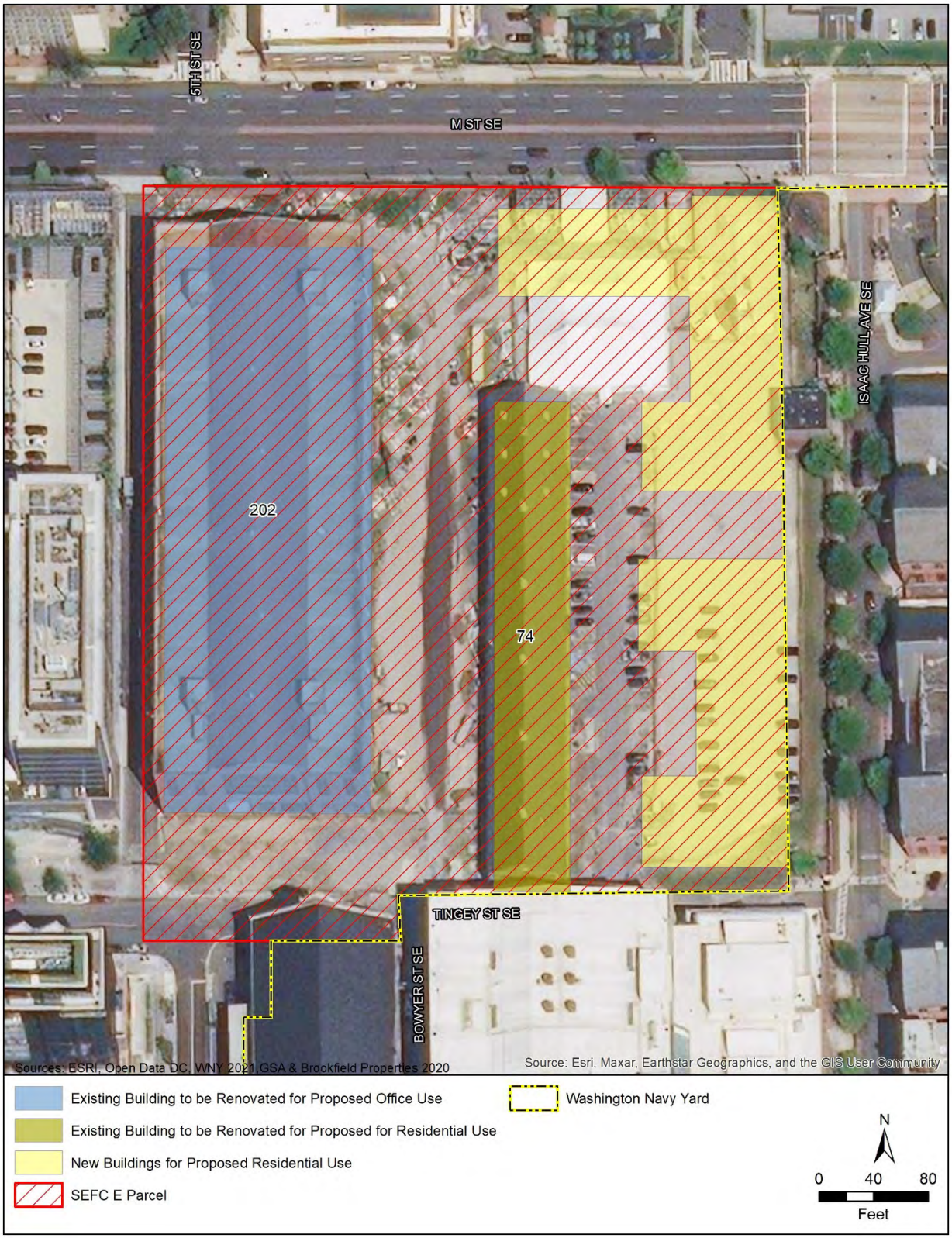


Figure 2.3-1 No Action Alternative: Private Development on the SEFC E Parcels

The No Action Alternative would not meet the purpose of and need for the Proposed Action; however, as required by NEPA, the No Action Alternative is carried forward for analysis in this EIS. The developer's planned development on the SEFC E Parcels is considered part of the No Action Alternative. As a result, for the No Action Alternative, this EIS analyzes the developer's planned development of the SEFC E Parcels to consider the consequences of the Navy not executing the Proposed Action.

2.3.2 Alternative 1: Land Acquisition through Land Exchange

Under Alternative 1, the Navy would obtain acquisition rights and ownership of SEFC E Parcels by exchanging certain underutilized properties within the WNY Southeast Corner, along with other considerations as necessary with the developer. Under this alternative, the Navy would acquire development rights to the approximately 6-acre SEFC E Parcels (Figure 2.3-2). The GSA would then transfer ownership of the SEFC E Parcels to the Navy via a federal-to-federal transfer. In exchange for the acquisition rights, the Navy would transfer and/or lease underutilized assets (approximately 15 acres) at the WNY Southeast Corner to the developer.

Alternative 1 includes the following elements:

- Land exchange of SEFC E Parcels for WNY Southeast Corner
- Relocation of functions from the WNY Southeast Corner to other areas on the WNY
- Future development on the WNY Southeast Corner by the private developer (see Section 2.3.2.1)
- In-kind considerations[10] at the WNY to be provided by the developer (see Section 2.3.2.2)
- Exchange option[11] for two JBAB parcels (see Section 2.3.2.3)
- Three different sub-alternatives for the Navy's future use of the SEFC E Parcels – referred to as Alternatives 1A (Relocated Navy Museum), 1B (Navy administrative development), and 1C (No development) (see Section 2.3.4)

Table 2.3-2 shows the exchange of buildings and structures, building sizes, building tenants, and number of personnel affected by the land exchange under Alternative 1. The Navy would obtain Buildings 74 and 202 while acquiring the approximately 6-acre SEFC E Parcels and perimeter wall. The developer would acquire approximately 15 acres on the WNY with the following assets by a combination of lease and transfer: Buildings 68, 70, 154, 166, 211, 218, Admiral's Barge Slipway, associated parking area (Building 405 and surface parking areas), part of the Riverwalk, and Piers 1 and 2 (Figure 2.3-3). Table 2.3-2 indicates which buildings and structures would be leased or transferred.

The WNY Southeast Corner is currently underutilized by the Navy and provides an opportunity for exchange comparable in value to that of the SEFC E Parcels. Transferring these assets to the developer would require relocation of current missions, tenants, and personnel to other areas of the WNY.

[10] In-kind considerations may include construction or maintenance of Navy real property.

[11] The Navy would provide the developer with an exchange option to acquire two parcels on JBAB should the Navy elect to divest these parcels in the future. Any future development of JBAB or a replacement site is conditioned on completing an appropriate NEPA analysis.

Figure 2.3-2 Alternative 1: SEFC E Parcels/WNY Southeast Corner Land Exchange

Table 2.3-2 Alternative 1: Buildings, Structures, Tenants, and Personnel Affected by the Land Exchange

Transaction	*Building/ Structure*	*Tenants to Be Relocated*	*Size*	*Number of Navy Personnel*
Navy Acquisition of SEFC E Parcels	74	Private Business Offices	19,300 sf	0
	202	Vacant	59,600 sf	
	Perimeter Wall	N/A	454 linear feet	
Navy Lease WNY Assets to Developer	68	Port Operations	2,464 sf	10
	70 (partial lease)	Naval History and Heritage Command	25,623 sf	12
	154	Family Line CNIC	7,603 sf	5
	Admiral's Barge Slipway	N/A	27,000 sf	0
	Piers 1 & 2, Riverwalk	N/A	43,941 sf*	0
Navy Transfer of WNY Assets to Developer	166	NSAW Police, Naval Supply Systems Command Fleet Logistics Center Washington D.C., NAVFAC WASH Public Works Department, NAVFAC WASH Human Resources Office, Chief of Naval Operations OP-09B2 (Naval History and Heritage Command), Hazardous Waste Storage Site	94,295 sf	319
	211	Morale, Welfare, and Recreation Catering Facility	18,673 sf	0
	218	Naval Sea Systems Command, Morale, Welfare, and Recreation Catering Facility, Navy Federal Credit Union	34,726 sf	127
	405 (South Garage)	N/A	380,000 sf	0
	Associated Surface Parking Areas	N/A	N/A	0
		TOTAL	**--**	**473**

Notes: CNIC = Commander, Navy Installations Command; N/A = Not Applicable; NAVFAC = Naval Facilities Engineering Systems Command; SEFC = Southeast Federal Center; sf = square feet; WNY = Washington Navy Yard.
*Square feet derived from GIS data.

Figure 2.3-3 Alternative 1: Lease/Transfer Areas and Buildings/Structures Affected by the Land Exchange

The following represent some of the existing functions within the WNY Southeast Corner that would be relocated to other areas within the WNY as part of the Proposed Action (see Table 2.3-2).

- All personnel in affected buildings would be moved to other buildings on the WNY. The majority of personnel being relocated currently reside in Building 166, which is in very poor condition. Building 212 would absorb 319 personnel. Interior renovations to Building 212 may be required to accommodate relocated personnel. Other buildings may be considered to receive personnel and tenants. These relocations may occur with or without a land exchange due to the condition of Building 166 and efforts to consolidate space and reduce footprint.
- The parking lot area of Building 166 contains the Hazardous Waste Storage Site for the WNY. The WNY is considered a large-quantity generator by the USEPA. The fenced-in area is the central storage point for all hazardous waste generated on the WNY. As hazardous waste is generated by the various commands and tenants, it is collected and moved to the area behind Building 166, where it is cataloged, inventoried, and prepared for transportation to a disposal facility. The storage area consists of: a plumbed safety shower with heated water for winter use; open areas for storage of bulky items; three banks of CONEX boxes (i.e., steel shipping containers) for a total of seven bays; and storage space for items not requiring shelter from the elements. The CONEX boxes house spill response supplies used across the six installations in NSAW and provide compartmentalization of incompatible waste streams.

  Currently, all hazardous waste generated on the WNY is transported internally to this location. Shipping documentation is not required for transport to the storage area as it is not transported on public roadways. Relocation of the Hazardous Waste Storage Site would require equivalent internal access, as well as accommodation of large trucks (30-foot) for pickup and deliveries. The site must also comply with federal and D.C. regulations for hazardous waste storage areas, including being secured and located above the floodplain. The Navy would identify a new location for the NSAW Universal Hazardous Waste Storage Site, relocate the facility, and obtain a Resource Conservation and Recovery Act (RCRA) permit prior to any land exchange. The Navy is in the process of evaluating potential locations on the WNY. The Navy will conduct appropriate NEPA analysis for this action.

2.3.2.1 Private Development on the WNY Southeast Corner under Alternative 1

After the land exchange, private development on the WNY Southeast Corner would include construction of mixed-use (residential, office, commercial, retail) buildings on transferred property and commercial/retail on leased property. The WNY fence would be relocated between the WNY and private development on the WNY Southeast Corner resulting in an adjustment to the installation boundary and revised AT measures and general physical security requirements. AT standards consist of restrictions for on-site planning, including stand-off distances, building separation, unobstructed space, drive-up and drop-off areas, access roads, and parking; structural design; structural isolation; and electrical and mechanical design. Potential land use in the WNY Southeast Corner would be sufficient distance from the installation's most sensitive operations.

Figure 2.3-4 shows conceptual plans for development at the WNY Southeast Corner. Conceptual plans depict the maximum level of development proposed for the site with elements similar to those in the existing private development concept for the SEFC E Parcels (e.g., residential and office buildings). The actual level of development at the WNY Southeast Corner could be less than shown on Figure 2.3-4 and would be dependent upon the review and approval by the Navy and D.C. Agencies (e.g., D.C. SHPO, NCPC, CFA, DDOT, DOEE, among others).

Figure 2.3-4 Alternative 1: Conceptual Layout for Private Development on the WNY Southeast Corner

For analysis purposes, the Navy estimated the maximum level of private development in the WNY Southeast Corner would include the features described in Table 2.3-3. To undertake these projects, three buildings would potentially be renovated and three new buildings may be constructed. Subject to the outcome of consultation on potential effects on historic properties under Section 106 of the NHPA (see Section 3.3, *Cultural Resources*), the developer may renovate Building 166 or demolish it to allow construction of a new office building. The developer estimates construction would occur in phases over a 10-year period from 2023 to 2033.

Table 2.3-3 Alternative 1: Private Development on the WNY Southeast Corner

Proposed Activity	*Approximate Size (square feet)*	*Estimated Number of Residential Units*	*Estimated Number of Employees*
Construction of New Residential (Building 1)	598,920	650	13[(1)]
Construction of New Residential (Building 2)	598,920	650	13[(1)]
Construction of New Office Building	400,000	0	1,600[(2)]
Renovation of Building 405 for Parking	380,000	0	0
Renovation of Buildings 68/70/154 for Retail, and Retail on Ground Floor of Two New Residential Buildings	60,000	0	150[(3)]
Total	2,037,840	1,300	1,776

Notes: 1. Number of employees per dwelling unit was estimated using 1 office plus 1 maintenance worker per 100 units (NAA, 2020).
2. Number of employees for office space on the WNY Southeast Corner was estimated using an assumption of 250 square feet per employee (Aquila, 2022).
3. Number of employees for retail space on the WNY Southeast Corner was estimated using an assumption of 400 square feet per employee (Metropolitan Washington Council of Governments, 2005).

Given the size of the two proposed residential buildings, the Navy estimates 1,300 residential units would be constructed on the WNY Southeast Corner. Using a factor of 2.3 residents per household (U.S. Census Bureau, 2021), the Navy estimates 2,990 residents would live at the WNY Southeast Corner upon completion of construction. Considering the size of the proposed office building and retail space, approximately 1,776 employees would work at the WNY Southeast Corner upon completion of construction.

2.3.2.2 In-Kind-Considerations at WNY Provided by the Developer under Alternative 1

As part of the land exchange agreement, and in accordance with Section 2845 of the 2019 NDAA, the developer would provide other in-kind considerations to the Navy in order to make the deal equitable for both parties. Types of in-kind considerations may include construction or maintenance of real property, and the reduction of expenses (DoD Financial Management Regulation 7000.14-R).

Real property in-kind consideration may involve alteration, repair, or improvement of property leased instead of rental payments. Real property in-kind consideration may also include maintenance or restoration of property or facilities, as well as construction of new facilities. Expense-type in-kind consideration may include real property maintenance services, or other services relating to activities that would occur on the leased property. Figure 2.3-5 and Table 2.3-4 show the in-kind considerations that may be provided by the developer to the Navy under Alternative 1.

Figure 2.3-5 Alternative 1: In-Kind-considerations at WNY Provided by the Developer

Table 2.3-4 Alternative 1: List of Potential In-Kind-considerations Provided by Developer to Navy

Building/Structure	*In-Kind-consideration*	*Approximate Size*
Building 405[(1)]	Add two floors and complete all necessary renovations to Building 405 (South Garage) for a total of 1,608 spaces (addition of approximately 400 spaces from existing conditions). After renovation, the Navy would have exclusive access to 415 spaces and the developer would have exclusive access to 928 spaces. In addition, 265 spaces would be shared spaces (Navy and public) from 9 a.m. to 5 p.m.	380,000 square feet
WNY Fence and Entry Control Point	Relocate the WNY fence and Entry Control Point to accommodate secure separation between the WNY facilities and private development.	1,607 linear feet
Building 386	Rehabilitate approximately 342 existing but unusable spaces in Building 386 (North Garage) for exclusive Navy use of this parking garage. Building 386 would remain within the fence line for the WNY.	353,962 square feet
Piers 1 and 2	Rehabilitate historic Piers 1 and 2 as connection points to existing and future private waterfront development. Rehabilitation would not involve any in-water work or construction activities. Rehabilitation of historic Piers is dependent upon the outcome of the Section 106 consultation.	22,000 square feet
Anacostia Riverwalk Trail	Repair the Anacostia Riverwalk Trail (Riverwalk) to continue its use as a connection point between existing and future waterfront development and buildings, the Riverwalk, and the future 11th Street Bridge Park.	1.6 Acres
Stormwater Management System	Integrate private stormwater management system with the Navy stormwater system to mitigate impacts of development on the WNY.	N/A

Notes: N/A = Not Applicable; WNY = Washington Navy Yard.
1. Additional floors and parking spaces would be subject to local agencies approval during Master Plan update process.

2.3.2.3 Exchange Option for Two JBAB Parcels under Alternative 1

As part of the SEFC E Parcels/WNY Southeast Corner land exchange under Alternative 1, the Navy would provide the developer with an option to acquire two parcels on JBAB totaling approximately 32 acres (parcel 1 is approximately 12 acres, and parcel 2 is approximately 20 acres) (Figure 2.3-6). The acquisition of these JBAB parcels would be subject to certain conditions identified in the legal land exchange agreement between the Navy and the developer, including a separate, future NEPA analysis, a national security review, and other restrictive easements to protect existing and future military operations. If the Navy and the developer cannot agree on the requirements for construction on the JBAB parcels, the Navy shall identify replacement parcel(s). These potential parcels have not been identified. The developer has 10 years to exercise its JBAB option(s).

Should development proceed on both JBAB parcels as currently envisioned, the developer could propose to construct 3.6 million gross square feet spread over approximately 25 acres. The remaining 7 acres comprises roads, waterfront and open space. All future development would be subject to zoning approval in Washington, D.C. and potentially more restrictive requirements based on the location adjacent to tenants on JBAB. Despite these potential restrictions, it is reasonable to assume that development would be dense, adding to a highly developed area.

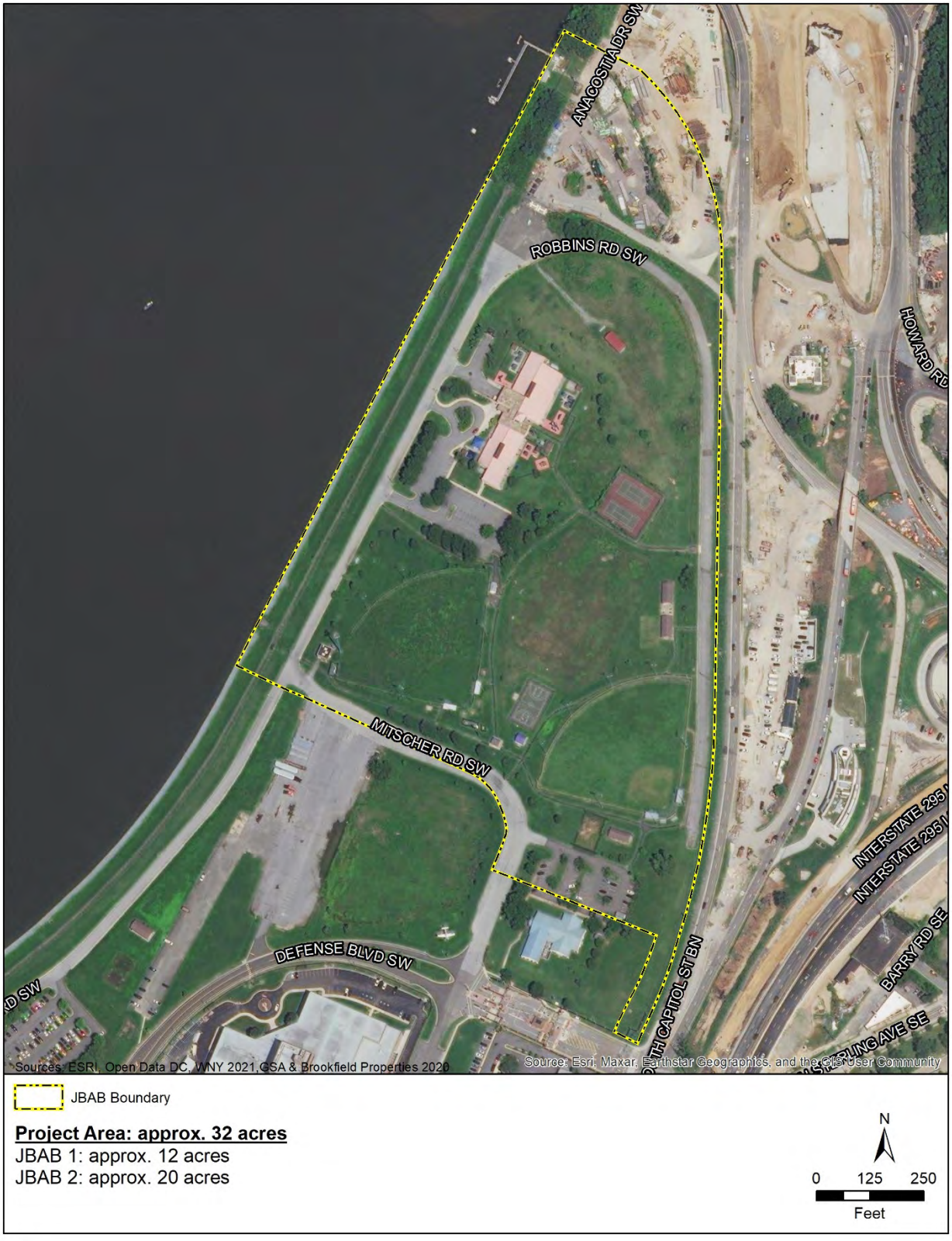


Figure 2.3-6 Alternative 1: Exchange Option for JBAB Parcels

The JBAB parcels currently consist of a child development center, a fuel pier, several ballfields, and recreational open space. Detailed assessment of existing conditions, such as a traffic analysis and an environmental condition of property, would not be prepared until a proposed action was identified and approved by the Navy. However, it is reasonable to conclude based on the site's location and generally described proposed use and density, there would be impacts to transportation, recreation, land use, noise, air quality, socioeconomics, utilities, and geologic resources, among others.

As summarized above, the construction and occupancy of over 3 million square feet of development on the JBAB parcels could potentially result in adverse impacts to several resources. However, substantive site-specific NEPA analysis of potential construction of JBAB is not appropriate in this EIS because of the speculative nature of any future development, including whether conveyance of the JBAB parcels even occurs. Moreover, the legal land exchange agreement between the Navy and the developer specifically conditions any future development of JBAB or a replacement site on completing an appropriate NEPA analysis. As a result, no further analysis will be conducted for the JBAB exchange option in this EIS.

2.3.3 Alternative 2: Direct Land Acquisition

Under Alternative 2, the Navy would acquire the rights to the SEFC E Parcels from the developer through purchase or condemnation, and would receive the SEFC E Parcels from the GSA through a federal-to-federal transfer (Figure 2.3-7). No WNY property would transfer to the developer; no missions or tenants would need to be relocated under this alternative. Regardless of which direct acquisition method is selected, the environmental impacts would be the same. Alternative 2 includes the following elements:

- Direct acquisition of all rights to the SEFC E Parcels and federal-to-federal transfer of the parcels.
- Three different sub-alternatives for the Navy's future use of the SEFC E Parcels – referred to as Alternatives 2A, 2B, and 2C (see Section 2.3.4).

2.3.4 Sub-alternatives for Both Alternative 1 and Alternative 2

The Navy is considering three sub-alternatives for the SEFC E Parcels after acquisition:

- Sub-alternative A: Reuse of the SEFC E Parcels with relocated Navy Museum
- Sub-alternative B: Reuse of the SEFC E Parcels with Navy Administrative Development
- Sub-alternative C: No Development on SEFC E Parcels

Sub-alternatives A, B, and C, when combined with Alternative 1 are referred to as Alternatives 1A, 1B, and 1C, and when combined with Alternative 2 are referred to as Alternatives 2A, 2B, and 2C. The design of Navy facilities on the SEFC E Parcels under Sub-alternatives A and B would include AT standards.

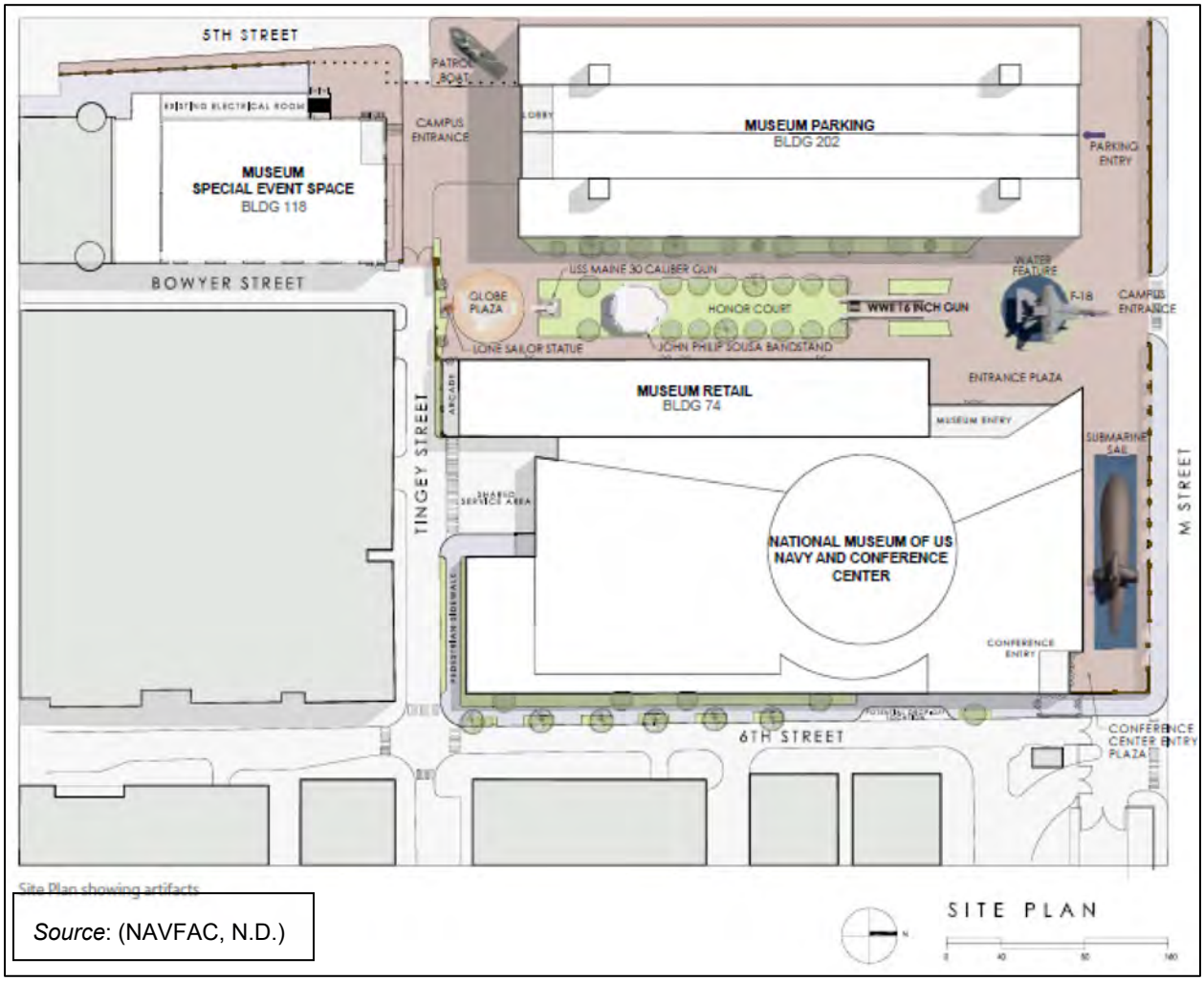
The analysis of impacts from each sub-alternative is different for Alternative 1 and Alternative 2 as described below:

- Impact analysis for Alternative 1 and sub-alternatives includes impacts from Navy reuse of SEFC E Parcels in addition to private development on the WNY Southeast Corner and upgrades at the WNY provided by the developer as in-kind considerations (associated with land acquisition through land exchange).
- Impact analysis for Alternative 2 and sub-alternatives only includes impacts from Navy reuse of SEFC E Parcels (associated with direct land acquisition).

Figure 2.3-7 Alternative 2: Direct Land Acquisition of SEFC E Parcels

2.3.4.1 Sub-alternative A: Reuse of SEFC E Parcels with Construction and Operation of Relocated Navy Museum

Should the Navy acquire the SEFC E Parcels, the Navy could enter into a lease agreement with the Navy Museum Development Foundation to relocate the existing National Museum of the U.S. Navy to the SEFC E Parcels (Figure 2.3-8). The relocated museum would also involve Building 118, which is an existing Navy-owned building outside, but adjacent to the WNY fence line and not within the SEFC E Parcels.



Source: (NAVFAC, N.D.)

Figure 2.3-8 Sub-alternative A: Conceptual Layout of Proposed Buildings for Relocated Navy Museum

Under Sub-alternative A, one new building would be constructed, and three existing buildings may be renovated for the new museum as described in Table 2.3-5. Construction would be phased over a 10-year period starting as early as 2023.

Table 2.3-5 Sub-alternative A: Proposed Building Construction and Renovation for Relocated Navy Museum on SEFC E Parcels

Proposed Activity	*Approximate Size (square feet)*	*Estimated Number Museum Employees*	*Estimated Number of Annual Visitors*
Construction of new building on SEFC E Parcels for museum and conference center	270,000	80	1,100,000
Renovation of historic Building 74 on SEFC E Parcels for museum retail			
Renovation of historic Building 202 on SEFC E Parcels for parking (400-500 spaces)	59,600		
Renovation of Building 118 on the WNY for museum special event space	18,000		
Totals	347,600	80	1,100,000

Notes: SEFC = Southeast Federal Center; WNY = Washington Navy Yard.

The relocated Navy Museum would be outside of the WNY fence line and open for public access. The new museum campus would have two main entrances, one from M Street, and one from Tingey Street. The existing Navy Yard Wall in front of the SEFC E Parcels would be retained for continuity, with openings for pedestrian access to the museum and vehicular access to the parking garage from M Street. The Riverwalk would provide pedestrian access from the area south of the museum.

A new building for the museum and conference center would be built in the empty parcels adjacent to Building 74. The new museum building would have a maximum potential height of 110 feet. Building 74, which is currently used for private office spaces, would become the museum shop and café on the ground floor. The businesses that are currently located in Building 74 would be required to relocate (see Table 2.3-2). The second floor would house a Navy-themed restaurant. Visitors would be able to enter the retail spaces without entering the museum, allowing for extended retail hours after the museum is closed. Building 202 is a five-story building and is currently vacant. The lower levels of Building 202 may accommodate 400 to 500 parking spaces on four levels for museum personnel and visitors. The upper levels of Building 202 may house museum administration space and other functions. The design of museum facilities would comply with Navy requirements for Leadership in Energy and Environmental Design.

The Navy Museum Development Foundation prepared a Visioning Plan that indicated attendance at the current museum location is less than 100,000 visitors per year; however, with a modern facility that is easily accessible, the number of visitors could increase ten-fold annually (NAVFAC, N.D.). The museum would operate daily and could have up to 1.1 million annual visitors (NAVFAC, N.D.).

The current National Museum of the United States Navy is located in Buildings 70 and 76 of the WNY. The museum does not meet facility standards (Facility Criteria 4-760-10N, Navy Museums and Historic Resource Facilities, December 1, 2013), is too small (resulting in overcrowded displays, limits to artifact sizes), and can only present limited periods of Naval history. The museum lacks energy-efficient climate controls, exposes sensitive artifacts to ultraviolet light, is prone to water leaks, requires substantial maintenance and renovations, and is within the Anacostia River floodplain. In addition, the museum location presents significant public access challenges. Since it is behind the secure perimeter of the

WNY, a security clearance process is required for visitors. Moreover, the museum is not within a comfortable walking distance from Metrorail stations.

Leasing the SEFC E Parcels for a Navy Museum would be considered a use compatible with the WNY AT requirements as the Navy can control the development and occupants of the lease. Sub-alternative A would both (1) improve the WNY AT posture to protect mission-critical activities conducted at WNY from encroachment and enhance the safety of personnel, facilities, and infrastructure at the WNY; and (2) provide an opportunity for the Navy to relocate the Navy Museum to an ideal location.

2.3.4.2 Sub-alternative B: Reuse of SEFC E Parcels with Construction and Operation of Navy Administrative Development

Should the Navy acquire the SEFC E Parcels, the Navy could incorporate the SEFC E Parcels within the WNY fence line and construct administrative offices for Navy or other governmental agency use (Figure 2.3-9). Constructing administrative offices on the SEFC E Parcels would be considered a use compatible with the WNY AT requirements. The design of administrative facilities would comply with Navy requirements for Leadership in Energy and Environmental Design. Pedestrian and vehicular access would be provided by existing gates and access points within the WNY; no new vehicular access to the SEFC E Parcels from local roadways would be provided. Based on the additional 4,275 staff and the need to bring the WNY into compliance with parking ratios, it is anticipated that approximately 80 parking spaces would be provided.

Currently, the WNY, like many Navy installations, is undergoing a shift under the Vice Chief of Naval Operations' Memorandum outlining efforts for workforce optimization and administrative office reduction. The Vice Chief of Naval Operations memorandum states a goal to reduce administrative office requirements by 20 percent (Vice Chief of Naval Operations, 2021). Nevertheless, there could be a future demand for newer, consolidated administrative facilities as other installations within Naval District Washington undergo a reduction in footprint. Another aspect is that constructing administrative space on the SEFC E Parcels could address National Capitol Region consolidation to federal land to reduce leasing. The Navy currently leases approximately 286,000 square feet of administrative space in six different locations across the Capitol Region, primarily in the Northern Virginia area. All these leases are currently set to expire within the next 5 years (Naval District Washington, 2021). Leased administrative space could be reduced by consolidating and relocating missions and tenants to the SEFC E Parcels which would result in cost-saving measures. Relocating missions and tenants into Navy-owned buildings within the WNY fence line would also provide increased security for those missions.

Under Sub-alternative B, a new building would be constructed, and two existing buildings would be renovated for administrative offices as described in Table 2.3-6. Construction would to be phased over a 10-year period. The fence relocation could start as early as 2023 while phased construction and renovation is anticipated to begin later in the 2029 to 2030 timeframe. Private offices for businesses that are currently located in Building 74 would be required to relocate under Sub-alternative B (see Table 2.3-2).

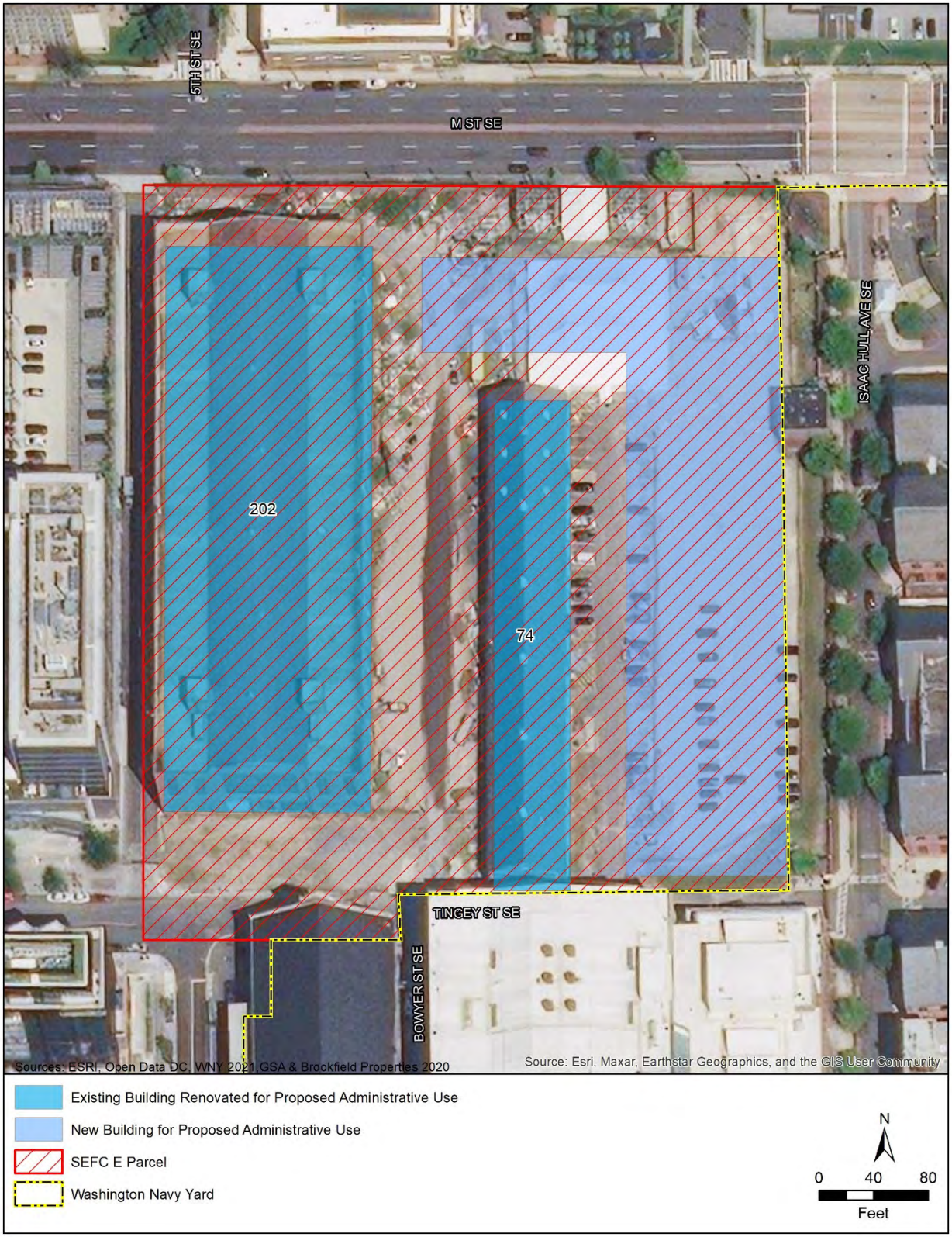


Figure 2.3-9 Sub-alternative B: Proposed Building Construction and Renovation for Navy Administrative Offices on SEFC E Parcels

Table 2.3-6 Sub-alternative B: Proposed Building Construction and Renovation for Navy Administrative Offices on SEFC E Parcels

Proposed Activity	*Approximate Size (square feet)*	*Estimated Number of Employees[(1)]*
Construction of a new building on SEFC E Parcels for administrative offices	189,000	1,375
Renovation of historic Building 74 on SEFC E Parcels for administrative offices	28,500	200
Renovation of historic Building 202 on SEFC E Parcels for administrative offices	364,500	2,700
Total	582,000	4,275

Notes: SEFC = Southeast Federal Center.

2.3.4.3 Sub-alternative C: No Development on SEFC E Parcels

Should the Navy acquire the SEFC E Parcels, the Navy could incorporate the land within the WNY fence line but leave the parcels in their current state with no foreseeable development planned. The WNY fence line would be relocated and utilities for Buildings 74 and 202 would be connected to WNY utility infrastructure for the purpose of building maintenance. The existing brick wall along M Street would remain the same. Private offices for businesses that are currently located in Building 74 would be required to relocate under Sub-alternative C (see Table 2.3-2). Both Buildings 74 and 202 would remain empty with periodic basic maintenance and repairs. This proposed reuse of the SEFC E Parcels with no development would be considered a use compatible with WNY AT requirements.

2.4 Preferred Alternative

The Navy's Preferred Alternative is Alternative 1A: Land Acquisition through Land Exchange, which includes the exchange of the SEFC E Parcels for the WNY Southeast Corner, private development and upgrades at the WNY provided by the developer as in-kind considerations, and reuse of the SEFC E Parcels with construction and operation of a relocated Navy Museum. Alternative 1A meets the purpose and need to improve the overall WNY AT posture, and protects WNY mission-critical activities from visual surveillance and acoustic and electronic eavesdropping. Alternative 1A also enhances the overall safety of personnel, facilities, and infrastructure at the WNY by constructing and operating compatible development on the SEFC E Parcels.

Land acquisition through land exchange (Alternative 1) is preferred over direct land acquisition (Alternative 2) for multiple reasons. For one, Alternative 1 meets the requirements of Section 2845 of the 2019 NDAA, which specifically provides for the acquisition of the SEFC E parcels via exchange of real property that the Navy considers appropriate to protect the interests of the United States. This grants the Navy discretion to leverage the Navy's existing, underutilized property rather than seeking an appropriation to purchase the acquisition rights from the developer.. In contrast, Alternative 2 would require appropriated funds that could be used for other national priorities.

Additionally, in Alternative 1, the Navy would acquire 6 acres of private land in exchange for transfer/lease of 15 acres of federal land to a developer, which would become developable and taxable private land that would benefit the local community. Conversely, Alternative 2 would change 6 acres of developable and taxable private land to non-taxable federal land. Alternative 1 would also provide the opportunity for in-kind considerations from the developer, such as upgrades to the Riverwalk and Piers, which would benefit the Navy and the local community.

For the reuse of the SEFC E Parcels, Sub-alternative A (Navy Museum) is preferred over Sub-alternatives B (Navy administrative facilities) and C (no development) because Sub-alternative A allows the Navy to meet a long-term need of relocating the existing museum. Relocating the Navy Museum would benefit both the Navy and the surrounding community by addressing the limitations of the existing museum, providing a location for a new, world-class museum for public enjoyment, and bringing potential retail and commercial amenities to the local area.

2.5 Alternatives Considered but not Carried Forward for Detailed Analysis

The following alternatives were considered, but not carried forward for detailed analysis in this EIS as they did not meet the purpose and need for the Proposed Action.

- Relocate missions and tenants off the WNY. This would involve the relocation of sensitive Navy missions and tenants located along the northwest perimeter of the WNY and close to the SEFC E Parcels, off of, or elsewhere on the WNY. This alternative does not improve the overall AT posture of the WNY because the commercial development would still proceed on the SEFC E Parcels, creating an encroachment threat to the WNY fence line. In addition, any such wholesale relocation of Navy missions and tenants would be exorbitantly expensive and could not be accomplished before private development of the SEFC E Parcels would introduce the threat of visual surveillance, and acoustic and electronic eavesdropping.
- Acquire an easement on Tingey Street and/or a portion of the SEFC E Parcels. Acquisition of an easement on Tingey Street alone does not improve the overall AT posture of the WNY, nor provide a sufficient buffer between the proposed commercial development and the Navy missions and tenants adjacent to the SEFC E Parcels to protect against physical threats, visual surveillance, and acoustic and electronic eavesdropping. There is no portion of the SEFC E Parcels less than the whole that would satisfy the project purpose and need; therefore, this is not a reasonable alternative.
- Exchange Only the Navy JBAB parcels (see Figure 1.2-1) for the SEFC E Parcels. Due to the JBAB parcels' adjacency to certain sensitive missions and tenants on the joint base, there would be constraints on the type and extent of development. The uncertainty associated with potential development on the JBAB parcels makes the valuation of the parcels too speculative to expect a successful exchange pursuant to Section 2845 of the 2019 NDAA. Therefore, this alternative is not considered reasonable.
- Exchange both the WNY Northeast Corner and WNY Southeast Corner for the SEFC E Parcels. Unlike the WNY Southeast Corner, the Navy has robust plans for additional future use of the WNY Northeast Corner. As such, this alternative does not meet the screening criteria, which states that the Navy can only consider an exchange of underutilized WNY assets. Therefore, this is not a reasonable alternative.
- Building hardening. This alternative is not reasonable because even a "hardened" building involving enhanced construction, renovation, and retrofitting of those buildings alone would not improve the overall AT posture of the WNY, nor would it remove the threat of visual surveillance, and acoustic and electronic eavesdropping to the missions and tenants in the buildings adjacent to the SEFC E Parcels.

2.6 Best Management Practices Included in Proposed Action

This section presents an overview of the best management practices (BMPs) incorporated into the Proposed Action in this document. BMPs are existing policies, practices, and measures the Navy would adopt to reduce the environmental impacts of designated activities, functions, or processes. Although BMPs mitigate potential impacts by avoiding, minimizing or reducing/eliminating impacts, BMPs are distinguished from potential mitigation measures because BMPs are (1) existing requirements for the Proposed Action, (2) ongoing, regularly occurring practices, or (3) not unique to this Proposed Action. In other words, the BMPs identified in this document are inherently part of the Proposed Action and are not potential mitigation measures proposed as a function of the NEPA environmental review process for the Proposed Action. Table 2.6-1 includes a list of BMPs. Mitigation measures are discussed separately in Chapter 3.

BMPs include actions required by federal or local law or regulation. The recognition of the general management measures prevents unnecessarily evaluating impacts that are unlikely to occur. For the Proposed Action, BMPs are presented for the proposed land exchange and the Navy's proposed reuse of the SEFC E Parcels. These BMPs do not apply to the developer's proposed development on the WNY Southeast Corner; instead, the developer would comply with the existing covenant provisions for development of the WNY Southeast Corner related to environmental protection, including all relevant regulations governing development in Washington D.C.

Table 2.6-1 Navy Best Management Practices

BMP	*Description*	*Impacts Reduced/Avoided*
Fugitive dust control	Examples include staged construction/demolition site to minimize exposed areas, watering soil for dust suppression, covering exposed dirt or storage piles, and rinsing vehicles before leaving the construction site.	Control particulate matter emissions during construction.
Sediment and erosion controls	Examples include use of perimeter controls, site stabilization, storm outlet protection, dust control, check dams, mulching, and seeding.	Reduce sediment-laden stormwater runoff into the Anacostia River during construction.
Good housekeeping for tools and equipment	Ensure that all on-site equipment is in good working order and is regularly inspected, cleaned, repaired, and/or replaced, as necessary.	Reduce potential for equipment to leak petroleum or hazardous fluids in soil or the Anacostia River, and promotion of healthy and safe working environment during construction.
Engine Maintenance	The construction contractor would maintain and tune engines per manufacturer's specifications to perform at USEPA certification level.	Reduce air emissions from construction equipment and vehicles.
Vehicle Idling Limits	Limit engine idling of any diesel-powered on-road vehicle at a given location. The contractor would post signs within designated queuing areas and the construction site to remind equipment operators of the idling limit.	Reduce air emissions from construction vehicles.
Alternative Fuels	The construction contractor would use alternative-fueled and electric construction equipment where feasible.	Reduce air emissions from construction equipment.

Table 2.6-1 Navy Best Management Practices

BMP	*Description*	*Impacts Reduced/Avoided*
LID and green infrastructure	Examples include permeable pavements, rain gardens, and tree boxes. Trees removed during development/construction would be replaced/replanted according to NSAW Integrated Natural Resources Management Plan and NCPC, DOEE guidelines.	Manage stormwater volume, preserve hydrology, increase bio-infiltration, and preserve original tree canopy coverage/habitat.
Achieve LEED Silver Certification	Navy development would be constructed to LEED Version 4.1 Silver, which encourages energy-efficient and sustainable buildings (U.S. Green Building Council, 2022).	Reduce air emissions from energy usage in building operations.
CWA Permits	All work would adhere to performance requirements of the CWA, Section 401 Water Quality Certification and Section 402 NPDES. No in-water work such as the renovation or demolition of Piers, floodwall, or boardwalk would begin until after issuance of regulatory authorizations.	Manage sedimentation, siltation, turbidity, pollution, and other impacts to the Anacostia River.

Notes: CWA = Clean Water Act; DOEE = D.C. Department of Energy & Environment; LEED = Leadership in Energy and Environmental Design; LID = Low Impact Development; NCPC = Naval Support Activity Washington; NPDES = National Pollutant Discharge Elimination System; NSAW = Naval Support Activity Washington; USEPA = United States Environmental Protection Agency.

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3 Affected Environment and Environmental Consequences

This chapter presents a description of the environmental resources and baseline conditions that could be affected, and an analysis of the potential direct and indirect effects of each alternative. All potentially relevant environmental resource areas were initially considered for analysis in this EIS. In compliance with NEPA, and CEQ and Department of the Navy regulations and policies for implementing NEPA, the discussion of the affected environment (i.e., existing conditions) addresses only 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.

For the environmental consequences discussion in this chapter, the Navy considered both the context and intensity of the potential impacts. Context means that the significance of an action needs to be analyzed in several settings such as society as a whole, the affected region, the affected interests, and the locality. The significance of an impact 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 considered along with the potential amount of change. In general, the more sensitive the context, the less intense a potential impact would need to be, to be considered significant. Likewise, the less sensitive the context, the more intense a potential impact would need to be, to be considered significant.

This chapter includes an analysis of potential impacts on transportation, cultural resources, land use/zoning, hazardous materials and wastes, water resources, noise, air quality, socioeconomics, environmental justice, and utilities and infrastructure.

Alternative 1 addresses potential impacts from:

- Land acquisition through land exchange
- Relocation of functions from the WNY Southeast Corner to other areas on the WNY
- Future development on the WNY Southeast Corner by the private developer
- In-kind considerations at the WNY to be provided by the developer
- Three different sub-alternatives for the Navy's future use of the SEFC E Parcels (Figure 3.1-1):
    - Construction and operation of relocated Navy Museum (Sub-alternative A) – referred to in this EIS as Alternative 1A (Preferred Alternative)
    - Construction and operation of the Navy administrative development (Sub-alternative B) – referred to in this EIS as Alternative 1B
    - No development (Sub-alternative C) – referred to in this EIS Alternative 1C

Alternative 2 addresses potential impacts from:

- Direct land acquisition
- Three different sub-alternatives for the Navy's future use of the SEFC E Parcels (Figure 3.1-1):
    - Construction and operation of relocated Navy Museum (Sub-alternative A) – referred to in this EIS as Alternative 2A
    - Construction and operation of the Navy administrative development (Sub-alternative B) – referred to in this EIS as Alternative 2B
    - No development (Sub-alternative C) – referred to in this EIS as Alternative 2C

NO ACTION ALTERNATIVE:

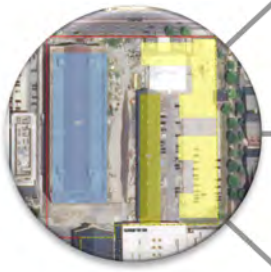
- Developer would construct the planned mixed-use development (several mixed-use buildings up to 110 feet in height) on SEFC E Parcels.

ALTERNATIVE 1 – LAND ACQUISITION THROUGH LAND EXCHANGE:

- Relocation of functions from the WNY Southeast Corner to other areas on the WNY
- Private development at the WNY Southeast Corner to be provided by the developer
- In-kind considerations at the WNY to be provided by the developer

ALTERNATIVE 2 – DIRECT LAND ACQUISITION:

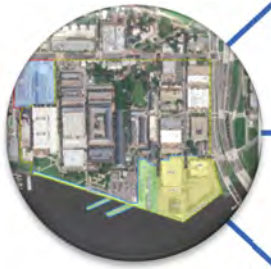
- Navy would purchase the SEFC E Parcels acquisition rights from the developer
- Navy would receive the SEFC E Parcels from GSA
- No land exchange would occur



Construction — 2 new residential buildings

Renovation — Historic Bldg 74 for residential use

Renovation — Historic Bldg 202 for office use



Alternative 1A — Construction and operation of relocated Navy Museum

Alternative 1B — Construction and operation of the Navy administrative develoment

Alternative 1C — No development

Alternative 2A — Construction and operation of relocated Navy Museum

Alternative 2B — Construction and operation of Navy administrative development

Alternative 2C — No development

Figure 3.1-1 Potential Impacts Addressed under Each Alternative

3.1 Resources not Addressed in Detail

Potential impacts to the following resource areas are considered to be negligible or nonexistent so they were not further analyzed in detail in this EIS.

3.1.1 Biological Resources

The WNY and the SEFC E Parcels are located in fully developed urban settings presenting limited and generally poor-quality habitat. Vegetation consists of maintained lawn, ornamentals, and a few trees. Any tree removal under the action alternatives would be mitigated in accordance with D.C. agencies requirements depending on tree size and condition rating. For example, if the Navy removed a 20- to 25-inch oak, the Navy would have to plant 5 to 6 replacement trees. Wildlife present would be common species and accustomed to living in urban and disturbed areas. No threatened or endangered species are known to inhabit the WNY. No loss of habitat would occur with construction under Alternatives 1A, 1B, 2A, and 2B and impacts to plant or animal species would not be expected. Furthermore, no wetland habitat would be disturbed. Stormwater management BMPs would reduce silt and total suspended solids that could reach receiving water bodies during construction. Therefore, there would be negligible impacts to biological resources.

3.1.2 Visual Resources

Visual resources include the natural and built features of the landscape visible from public views that contribute to the visual quality of an area. Visual perception is an important component of environmental quality that could be changed by implementing the Proposed Action. Visual impacts occur as a result of the relationship between people and the physical environment. Because the Proposed Action would be consistent with the existing visual character of the area, visual impacts would be minor. Visual impacts to the historic properties in the Area of Potential Affect (APE) are discussed in Chapter 3.3, *Cultural Resources*.

3.1.3 Airspace

Airspace includes current uses and controls of the airspace. Airspace, which is defined in vertical and horizontal dimensions and also by time, is considered to be a finite resource that must be managed for the benefit of all aviation sectors including commercial, general, and military aviation. The Proposed Action would not impact airspace.

3.1.4 Public Health and Safety

Public health and safety includes consideration for any activities, occurrences, or operations that have the potential to affect the safety, well-being, or health of members of the public. A safe environment is one in which there is no, or optimally reduced, potential for death, serious bodily injury or illness, or property damage. The primary goal is to identify and prevent potential accidents or impacts to the general public. Construction and operations that would occur on Navy property would not be open to the public and would not pose environmental health and safety risks to the general public or children. Potential private development would follow standard BMPs to protect workers, the general public, and children. With these standard procedures, impacts to public health and safety would be minimized.

3.1.5 Geological Resources

Geological resources include topography, geology, and soils. Topography is typically described with respect to the elevation, slope, and surface features found within a given area. The geology of an area consists of subsurface bedrock materials, which may include mineral deposits and fossil remains. Soil and unconsolidated sediment refer to unconsolidated earthen materials overlying bedrock or other parent material. Soil structure, elasticity, strength, shrink-swell potential, and erodibility determine the ability for the ground to support structures and facilities. Soils are typically described in terms of their type, slope, physical characteristics, and relative compatibility or limitations with regard to particular construction activities and types of land use. Although the Proposed Action involves new construction, the area has been disturbed and is relatively flat. The soil series found at the SEFC E Parcels and the WNY have been altered or have an urban component. Most of these areas consist of fill that was primarily dredged from the Anacostia River with thicknesses that range between 6 feet to over 20 feet in horizon depth near the riverbank (DON, 2004). With the implementation of BMPs by the Navy and/or the developer, as required and adherence to permit stipulations, impacts to geological resources and subsequent impacts to surface waters and groundwater from soil erosion would be minimized.

3.2 Transportation

Transportation focuses on traffic in the WNY area and congestion impacts likely to occur under the No Action Alternative and action alternatives. Traffic is commonly measured through average daily traffic and design capacity. These two measures are used to assign a roadway with a corresponding level of service (LOS). The LOS designation is a professional industry standard used to describe the operating conditions of a roadway segment or intersection. The LOS is defined on a scale of A to F that describes the range of operating conditions on a particular type of roadway facility. LOS A through LOS B indicates free-flow travel. LOS C indicates stable traffic flow. LOS D indicates the beginning of traffic congestion. LOS E indicates the nearing of traffic breakdown conditions. LOS F indicates stop-and-go traffic conditions and represents unacceptable congestion and delay.

3.2.1 Regulatory Setting

Chapter 38 from the DDOT Design and Engineering Manual requires that a transportation impact study be conducted for proposed development to quantify impacts and identify facility improvements needed to maintain an acceptable LOS (DDOT, 2019a). In addition, to help guide the transportation study process and methods, DDOT has published a report, *Guidance for Comprehensive Transportation Review*, which contains detailed steps to conduct a multimodal transportation impact assessment (DDOT, 2019b). These steps include defining a study area; analyzing trip generation, trip distribution, and mode split; and providing analysis years, analysis methods, and No Action Alternative assumptions (e.g., background growth, planned developments, and planning roadways).

Prior to initiating the transportation analysis, it was essential to determine what analysis tools, data parameters, and assumptions would provide the basis of the analysis. The Navy prepared a DDOT Comprehensive Transportation Review Scoping Form that contained the assumptions for the transportation study and covered relevant travel modes. The Navy and DDOT had a conference call on December 22, 2021, to review and revise the traffic analysis assumptions. In addition, DDOT approved the proposed traffic count locations.

3.2.2 Affected Environment

This section presents the transportation region of influence (ROI) and summarizes conditions in the ROI as of February 2022.

Platoon Progression – the movement of users along a designated route in a manner that minimizes stops (NCHRP, 2015).

Queue Spillback – a traffic impact that occurs when segments between intersections (within the half-mile radius) become filled with lined-up vehicles.

3.2.2.1 Region of Influence Definition

The transportation ROI includes a half-mile radius around the WNY. The half-mile radius was selected because it provides an efficient distance in an urban area to project traffic congestion impacts resulting from potential changes on the WNY property. This relates to both platoon progression and queue spillback impacts. For platoon progression, traffic-signal-timing references (NCHRP, 2015) note that the platooning effects from an upstream traffic signal begins to have negligible effects on downstream intersection operations at intersection spacings in excess of a half mile. For queue spillback, if any segments between intersections (within the half-mile radius) are forecasted to become filled with queued vehicles as a result of the Proposed Action or Action Alternatives, then one can assume that a traffic impact has occurred, regardless of any additional queue spillback beyond the half-mile radius.

DDOT provided traffic model data sets containing all of the signalized intersections within the half-mile radius, plus additional nearby intersections that could potentially affect traffic patterns within the ROI. Use of this data resulted in a set of traffic models containing 22 total intersections (19 signalized and 3 unsignalized). These intersections represent the locations where the highest concentration of new vehicle trips generated by the project could occur. Figure 3.2-1 illustrates the traffic ROI, and Table 3.2-1 presents the numbered intersections.

Table 3.2-1 WNY Traffic Count Locations

Intersection #	*Main Street*	*Intersecting Street*
1	Virginia Ave SE/I Street SE	7th Street SE
2	Virginia Ave SE	7th Street SE
3	I Street SE	8th Street SE
4	Ramp D	8th Street SE
5	Virginia Ave SE	8th Street SE
6	I Street SE	Ramp
7	I Street SE	11th Street SE
8	K Street SE	11th Street SE
9	SE Blvd/I-695 NB On-Ramp	11th Street SE
10	SE Blvd/I-695 SB Off-Ramp	11th Street SE
11	L Street SE	11th Street SE
12	M Street SE	New Jersey Avenue SE
13	M Street SE	3rd Street SE
14	M Street SE	4th Street SE
15	M Street SE	Isaac Hull Avenue SE
16	M Street SE	8th Street SE
17	M Street SE	9th Street SE/Parsons Avenue
18	M Street SE	11th Street SE/I-695 On-Ramp
19	M Street SE	12th Street SE/I-695 Off-Ramp
20	M Street SE	12th Street SE
21	N Street SE	11th Street SE
22	O Street SE	11th Street SE

Notes: Ave = Avenue; Blvd = Boulevard; I- = Interstate; NB = northbound; SB = southbound; SE = southeast.

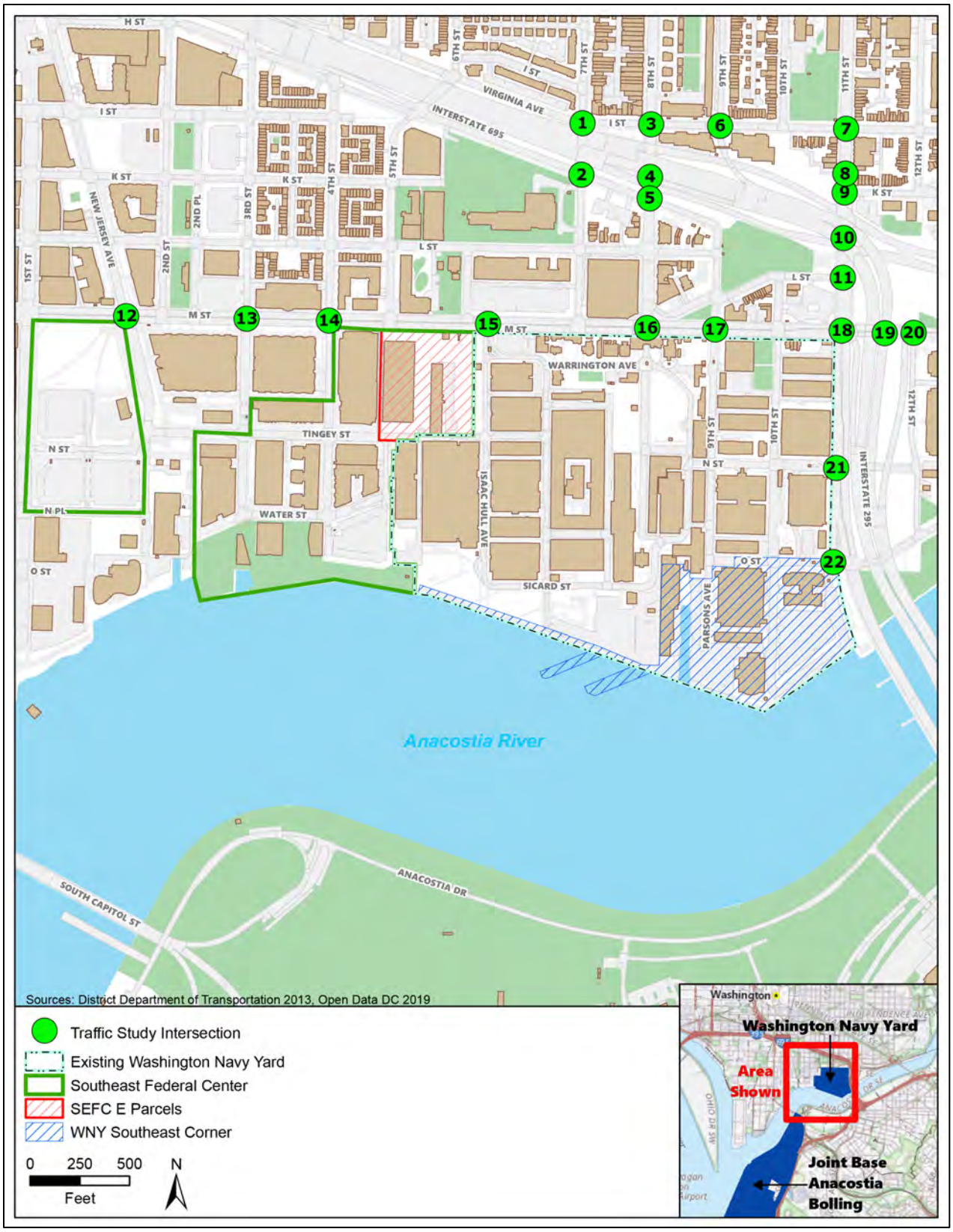


Figure 3.2-1 Traffic Study Intersections

In addition to the ROI, the analysis time period definition is another key aspect of traffic analysis. The critical time periods for traffic analysis are typically the weekday morning and evening peak (commuting) periods. Additional periods of interest can include the weekday midday and Saturday peak periods, particularly for analyses involving retail land uses, not to mention museums. As such, DDOT recommended the following key time periods for traffic analysis, and provided WNY traffic model data sets for these same periods:

- 7:00 ante meridiem (a.m.) to 9:00 a.m. (Midweek) – two hours
- 11:00 a.m. to 1:00 post meridiem (p.m.) (Midweek) – two hours
- 4:30 p.m. to 6:30 p.m. (Midweek) – two hours
- 2:00 p.m. to 4:00 p.m. (Saturday) – two hours

3.2.2.2 Data Collection

Given the ROI and analysis time periods agreed to by DDOT, traffic counts were conducted at these same intersections and time periods on Tuesday, March 15; Wednesday, March 16; and Saturday, March 19, 2022. In addition to the vehicular turning movements, 48-hour traffic counts were also collected at 22 midblock locations between and around the 22 study intersections. These 48-hour counts helped to validate, balance, and refine the turning movement counts at each intersection and were used in estimating annual traffic demands for air quality analysis.

Traffic was observed in the ROI in the field on multiple occasions in late 2021 and early 2022, and the recent ROI traffic models provided by DDOT were reviewed. Based on these early observations, it appeared that 11th Street was currently the most congested corridor (i.e., operating at approximately LOS D), with the 8th Street and M Street corridors operating at approximately LOS B and C. A more thorough existing conditions analysis was conducted using the mid-March traffic count data.

3.2.2.3 Traffic Methodology

This section explains the concepts and definitions for analyzing the traffic operations, the process used to analyze the 22 traffic ROI intersections, and the results.

Analysis Tools

The traffic study analyzed the 22 intersections using multiple software tools to perform an intersection capacity analysis, an intersection queuing analysis, and a travel-time analysis. LOS is the primary measure of traffic operations for both signalized and unsignalized intersections. LOS is a standard performance measure developed by the transportation profession to quantify driver perception for such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles. LOS provides a scale that reflects driver perception of how a transportation facility (e.g., an intersection, interchange, freeway weaving section, ramp junction, or basic freeway segment) operates and provides a scale to compare different facilities.

The LOS for signalized intersections is based on the Highway Capacity Manual method. Primary inputs include the following: vehicular volumes, traffic-signal timings, roadway geometry, speed limits, truck percentages, and Peak Hour Factor (the measure of vehicle 15-minute flow rate). The average vehicle control delay, measured in seconds per vehicle, is calculated using these parameters and represents the average extra delay (in seconds per vehicle) caused by the presence of a traffic control device or traffic signal, including the time required to decelerate, stop, and accelerate. The LOS can be characterized for

the entire intersection, each intersection approach, and each lane group. Signalized intersections that exceed a delay of 50 seconds have LOS E, and those with a delay of 80 seconds have LOS F.

The LOS for unsignalized intersections (i.e., stop-controlled intersections) is based on the Highway Capacity Manual method and requires the same inputs as a signalized intersection. The average vehicle control delay, in seconds per vehicle, is calculated following the Highway Capacity Manual procedures and represents the average delay caused by the presence of a stop sign and the time required to decelerate, stop, and accelerate. The LOS for a two-way, stop-controlled intersection (i.e., unsignalized intersection) is determined for each minor-street movement or shared movement, as well as the major-street left turns. LOS F is assigned if the movement's control delay exceeds 50 seconds.

To determine the influence of the COVID-19 pandemic on traffic data collected in March 2022, the Navy reviewed historical traffic volumes data reported by DDOT from 2012 to 2019 (Table 3.2-2), compared the 2017 Navy traffic study to the March 2022 data, and reviewed recent news articles describing traffic conditions. The DDOT historical data show a relatively flat demand in the WNY area, and all historical years were before the pandemic.

Table 3.2-2 DDOT Historical Traffic Volumes in the WNY Area from 2012 to 2019

Year	*M Street near New Jersey Avenue*	*11th Street near M Street*	*L Street near 11th Street*	*11th Street near I Street*
2019	15	-	13	-
2018	15	16	13	9
2017	15	-	13	9
2016	15	16	13	9
2015	14.4	15	-	10.2
2014	14.2	-	-	10.1
2013	17.2	-	-	8.4
2012	19.1	-	-	12.8

Notes: DDOT=District Department of Transportation; WNY = Washington Navy Yard.
1. Traffic volumes = average annual daily volumes expressed in thousands.
2. Dash indicates that data were not collected at that location for that year.

Source: (DDOT, 2012 to 2019)

In general, government and local agencies and private companies are continuing to use full-time and part-time telework or hybrid models, with employees commuting to workplaces less than five days per week. The WNY Health Protections Condition has evolved with pandemic conditions resulting in less occupancy compared to pre-pandemic conditions.

Based on a review of the Navy traffic study conducted in 2017, some conclusions can be drawn. For example, a comparison of the 2017 and 2022 traffic studies shows that most intersections in 2017 and 2022 were at an acceptable LOS. Both studies showed congestion during the morning peak and afternoon peak hours around the entrance and exit ramps to and from I-695. It should be noted that, during 2017, multiple WNY access gates were open; in 2022, access is limited to the O Street Gate.

Reporting on traffic conditions shows one source with estimates that traffic was 22-percent lower in March 2022 compared to March 2019 (Llorico, 2022). It is unknown if these conditions will continue and if remote work will become more routine.

Existing Conditions Intersection Operations Analysis

This section shows the LOS for the intersections in the ROI. Acceptable overall conditions are defined as LOS D or better during the four time periods that were evaluated (i.e., weekday morning peak, weekday midday peak). Table 3.2-3 shows the existing conditions traffic performance, based on data collected in March 2022, in terms of LOS for the weekday morning and evening peak periods. Table 3.2-4 summarizes the existing conditions traffic performance for the midday and Saturday period from March 2022. During existing conditions, the intersection of 11th Street at the I-695 on-ramp is the only intersection within the ROI that ever reaches the LOS E congestion level during the morning peak. Three intersections have potential for possible to occasional queue spillback in both the morning and afternoon peak.

Table 3.2-3 Existing Conditions Traffic Performance for the A.M. and P.M. Peak Period

Intersection #	*A.M. Peak*			*P.M. Peak*		
	Delay (s/veh)	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*
1	8	A		13	B	
2	7	A		16	B	
3	19	B		16	B	
4	8	A		8	A	
5	21	C		18	B	
6	Unsignalized	Unsignalized		Unsignalized	Unsignalized	
7	26	C		18	B	
8	Unsignalized	Unsignalized		Unsignalized	Unsignalized	
9	57	E	**[1]	35	C	
10	33	C	*	54	D	*
11	Unsignalized	Unsignalized		Unsignalized	Unsignalized	
12	16	B		20	C	
13	18	B		9	A	
14	18	B		20	B	
15	7	A		13	B	
16	14	B		12	B	
17	13	B		2	A	
18	30	C		29	C	**
19	13	B		12	B	
20	21	C		26	C	
21	12	B		1	A	
22	22	C	**	19	B	*

Notes: # = number; a.m. = ante meridiem (morning); LOS = level of service; p.m. = post meridiem (afternoon); s/veh = seconds per vehicle.

1. This intersection experiences both possible queuing problems on an external link (one star) and occasional queuing problems on an internal link (two stars).

*possible queuing problems on an internal movement (gray shading).

**occasional queuing problems on an internal movement (blue shading).

Orange shading = LOS failing.

Table 3.2-4 Existing Conditions Traffic Performance for the Midday and Saturday Peak Period

Intersection #	*Midday Peak*			*Saturday Peak*		
	Delay (s/veh)	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*
1	8	A		9	A	
2	8	A		13	B	
3	16	B		16	B	
4	9	A		9	A	
5	22	C		14	B	
6	Unsignalized	Unsignalized		Unsignalized	Unsignalized	
7	19	B		24	C	
8	Unsignalized	Unsignalized		Unsignalized	Unsignalized	
9	18	B		41	D	*
10	34	C	*	31	C	*
11	Unsignalized	Unsignalized		Unsignalized	Unsignalized	
12	13	B		14	B	
13	12	B		12	B	
14	14	B		17	B	
15	9	A		7	A	
16	6	A		4	A	
17	6	A		6	A	
18	24	C		21	C	**
19	8	A		6	A	
20	23	C		25	C	
21	12	B		15	B	
22	3	A		7	A	

Notes: # = number; LOS = level of service; s/veh = seconds per vehicle.
*possible queuing problems on an external movement (gray shading).
**occasional queuing problems on an internal movement (blue shading).

Intersection Queuing Analysis Method

In addition to vehicle delay, the Synchro model calculated queue lengths for each approach. For the WNY analysis, the lowest degree of possible queuing problems occurs when the expected incoming traffic volumes exceed the calculated capacity of an external movement (i.e., external movements are at the outer edges of the model and have no upstream intersection within the model). For example, if the model reports a possible queuing problem at the I-695 off-ramp, this may indicate queues spilling back to the freeway, even though this traffic analysis is not specifically modeling operations on the freeway. This concept also applies to traffic movements exiting the WNY, where queuing may disrupt minor intersections inside the WNY, even though this traffic analysis is not explicitly modeling those minor intersections. Next, a medium degree of possible queuing problems occurs when the 95th-percentile queue length exceeds the distance to the upstream intersection within the model, implying that queue spillback to upstream intersections would occasionally happen. This represents a larger traffic congestion risk (than external queuing) to the WNY ROI, because internal queue spillback would more likely cause multiple adjacent intersections within the ROI to quickly degrade toward LOS F operation. Finally, the maximum degree of possible queuing problems occurs when the expected incoming traffic volumes exceed the calculated capacity of an internal movement, implying that queue spillback to known upstream intersections would consistently and frequently happen. This represents the largest traffic congestion risk, because internal queue spillback would consistently force multiple adjoining intersections within the ROI to operate at LOS F. Tables 3.2-3 and 3.2-4 indicate the intersections containing these queuing problems in existing conditions.

3.2.2.4 Other Modes of Transportation

Multiple modes of transit are located in the ROI, including Metrorail lines, buses, shuttles, ridesharing, and car sharing. The SEFC E Parcels are served by the Metrorail Green Line that passes the western edge of the WNY via the Navy Yard-Ballpark Metro Station, with one entrance at the intersection of New Jersey Avenue SE and M Street SE. The Anacostia Riverwalk Trail, a major recreational and commuter multiuse trail along both sides of the Anacostia River in northeast and southeast D.C. and along the Potomac Channel in southwest D.C., traverses the southern edge of the WNY. The South Capitol Street Bridge, 11th Street Bridge, and Sousa Bridge (Pennsylvania Avenue SE) all have multiuse trails that cross the Anacostia River and connect to the Anacostia Riverwalk Trail. Sidewalks exist along both sides of most publicly accessible roads in the ROI, except for on- or off-ramps to expressways. Intersections generally have reasonable accommodations for pedestrians, including traffic lights and crosswalks.

3.2.3 Environmental Consequences

Impacts to ground traffic and transportation were analyzed by considering the possible changes to existing traffic conditions and the capacity of area roadways from proposed increases in commuter and construction traffic. DDOT has provided traffic model data sets for the ROI. These models were updated to include the mid-March 2022 traffic counts. These existing-condition models serve as a baseline for assessing traffic impacts under the alternatives described below.

Under the No Action Alternative and action alternatives, traffic assumptions include the following:

- Development would occur over a period of 10 years.
- A background growth factor of 0.1 percent per year compounded was applied (Table 3.2-2).

- Trip productions (from the residences, exiting the ROI) would follow the same turning movement proportions observed in the original mid-March 2022 traffic counts. The third assumption was that trip attractions (into the offices, entering the ROI) would originate from the following entry points:
    - one-fifth westbound on M Street (originating east of 11th Street)
    - one-fifth southbound on 11th Street (originating from the I-695 off-ramp)
    - one-fifth eastbound on M Street (originating west of New Jersey Avenue)
    - one-fifth southbound on 8th Street (originating north of Virginia Avenue)
    - one-fifth northbound on 11th Street (originating from the bridge)
- Development on the WNY Southeast Corner would have a separate access point and not use the Navy O Street Gate and, therefore, increase congestion at the O Street gate near 11th Street. Design concepts were not available during preparation of the traffic modeling; therefore, a former entrance on O Street was assumed to be operational. The access point could change if plans for the land exchange move forward.
- All analysis results assume no traffic impacts due to any gated operation near the SEFC E Parcels.

Figure 3.2-2 shows the entry points to the SEFC E Parcels, while Figure 3.2-3 shows the entry points to the WNY Southeast Corner. The following assumptions are expected to result in conservative estimates that do not minimize delay across the ROI but also do not generate undue congestion (e.g., routing all new trips through 11th Street, which is already congested):

- The multipliers presented in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition, were used to estimate the traffic volumes that would result from the proposed land uses for the alternatives. Baseline travel patterns on roadways in the vicinity of the SEFC E Parcels and the WNY were used to determine the distribution of trips for each alternative.
- The percent of vehicle trips (termed “mode split factor” in the equations below) assumed 40 percent privately-owned vehicles used for residential land use, 50 percent for office, 35 percent for the museum, and 50 percent for Navy administration development.
- Calculations: Residential Buildings = ([weekday trips x 5] + [weekend trips x 2]) x 52 weeks/year x 0.40. Office Buildings = ([weekday trips x 4.5] + [weekend trips x 1]) x 52 weeks/year x 0.50. Navy administrative development = ([weekday trips x 4.5] + [weekend trips x 1]) x 52 weeks/year x 0.5.

A capacity analysis was performed to identify the LOS for each of the 22 intersections studied under baseline and alternative conditions. LOS is a qualitative measure of operational conditions within a traffic stream, generally in terms of speed, travel times, traffic interruptions, etc. Morning peak hours were assumed to be 7:00 a.m. to 9:00 a.m., and evening peak hours were assumed to be 4:00 p.m. to 6:00 p.m. Adverse impacts on roadways were defined as conditions that prevent a road from operating at its full design capacity.

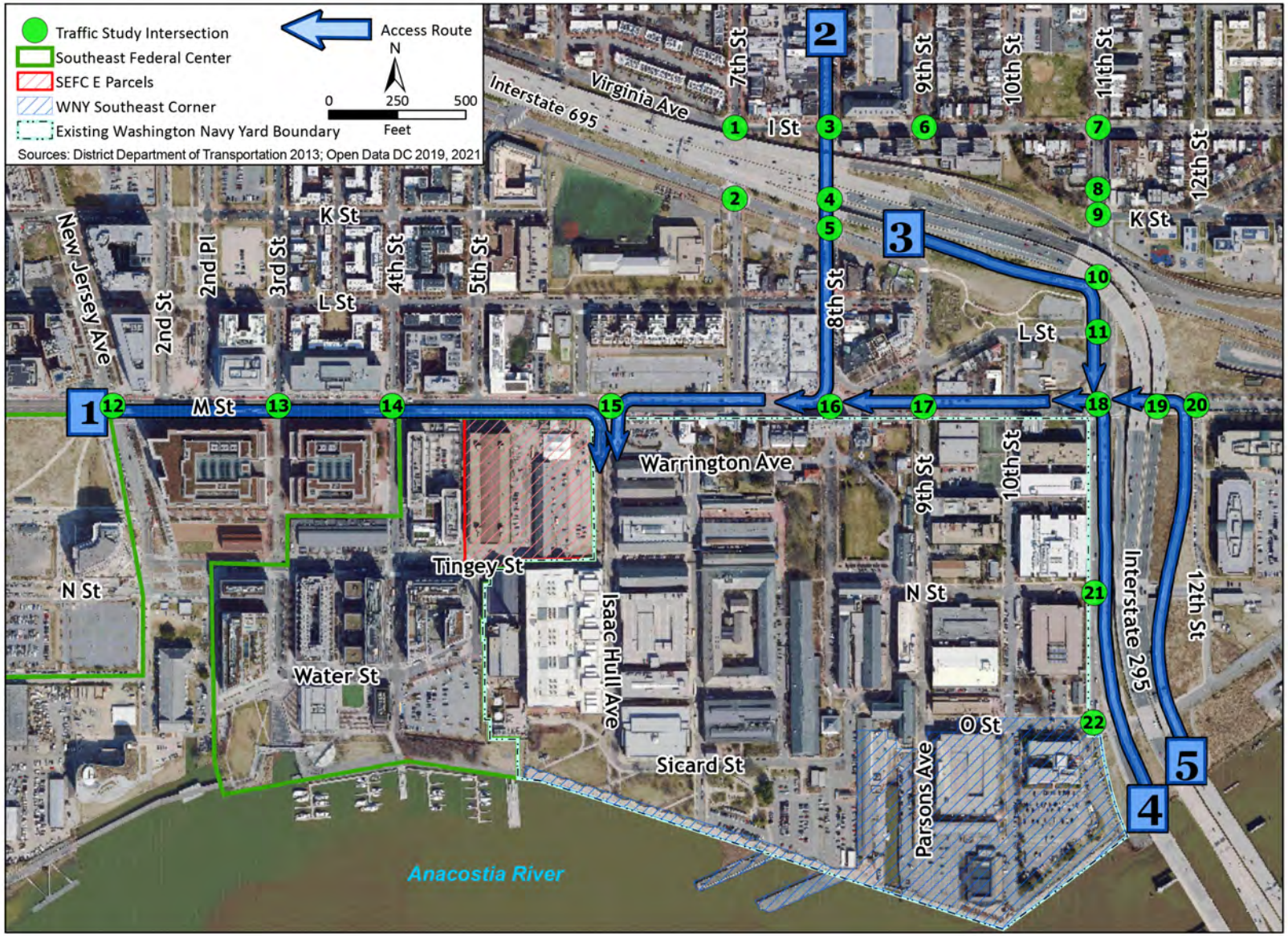


Figure 3.2-2 Traffic Entry Points to the SEFC Parcels

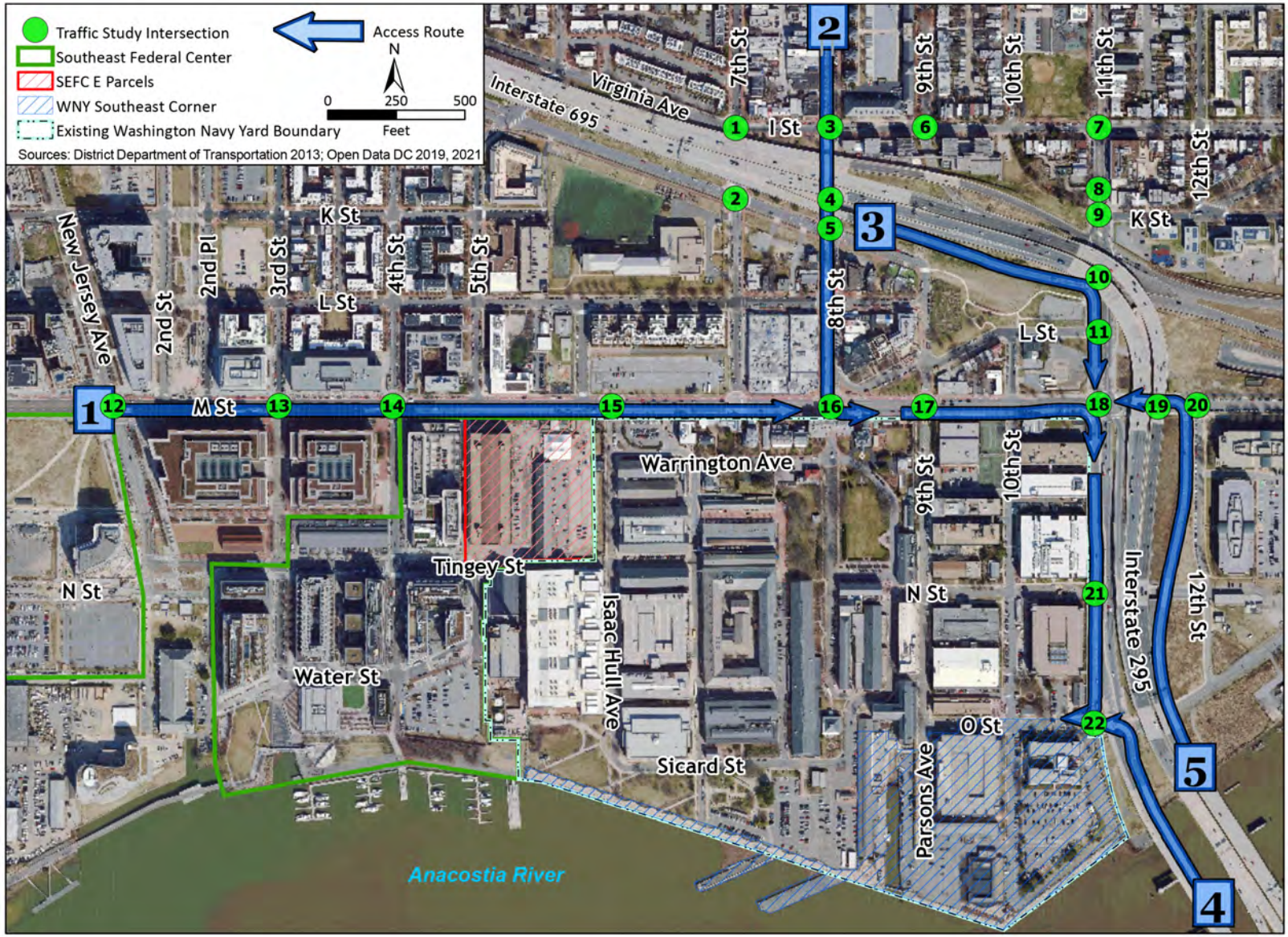


Figure 3.2-3 Traffic Entry Points to the WNY Southeast Corner

3.2.3.1 No Action Alternative

Under the No Action Alternative, the developer would construct the planned mixed-use development on the SEFC E Parcels. During construction, there would be temporary increases in traffic because of the presence of construction workers and heavy vehicles.

The planned private development includes the potential renovation of two historic buildings (Buildings 74 and 202) and construction of two new buildings. Renovated Building 202 may provide approximately 328,000 square feet of office space. Renovated Building 74 and the two new buildings would provide approximately 538,000 square feet of residential space. The resulting impacts were assessed by applying the ITE Trip Generation Manual, 10th Edition, procedures to the corresponding land use types (ITE, 2022). The key parameter to estimate residential trips is the number of dwelling units and, for office trips, it is the number of employees. The dwelling units assumed an average of 1,000 square feet for high-rise and general office. Table 3.2-5 presents the annual vehicle trip estimates for the No Action Alternative. Under the No Action Alternative, there would be no significant impacts to traffic based on additional degraded LOS or serious sustained queue spillback within the ROI.

Table 3.2-5 Annual Vehicle Trip Estimates for the No Action Alternative

Land Use	*Mode Split(1)*	*Trip Productions (veh/hr)*			*Trip Attractions (veh/hr)*			*Weekday veh/d*	*Weekend veh/d*	*Annual trips veh/d*
		A.M. Peak	*P.M. Peak*	*WE Peak*	*A.M. Peak*	*P.M. Peak*	*WE Peak*			
Residential	0.40	57	32	36	15	52	44	980	1,000	358,800
Office	0.50	30	205	39	220	45	46	1,550	353	381,030
									Total	**739,830**

Notes: a.m. = ante meridiem (morning); p.m. = post meridiem (afternoon); veh/d = vehicles per day; veh/hr = vehicles per hour; WE = weekend.

1. Proportion of newly generated trips resulting in vehicle trips as opposed to alternative mode trips.

For trip distribution, assumptions as described above were established to capture potential origins and destinations of the newly generated trips (from the SEFC E Parcels). Table 3.2-6 presents the peak morning and afternoon traffic estimates. Table 3.2-7 shows weekend traffic conditions under the No Action Alternative but excludes midday traffic conditions due to the lack of ITE trip generation data for this time period. Under the No Action Alternative, as under existing conditions, the intersection of 11th Street at the I-695 on-ramp is the only intersection within the ROI that ever reaches the LOS E congestion level in the A.M. peak. However, the average delay per vehicle at this intersection would be approximately 64 s/veh (versus 57 s/veh under existing conditions). Four intersections have potential for possible to occasional queue spillback in the morning and four in the afternoon peak.

Table 3.2-6 No Action Alternative Traffic Performance for the A.M.and P.M. Peak Period

Intersection #	*A.M. Peak*			*P.M. Peak*		
	Delay (s/veh)	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*
1	6	A		13	B	
2	7	A		16	B	
3	17	B		16	B	
4	7	A		8	A	
5	20	B		18	B	
6	Unsignalized	Unsignalized		Unsignalized	Unsignalized	

Table 3.2-6 No Action Alternative Traffic Performance for the A.M.and P.M. Peak Period

Intersection #	A.M. Peak			P.M. Peak		
	Delay (s/veh)	LOS	Queuing	Delay (s/veh)	LOS	Queuing
7	24	C		17	B	
8	Unsignalized	Unsignalized		Unsignalized	Unsignalized	
9	64	E	**[1]	35	C	
10	27	C	*	54	D	*
11	Unsignalized	Unsignalized		Unsignalized	Unsignalized	
12	16	B		20	C	
13	15	B		12	B	
14	17	B		27	C	
15	14	B		16	B	
16	9	A		11	B	
17	7	A		1	A	
18	29	C	**	30	C	**
19	13	B		12	B	
20	23	C		27	C	
21	12	B		1	A	
22	22	C	**	22	C	*

Notes: # = number; a.m. = ante meridiem (morning); LOS = level of service; p.m. = post meridiem (afternoon); s/veh = seconds per vehicle.

1. This intersection experiences both possible queuing problems on an external link (one star) and occasional queuing problems on an internal link (two stars).

*possible queuing problems on an external movement (gray shading).

**occasional queuing problems on an internal movement (blue shading).

***serious queuing problems on an internal movement (yellow shading).

Orange shading = LOS failing.

Table 3.2-7 No Action Alternative Traffic Performance for Weekend Peak

Intersection #	Weekend Peak		
	Delay (s/veh)	LOS	Queuing
1	9	A	
2	13	B	
3	16	B	
4	9	A	
5	14	B	
6	Unsignalized	Unsignalized	
7	24	C	
8	Unsignalized	Unsignalized	
9	44	D	*
10	31	C	*
11	Unsignalized	Unsignalized	
12	14	B	
13	12	B	
14	17	B	
15	11	B	

Table 3.2-7 No Action Alternative Traffic Performance for Weekend Peak

Intersection #	*Weekend Peak*		
	Delay (s/veh)	*LOS*	*Queuing*
16	5	A	
17	7	A	
18	22	C	**
19	7	A	
20	25	C	
21	14	B	
22	7	A	

Notes: # = number; LOS = level of service; s/veh = seconds per vehicle.
*possible queuing problems on an external movement (gray shading).
**occasional queuing problems on an internal movement (blue shading).

3.2.3.2 Alternative 1A Land Acquisition through Land Exchange with Construction and Operation of Navy Museum on SEFC E Parcels

Following the traffic counts conducted in mid-March and the Navy coordination with DDOT as part of the Comprehensive Transportation Review Scoping Form submittal to confirm trip generation and trip distribution assumptions, a full traffic analysis was performed to model traffic impacts. The land acquisition itself would not result in traffic impacts and would in fact eliminate traffic impacts associated with the planned private development under the No Action Alternative. However, the Navy proposes alternative uses of the property that are evaluated under Alternatives 1A and 1B; Alternative 1C would involve no Navy development on the SEFC E Parcels except for installing a fence.

Under Alternative 1A, impacts to traffic from land acquisition through land exchange (involving private development and in-kind considerations on the WNY Southeast Corner) are discussed below, together with impacts from construction and operation of a relocated Navy Museum on the SEFC E Parcels. Under this alternative, the Navy would acquire the SEFC E Parcels and relocate the museum to the SEFC E Parcels. Traffic would be generated during construction and post-construction from employees and visitors to the museum.

Construction

During the construction, there would be an increase in congestion along the immediately adjacent M Street corridor (originating from Isaac Hull Avenue). This increase would be attributed to heavy construction vehicles accessing the construction site and construction workers commuting to the site for work. The other main corridors in the ROI, 8th Street and 11th Street, could also experience increased congestion. However, those increases could be at a lesser magnitude than the M Street increase. This is because a portion of newly generated traffic could exclusively use M Street to travel between the SEFC E Parcels and areas outside the ROI. The remaining generated traffic would then either use 8th Street or 11th Street, in addition to the mostly necessary use of M Street (because the museum would be located on M Street).

Post-Construction

WNY Employees. Data on Navy employees reflects the 2020 Navy survey, although a very small survey sample size was reported. Therefore, various references were consulted along with a review of parking ratios for the WNY. All of these sources were used to develop a suitable percentage of employees who drive versus taking other modes of transportation (assuming that 50 percent of Navy employees drive a personally owned vehicle).

Museum Employees. During the post-construction months, the most likely traffic impact would be an increase in congestion along the M Street corridor, with secondary increases along the 8th Street and 11th Street corridors. Impacts were assessed by applying the ITE Trip Generation Manual, 10th Edition, procedures to the museum land use type (ITE, 2022). The key parameters to estimate museum trips include thousands of square foot gross floor area, or the number of employees. The number of museum-generated trips during the weekday morning and afternoon peak periods due to employees would be lower than the museum visitor trips generated during the midday periods.

Museum Visitors. The Navy conducted a previous traffic study (2017) to determine the effects of several options for relocating or refurbishing the Navy Museum. The total vehicle trips generated by the museum during the morning and afternoon peak hours and midday and weekend peak hours were calculated based on an estimated 1,100,000 visitors per year, a value from a Business Case Analysis study performed by the Navy. This mode split for the proposed tourists was obtained from the U.S. Census Bureau, the WNY Transportation Management Program, and survey results provided by the Smithsonian Institute. Table 3.2-8 shows the projected data for tourists and shows the annual vehicle trip estimates.

Table 3.2-8 Mode Split for Museum Visitors

Mode Share	*Projected Tourists (percent)*
Vehicle	24
Taxi/Rideshare	10
Tour Bus	24
Metro	39
Bicycle/Walk	3

Alternative 1A analysis focused on the midday peak period because the museum would generate most of its trips during this period. For trip distribution, Table 3.2-9 shows the percent of the newly generated trips that would become passenger car trips and alternative modes (e.g., pedestrian, bicycle, Metro, bus). Trip productions (from the museum, exiting ROI) were assumed to follow the same turning movement proportions observed in the original mid-March 2022 traffic counts. These assumptions are expected to produce a conservative estimate that does not minimize delay across the ROI but also does not generate undue congestion (e.g., routing all new trips through 11th Street, which is already congested).

Table 3.2-9 Annual Vehicle Trip Estimates for Alternative 1A

Land Use	Mode Split[1]	Trip Productions (veh/hr)			Trip Attractions (veh/hr)			Weekday	Weekend	Annual Trips[2]
		A.M. Peak	P.M. Peak	WE Peak	A.M. Peak	P.M. Peak	WE Peak	Veh/d	Veh/d	
SEFC E Parcels										
Navy Museum	0.35	20	14	18	13	3	45	333	630	151,970
WNY Southeast Corner										
Residential/Retail Building 1	0.40	70	39	42	18	63	51	1,156	1,180	423,280
Residential/Retail Building 2	0.40	70	39	42	18	63	51	1,156	1,180	423,280
Office Building	0.50	33	205	49	242	45	58	2,000	445	491,140
Buildings 68/70	0.40	33	51	52	39	51	56	920	1,180	276,640
									Subtotal	**1,614,340**
									Combined Total	**1,766,310**

Notes: a.m. = ante meridiem (morning); p.m. = post meridiem (afternoon); SEFC = Southeast Federal Center; veh/d = vehicles per day; veh/hr = vehicles per hour; WE = weekend; WNY = Washington Navy Yard.
1. Proportion of newly generated trips resulting in vehicle trips as opposed to alternative mode trips.
2. Office and Services Buildings = ([Weekday trips * 4.5] + [Weekend trips * 1]) * 52 weeks/year. Museum and Residential Buildings = ([Weekday trips * 5] + [Weekend trips * 2]) * 52 weeks/year.

Following the analysis of existing conditions and Alternative 1A, the critical time period appears to be the morning peak period. For example, the morning peak is the only time period in which any intersection operates at LOS E. In the other time periods, all intersections operate at LOS D or better. Next, the morning peak is the only time period in which the O Street entry gate (near 11th Street) generates occasional queue spillback to upstream signalized intersections. In the other time periods, the model does not indicate any significant risks for queue spillback to upstream signalized intersections as a result of the O Street Gate. Finally, under Alternative 1A, the morning peak period exhibits more individual turning movements operating at LOS F (four) than either the P.M. peak (three) or the weekend peak (two).

Another pattern that seems evident from both the existing conditions and the Alternative 1A conditions is that, in terms of the passenger car traffic, the WNY ROI behaves more like a residential area than a central business district (CBD). This is because the morning peak generates near-failing conditions at the I-695 on-ramp at 11th Street (i.e., most vehicles are leaving the area), while the afternoon peak generates near-failing conditions at the I-695 off-ramp at 11th Street (i.e., most vehicles are entering the area). However, it remains possible that in terms of the non-vehicle traffic (e.g., metro, bicycles, pedestrians), more people could be entering the area during the morning peak.

For traffic impacts under Alternative 1A, the Navy Museum itself does not appear to significantly affect traffic congestion levels in the WNY area, because the museum never generates more than 63 vehicles per hour (i.e., one trip every 57 seconds) in any time period. Moreover, the museum could act as a traffic congestion deterrent by preventing other SEFC E Parcels development (e.g., residential, retail) that could generate substantially more trips. However, apart from the museum, the other principal element of Alternative 1A is the land exchange that would facilitate private development on the WNY Southeast Corner of the WNY. This proposed development would act as a miniature CBD that attracts approximately 318 vehicles per hour inbound during the morning peak and generates approximately

334 vehicles per hour outbound during the afternoon peak. According to the model, the WNY ROI can safely absorb these new trip levels with minimal changes to the LOS, assuming that traffic signals can be retimed.

Note that for some intersections, the Alternative 1A delays and LOS improved slightly compared to the existing conditions. This can happen for at least two reasons. First, when a lightly congested turning movement accepts a large number of new trips, this can affect the intersection-wide volume-weighted average by making it appear that the average vehicle traversing the intersection experiences lower delays. This is despite an increase in delay on the lightly congested turning movement itself. Secondly, in this traffic impact analysis, signal timings for each scenario (including existing-condition scenarios) were optimized. This is because the original DDOT signal timings would probably not efficiently accommodate either the March 2022 traffic counts or the future generated trips. Indeed, retiming the signals can have unpredictable effects. In attempting to minimize system-wide congestion, the model can often implement timings to assist some intersections at the expense of others. As such, certain intersections may benefit from lower delays if the signal optimization was too generous, even under increased traffic demand levels. Ultimately there is always a demand level above which certain intersections would have to operate at LOS F, regardless of the signal timing. Alternative 1A does not appear to reach such demand levels, with only one intersection operating at LOS E and an available mitigation that could bring this intersection to LOS D. Under Alternative 1A, as under existing conditions, the intersection of 11th Street at the I-695 on-ramp is the only intersection within the ROI that ever reaches the LOS E congestion level in the A.M. peak. However, the average delay per vehicle at this intersection would be approximately 64 s/veh (versus 57 s/veh under existing conditions). Four intersections have potential for possible to occasional queue spillback in the morning and four in the afternoon peak. Alternative 1A impacts would be as described under the No Action Alternative plus occasional new queue spillback caused by the intersection of M Steet and 11th Street. Mitigation measures such as lane channelization adjustments would improve LOS. The Navy and the developer would consider improvements to the O Street Gate. As a result, traffic impacts would not be significant.

3.2.3.3 Alternative 1B Land Acquisition through Land Exchange with Construction and Operation of Navy Administrative Development

Under Alternative 1B, impacts to traffic from land acquisition through land exchange (involving private development and in-kind considerations on the WNY Southeast Corner) are discussed below, together with impacts from construction and operation of Navy administrative facilities on the SEFC E Parcels. During the construction, the traffic impact could be similar to the aforementioned museum impacts. The administrative facilities construction effort was assumed to be similar to the museum construction effort, such that the Alternative 1B added congestion should be similar to the expected added congestion under Alternative 1A.

During the post-construction months, the most likely traffic impact would be an increase in congestion along the M Street corridor, with secondary increases along the 8th Street and 11th Street corridors. Impacts were quantified by applying the ITE trip generation procedure to the administrative facilities land use type. The key parameters to estimate administrative facilities trips include thousands of square foot gross floor area or the number of employees. The Navy prepared the Comprehensive Transportation Review Scoping Form and coordinated with DDOT to determine the best trip generation values for the impact assessment.

Alternative 1B analysis focused on the morning peak period because the administrative facilities would generate most of its trips during this period. Trip distribution assumptions and annual vehicle trips estimates are presented in Table 3.2-10. These assumptions are expected to produce a conservative estimate that does not minimize delay across the ROI but also does not produce undue congestion (e.g., routing all new trips through 11th Street, which is already congested). As shown, under Alternative 1B, the intersection of 11th Street at the I-695 on-ramp is the only intersection within the ROI that ever reaches the LOS E congestion level in the morning peak. However, the average delay per vehicle at this intersection would be approximately 65 s/veh (versus 57 s/veh under existing conditions). Four intersections have potential for possible to occasional queue spillback in both the morning and afternoon peak. Under Alternative 1B, traffic impacts would include the same impacts as described in Alternative 1A, plus there would be serious new queue spillback problems in the afternoon peak caused by the intersection of M Street and 11th Street. Therefore, there would be significant impacts on traffic. Mitigation measures such as lane channelization adjustments would improve LOS. The Navy and the developer would consider improvements to the O Street Gate.

Table 3.2-10 Annual Vehicle Trips Estimated for Alternative 1B

Land Use	*Mode Split*[1]	*Trip Productions (veh/hr)*			*Trip Attractions (veh/hr)*			*Weekday*	*Weekend*	*Annual Trips*[2]
		A.M. Peak	*P.M. Peak*	*WE Peak*	*A.M. Peak*	*P.M. Peak*	*WE Peak*	*Veh/d*	*Veh/d*	
SEFC E Parcels										
Navy Administrative[3]	0.50	43	295	55	317	65	65	2,200	520	541,840
WNY Southeast Corner										
Residential/Retail Building 1	0.40	70	39	42	18	63	51	1,156	1,180	423,280
Residential/Retail Building 2	0.40	70	39	42	18	63	51	1,156	1,180	423,280
Office Building	0.50	33	205	49	242	45	58	2,000	445	491,140
Buildings 68/70	0.40	33	51	52	39	51	56	920	1,180	276,640
									Subtotal	1,614,340
									Combined Total	**2,156,180**

Notes: a.m. = ante meridiem (morning); p.m. = post meridiem (afternoon); SEFC = Southeast Federal Center; veh/d = vehicles per day; veh/hr = vehicles per hour; WE = weekend; WNY = Washington Navy Yard.
1. Proportion of newly generated trips resulting in vehicle trips as opposed to alternative mode trips.
2. Office and Services Buildings = ([Weekday trips * 4.5] + [Weekend trips * 1]) * 52 weeks/year. Museum and Residential Buildings = ([Weekday trips * 5] + [Weekend trips * 2]) * 52 weeks/year.
3. Includes a 20-percent reduction in trips assuming existing staff moving into the new facilities.

3.2.3.4 Alternative 1C Land Acquisition through Land Exchange with No Development on the SEFC E Parcels

Under Alternative 1C, the Navy would not develop the SEFC E Parcels. The development in the WNY Southeast Corner would generate traffic as shown in Table 3.2-11, Table 3.2-12, and Table 3.2-13, which compare conditions of Alternatives 1A, 1B, and 1C under for morning peak, afternoon peak, and weekend conditions. Traffic could decrease slightly since workers in Building 74 would need to relocate. Under Alternative 1C, the intersection of 11th Street at the I-695 on-ramp is the only intersection within the ROI that ever reaches the LOS E congestion level in the morning peak. However, the average delay per vehicle at this intersection would be approximately 64 s/veh (versus 57 s/veh under existing

conditions). Four intersections have potential for possible to occasional queue spillback in both the morning and afternoon peak. Under Alternative 1C, there would be no significant impacts to traffic based on degraded LOS or serious sustained queue spillback within the ROI. Mitigation measures such as lane channelization adjustments would improve LOS. The Navy and the developer would consider improvements to the O Street Gate.

Table 3.2-11 Traffic Performance Under Alternative 1A, 1B,and 1C (A.M. Peak)

Intersection #	*Alternative 1A*			*Alternative 1B*			*Alternative 1C*		
	Delay (s/veh)	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*
1	6	A		5	A		6	A	
2	8	A		8	A		8	A	
3	16	B		16	B		16	B	
4	7	A		8	A		7	A	
5	17	B		19	B		17	B	
6	Unsignalized				Unsignalized		Unsignalized		
7	23	C		23	C		23	C	
8	Unsignalized				Unsignalized		Unsignalized		
9	64	E	**[1]	65	E	**[1]	64	E	**[1]
10	26	C	*	24	C	*	26	C	*
11	Unsignalized				Unsignalized		Unsignalized		
12	14	B		14	B		14	B	
13	9	A		9	A		8	A	
14	14	B		15	B		15	B	
15	12	B		26	C		11	B	
16	16	B		13	B		16	B	
17	6	A		6	A		6	A	
18	35	C	**	35	C	**	34	C	**
19	13	B		13	B		13	B	
20	20	B		20	B		20	B	
21	13	B		13	B		13	B	
22	22	C	**	22	C	**	22	C	**

Notes: # = number; a.m. = ante meridiem (morning); LOS = level of service; s/veh = seconds per vehicle.
1. This intersection experiences both possible queuing problems on an external link (one star) and occasional queuing problems on an internal link (two stars).
*possible queuing problems on an internal movement (gray shading).
**occasional queuing problems on an internal movement (blue shading).
Orange shading = LOS failing.

Table 3.2-12 Traffic Performance Under Alternative 1 (P.M. Peak)

Intersection #	*Alternative 1A*			*Alternative 1B*			*Alternative 1C*		
	Delay (s/veh)	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*
1	13	B		12	B		13	B	
2	16	B		16	B		16	B	
3	18	B		19	B		18	B	
4	7	A		7	A		7	A	
5	14	B		13	B		14	B	
6	Unsignalized			Unsignalized			Unsignalized		
7	17	B		16	B		17	B	
8	Unsignalized			Unsignalized			Unsignalized		
9	37	D		38	D		37	D	
10	50	D	*	51	D	*	50	D	*
11	Unsignalized			Unsignalized			Unsignalized		
12	22	C		23	C		21	C	
13	9	A		8	A		10	B	
14	20	B		21	C		19	B	
15	12	B		20	B		12	B	
16	12	B		12	B		13	B	
17	1	A		1	A		1	A	
18	34	C	**	38	D	***	34	C	**
19	12	B		12	B		12	B	
20	27	C		27	C		27	C	
21	11	B		1	A		1	A	
22	22	C	*	22	C	*	22	C	*

Notes: # = number; LOS = level of service; p.m. = post meridiem s/veh = seconds per vehicle.
*possible queuing problems on an internal movement (gray shading)
**occasional queuing problems on an internal movement (blue shading).
***serious queuing problems on an internal movement (yellow shading).

Table 3.2-13 Traffic Performance Under Alternative 1 (Weekend Peak)

Intersection #	*Alternative 1A*			*Alternative 1B*			*Alternative 1C*		
	Delay (s/veh)	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*
1	9	A		9	A		9	A	
2	12	B		13	B		12	B	
3	16	B		16	B		15	B	
4	9	A		9	A		9	A	
5	13	B		13	B		14	B	
6	Unsignalized			Unsignalized			Unsignalized		
7	24	C		24	C		24	C	
8	Unsignalized			Unsignalized			Unsignalized		
9	46	D	*	46	D	*	46	D	*
10	29	C	*	29	C	*	30	C	*
11	Unsignalized					Unsignalized	Unsignalized		
12	15	B		14	B		15	B	
13	12	B		13	B		13	B	

Table 3.2-13 Traffic Performance Under Alternative 1 (Weekend Peak)

Intersection #	Alternative 1A			Alternative 1B			Alternative 1C		
	Delay (s/veh)	LOS	Queuing	Delay (s/veh)	LOS	Queuing	Delay (s/veh)	LOS	Queuing
14	17	B		15	B		16	B	
15	8	A		11	B		7	A	
16	5	A		5	A		5	A	
17	7	A		6	A		6	A	
18	28	C	**	32	C	***	28	C	**
19	7	A		7	A		7	A	
20	25	C		25	C		25	C	
21	15	B		16	B		15	B	
22	7	A		7	A		7	A	

Notes: # = number; LOS = level of service; s/veh = seconds per vehicle.
*possible queuing problems on an internal movement (gray shading).
**occasional queuing problems on an internal movement (blue shading).
***serious queuing problems on an internal movement (yellow shading).

Potential Mitigation Measures

Potential mitigation measure that the Navy and the developer could consider under Alternative 1 are provided below. The Navy and the developer would continue to coordinate with DDOT.

- **Mitigation 1.** According to the traffic model that the Navy used to assess traffic impacts, the rightmost southbound lane on 11th Street, near the I-695 on-ramp, would operate as a de-facto right-turn lane. This is because the southbound right-turn demand exceeds the southbound through movement demand, but the rightmost lane is a shared through-plus-right-turn lane. Based on the model, if the local agency can modify the lanes such that only right-turners can use the rightmost lane, then the average delay at this intersection could decrease from 64 to 50 seconds per vehicle. The local agency could accomplish this change either by restriping the roadway or by installing a dynamic message sign (DMS) (e.g., Right Turn Only) above the lane in question.
- **Mitigation 2.** Similar to Mitigation 1, the leftmost westbound lane on M Street, near Isaac Hull, operates as a de-facto left-turn lane for alternatives where the SEFC E Parcels attract a large number of trips with drivers wishing to park inside the WNY. (No Action, Alternative 1B, and Alternative 2B) during the morning peak period. Local agencies could consider a DMS that displays “Left Turn Only” during the morning peak period.
- **Mitigation 3.** The Navy and/or developer could consider mitigation measures such as improvements to the O Street Gate, programs to encourage use of other modes of transportation, or minimizing new parking to achieve parking ratio goals recommended by local agencies (e.g., one parking space per six employees).

3.2.3.5 Alternative 2: Direct Land Acquisition

The method of land acquisition would not affect traffic. Thus, Alternative 2 impacts would be identical to Alternative 1 for the SEFC E Parcels, including Alternatives 1A, 1B, and 1C. However, Alternative 2 would not include private development in the WNY Southeast Corner. Table 3.2-14 shows the annual vehicle trip estimates for Alternative 2A while Table 3.2-15 shows annual vehicle trip estimates for Alternative

2B. Tables 3.2-16, Table 3.2-17, and Table 3.2-18 present the traffic performance for the morning peak, evening peak, and weekend and compares Alternatives 2A, 2B, and 2C. Under Alternatives 2A, 2B, and 2C, as under existing conditions, the intersection of 11th Street at the I-695 on-ramp is the only intersection within the ROI that ever reaches the LOS E congestion level in the A.M. peak. However, the average delay per vehicle at this intersection would be approximately 65 s/veh (versus 57 s/veh under existing conditions) for Alternatives 2A and 2C while 63 s/veh for Alternative 2B. Four intersections under Alternative 2A and 2C have potential for possible to occasional queue spillback in the morning and four in the afternoon peak while Alternative 2B has five intersections with possible to occasional queue spillback in the morning. Under Alternatives 2A and 2B, there would be no significant impact to traffic based on degraded LOS or serious sustained queue spillback within the ROI. Under Alternative 2C, there would be no significant impacts to traffic with no development on the WNY Southeast Corner or SEFC E Parcels. As a result, traffic generated from proposed development at those parcels would be less compared to the No Action Alternative.

Table 3.2-14 Annual Vehicle Estimates for Alternative 2A

Land Use	*Mode Split(1)*	*Trip Productions (Veh/hr)*			*Trip Attractions (Veh/hr)*				*Weekday*	*Weekend*	*Annual Trips(2)*
		A.M. Peak	*P.M. Peak*	*WE Peak*	*A.M. Peak*		*P.M. Peak*	*WE Peak*	*Veh/d*	*Veh/d*	
SEFC E Parcels											
Navy Museum	0.35	20	14		18	13	3	45	333	630	**151,970**

Notes: a.m. = ante meridiem (morning); p.m. = post meridiem (afternoon); SEFC = Southeast Federal Center; veh/d = vehicles per day; veh/hr = vehicles per hour; WE = weekend.
1. proportion of newly generated trips resulting in vehicle trips as opposed to alternative mode trips.
2. Museum and Residential Buildings = ([Weekday trips * 5] + [Weekend trips * 2]) * 52 weeks/year.

Table 3.2-15 Annual Vehicle Estimates for Alternative 2B

Land Use	*Mode Split(1)*	*Trip Productions (Veh/hr)*			*Trip Attractions (Veh/hr)*			*Weekday*	*Weekend*	*Annual Trips(2)*
		A.M. Peak	*P.M. Peak*	*WE Peak*	*A.M. Peak*	*P.M. Peak*	*WE Peak*	*Veh/d*	*Veh/d*	
SEFC E Parcels										
Navy Administration	0.5	43	295	55	317	65	65	2,200	520	**541,840**

Notes: a.m. = ante meridiem (morning); p.m. = post meridiem (afternoon); SEFC = Southeast Federal Center; veh/d = vehicles per day; veh/hr = vehicles per hour; WE = weekend.
1. proportion of newly generated trips resulting in vehicle trips as opposed to alternative mode trips.
2. Office and Services Buildings = ([Weekday trips * 4.5] + [Weekend trips * 1]) * 52 weeks/year.

Table 3.2-16 Traffic Performance Under Alternative 2 (A.M. Peak)

Intersection #	*Alternative 2A*			*Alternative 2B*			*Alternative 2C*		
	Delay (s/veh)	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*
1	6	A		6	A		6	A	
2	9	A		7	A		9	A	
3	16	B		17	B		16	B	
4	7	A		8	A		7	A	
5	18	B		19	B		19	B	
6	Unsignalized			Unsignalized			Unsignalized		
7	25	C		24	C		25	C	
8	Unsignalized			Unsignalized			Unsignalized		
9	65	E	**[1]	63	E	**[1]	65	E	**[1]
10	24	C	*	26	C	*	24	C	*
11	Unsignalized			Unsignalized			Unsignalized		
12	13	B		17	B		13	B	
13	9	A		14	B		9	A	
14	13	B		14	B		13	B	
15	11	B		21	C	**	11	B	
16	12	B		10	B		12	B	
17	5	A		7	A		5	A	
18	30	C	**	30	C	**	30	C	**
19	12	B		14	B		12	B	
20	18	B		23	C		18	B	
21	14	B		12	B		14	B	
22	22	C	**	22	C	**	22	C	**

Notes: # = number; a.m. = ante meridiem (morning); LOS = level of service; s/veh = seconds per vehicle.
1. This intersection experiences both possible queuing problems on an external link (one star) and occasional queuing problems on an internal link (two stars).
*possible queuing problems on an external movement.
**occasional queuing problems on an internal movement.
Orange shading = Failing LOS.

Table 3.2-17 Traffic Performance Under Alternative 2 (P.M. Peak)

Intersection #	*Alternative 2A*			*Alternative 2B*			*Alternative 2C*		
	Delay (s/veh)	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*
1	13	B		13	B		13	B	
2	16	B		16	B		16	B	
3	16	B		16	B		16	B	
4	8	A		8	A		8	A	
5	18	B		18	B		18	B	
6	Unsignalized			Unsignalized			Unsignalized		
7	18	B		17	B		18	B	
8	Unsignalized			Unsignalized			Unsignalized		
9	35	C		35	C		35	C	
10	54	D	*	54	D	*	54	D	*

Table 3.2-17 Traffic Performance Under Alternative 2 (P.M. Peak)

Intersection #	*Alternative 2A*			*Alternative 2B*			*Alternative 2C*		
	Delay (s/veh)	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*
11	Unsignalized			Unsignalized			Unsignalized		
12	21	C		20	C		21	C	
13	9	A		12	B		9	A	
14	20	B		23	C		21	C	
15	13	B		18	B		12	B	
16	12	B		12	B		12	B	
17	2	A		1	A		2	A	
18	29	C		31	C	**	29	C	
19	12	B		12	B		12	B	
20	27	C		27	C		27	C	
21	1	A		1	A		1	A	
22	22	C	*	22	C	*	22	C	*

Notes: # = number; LOS = level of service; p.m. = post meridiem; s/veh = seconds per vehicle.
*possible queuing problems on an external movement.
**occasional queuing problems on an internal movement.

Table 3.2-18 Traffic Performance Under Alternative 2 (Weekend Peak)

Intersection #	*Alternative 2A*			*Alternative 2B*			*Alternative 2C*		
	Delay (s/veh)	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*	*Delay (s/veh)*	*LOS*	*Queuing*
1	9	A		9	A		9	A	
2	13	B		13	B		13	B	
3	16	B		16	B		16	B	
4	9	A		9	A		9	A	
5	14	B		14	B		14	B	
6	Unsignalized			Unsignalized			Unsignalized		
7	24	C		24	C		24	C	
8	Unsignalized			Unsignalized			Unsignalized		
9	44	D	*	44	D	*	44	D	*
10	31	C	*	31	C	*	31	C	*
11	Unsignalized			Unsignalized			Unsignalized		
12	14	B		13	B		14	B	
13	12	B		13	B		13	B	
14	17	B		16	B		17	B	
15	7	A		10	B		7	A	
16	4	A		5	A		4	A	
17	7	A		6	A		6	A	
18	22	C	**	22	C	**	21	C	**
19	6	A		7	A		6	A	
20	25	C		25	C		25	C	
21	15	B		14	B		15	B	
22	7	A		7	A		7	A	

Notes: # = number; LOS = level of service; s/veh = seconds per vehicle.
*possible queuing problems on an external movement.
**occasional queuing problems on an internal movement.

Potential Mitigation Measures

Under Alternative 2, there would be no private development in the WNY Southeast Corner; therefore, mitigation would not be required. The Navy would coordinate with DDOT under Alternative 2B and could consider programs to encourage use of other modes of transportation or minimizing new parking to achieve parking ratio goals as recommended by local agencies(e.g., one parking space per six employees).

3.2.3.6 Summary of Impacts and Conclusions

The WNY ROI can safely absorb projected future trip levels with minimal changes to LOS, assuming that local agencies would retime the traffic signals. The critical time period is the morning peak period. It is the only time period in which any intersection operates at LOS E. In the other time periods, all intersections operate at LOS D or better. Furthermore, the morning peak is the only time period in which the O Street Gate (near 11th Street) generates occasional queue spillback to upstream signalized intersections (in morning peak existing conditions and in all morning peak under all alternatives). In the other time periods, the model does not indicate any significant risks for queue spillback to upstream signalized intersections as a result of the O Street Gate except for under Alternative 1B. In conclusion, the morning peak period exhibits more individual turning movements operating at LOS F than either the afternoon peak or the weekend peak.

For traffic impacts under Alternative 1A, the Navy Museum itself does not appear to significantly affect traffic congestion levels in the WNY area, because the museum never generates more than 63 vehicles per hour (i.e., one trip every 57 seconds) in any time period.

Notably, the intersection of 11th Street at the I-695 on-ramp is the only intersection within the ROI that ever reaches the LOS E congestion level (always in the morning peak). This intersection also operates at LOS E in the year 2022 existing conditions. However, in all morning future scenarios, average delay per vehicle at this intersection tends to be approximately 64 seconds per vehicle (versus 57 seconds per vehicle under existing conditions). Under Alternative 1B, traffic impact is considered significant because of the sustaining serious queuing spillback. Mitigation measures could be considered by local agencies to improve the near-failing on- and off-ramps under existing conditions. The Navy and/or developer could consider mitigation measures such as improvements to the O Street Gate, programs to encourage use of other modes of transportation, or minimizing new parking to achieve parking ratio goals.

3.3 Cultural Resources

Cultural resources include archaeological resources, architectural resources, and cultural items subject to the Native American Graves Protection and Repatriation Act, Native American sacred sites, and other properties of cultural significance.

3.3.1 Regulatory Setting

Cultural resources are governed by federal laws and Executive Orders (EOs), including the NHPA, Archeological and Historic Preservation Act, American Indian Religious Freedom Act, Archaeological Resources Protection Act, EO 13007, and Native American Graves Protection and Repatriation Act. 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. For the purposes of this analysis, the term "cultural resource" refers to all resources of cultural importance protected by these federal laws and EOs, including properties of traditional religious and cultural importance.

3.3.2 Affected Environment

For the purposes of this analysis, the ROI is considered equivalent to the APE, as defined by NHPA Section 106 implementing regulations (36 CFR section 800.16[d]). The APE is defined as the geographic area or areas within which an undertaking (project, activity, program, or practice) could cause changes to the character or use of any significant cultural resources present. The APE is influenced by the scale and nature of the undertaking.

The Navy has identified two APEs, one for archaeological resources and one for architectural (i.e., aboveground) resources. The APE for archaeological resources includes the area that would be subject to ground disturbance, including construction and renovation at the SEFC E Parcels and the WNY Southeast Corner. The APE for architectural resources is larger than the construction and renovation footprint and includes approximately 2,277 acres defined as the entire WNY, the entire SEFC E Parcels, and the areas in all directions from which any of the proposed construction would be visible. The APE estimates the maximum potential limits of visibility for development and uses the maximum allowable height (130 feet) under the Height of Buildings Act. This irregularly shaped area extends northeast to the Pennsylvania Avenue Bridge, southeast to the ridge of the Anacostia Hills, southwest to the Suitland Parkway and the tip of East Potomac Park, and northwest to two blocks north of I-395/I-695 (Figure 3.3-1).

The limits of the APE for architectural resources are as follows:

- north, G Street SE between 1st Street SE and Pennsylvania Avenue SE
- northeast, Pennsylvania Avenue SE between G Street SE and the ridgeline of the Anacostia Hills
- southeast, the ridgeline of the Anacostia Hills between Pennsylvania Avenue SE and St. Elizabeths Hospital
- southwest, Suitland Parkway between the ridgeline of the Anacostia Hills and the Frederick Douglass Memorial Bridge
- west, the Anacostia River corridor between the Frederick Douglass Memorial Bridge and Hains Point
- northwest, the blocks that border the north shore of the Anacostia River between Hains Point and 1st Street SE, then 1st Street SE between the north shore of the Anacostia River and G Street SE

The Navy has conducted inventories at the WNY to identify archaeological and architectural resources that are listed or eligible for listing in the NRHP (Section 3.3.2.1, *Archaeological Resources*, and Section 3.3.2.2, *Architectural Resources*) and Native American sacred sites and other properties of cultural significance (Section 3.3.2.3, *Resources of Importance to Tribes*) present within the APE (NAVFAC Washington, 2019a). There are no cultural resources of importance to tribes in the APE (Section 3.3.2.1).

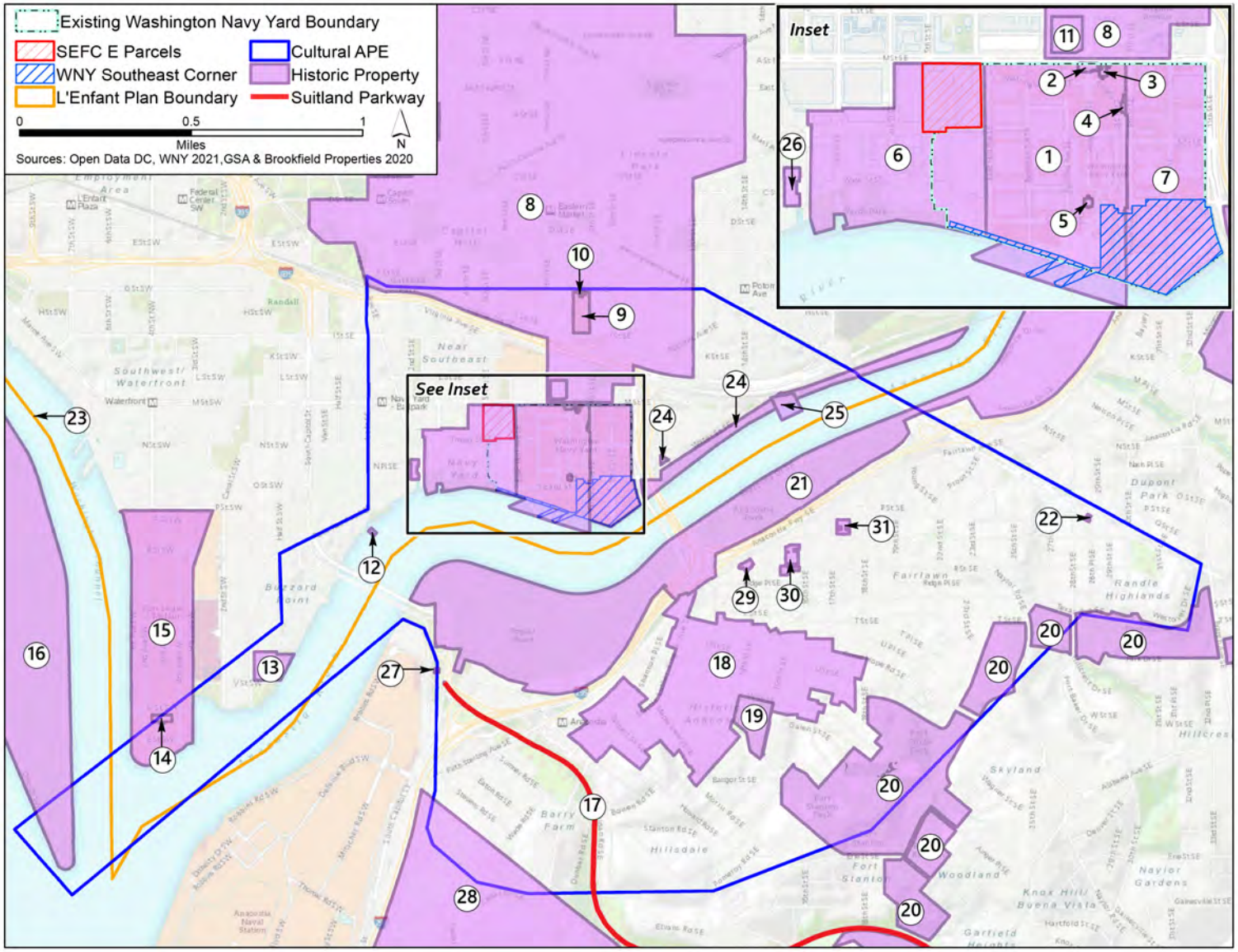


Figure 3.3-1 APEs and Historic Properties Located within the APEs

3.3.2.1 Archaeological Resources

Archaeological potential in the APE primarily relates to historic debris originating from the 19th and early 20th centuries. The approximately 15 acres at the WNY Southeast Corner, which could be exchanged to a private developer under Alternative 1 via a combination of lease and transfer, has been studied for archaeological potential. A 2011 WNY historic landscape survey (Tooker, Megan W., Adam Smith, and Ellen Hartman, 2011) found that the land surrounding Buildings 68, 70, and 154 and the Marine Railway-Dry Dock was created through infill around the period of 1800 to 1842. Similarly, the land around Buildings 166, 211, 218, and 405 was infilled and expanded around the years 1905 to 1942. The 2012 WNY archaeological survey and archaeology synthesis (NAVFAC, 2012) found that the area around Buildings 68, 70, and 154 and the Marine Railway-Dry Dock has the potential for archaeological resources associated with Land-making and Waterfront Technology, Shipbuilding and Repair, and Installation Support (NAVFAC, 2012); archaeological resources that have been identified in this area are associated with the East Shiphouse, Marine Railway, and original Eastern Boundary Wall (NAVFAC, 2012). The East Shiphouse has not been subject to comprehensive archaeological documentation, as portions of it may have been destroyed by construction of Buildings 101 and 154; however, its location at the head of the Marine Railway can be established from a series of maps (NAVFAC, 2012). Granite walls associated with the East Shiphouse were documented during archaeological monitoring (NAVFAC Washington, 2019a), but they remain unevaluated. The present Marine Railway was built over the original (1822) Marine Railway or Inclined Plane designed by Commander John Rogers. Granite remnants of the original launching way were documented during archaeological monitoring (NAVFAC Washington, 2019a); these remains were designated as site 51SE044, which has not been evaluated for eligibility in the NRHP. Early 20th century maps of the APE indicate there were several frame and brick residences near the corner of 11th and O Streets SE that predate the WNY Southeast Corner. It is possible that foundations/cellars/privies or other historic debris may remain at these locations. Although no surveys have been undertaken for these resources, it is known that a stone and frame mill was located near the north end of the 11th Street Bridge, from which subsurface structural elements may be extant.

There are no known or suspected archaeological resources within the 6-acre SEFC E Parcels. Extensive research and archaeological fieldwork conducted near the SEFC E Parcels identified five archaeological sensitivity zones. As addressed in a 2007 Programmatic Agreement (PA) among GSA, the ACHP, and the D.C. State Historic Preservation Officer (SHPO), each of those zones is located to the west of the SEFC E Parcels, and some are within the Washington Navy Yard Annex Historic District (GSA, ACHP, & D.C. SHPO, 2007). In 1991, a Phase I survey was conducted in the parking lot east of Building 74, and no archaeological resources were discovered (Engineering-Science, 1991). Two pedestrian walkovers of the SEFC E Parcels were conducted as part of a 2017 Phase IA study (Marstel-Day, 2017). The archival research indicated that the SEFC E Parcels were originally a natural cove surrounded by marshlands, which was then filled in multiple stages during the 19th century. Additionally, it was found that the Navy constructed sheds, stables, various manufacturing buildings, and railroad spurs in this area in the 19th century, all of which were demolished. However, this study reported observation of historic debris on the surface, presumably from the demolition of the 19th century structures, and speculated that some additional demolition debris could be below the present-day surface (Marstel-Day, 2017).

In 2022, the Navy conducted a Phase IA archaeological assessment of both the SEFC E Parcels and the WNY Southeast Corner (SEARCH, Inc., 2022) to cover the portions of the APE where construction/development ground disturbance could occur. This assessment included a review of environmental data (e.g., soils, geotechnical borings), previously recorded cultural information

(e.g., archaeological site forms, surveys, informal reports), and historical resources (e.g., maps, aerial photographs, historic contexts), as well as a site visit, cut-and-fill analysis, and geoarchaeological review. The Phase IA study characterized the area's physical development from pre-Navy land uses to the present and served as the basis for assessing archaeological sensitivity. The study was used to further define archaeological sensitivity of precontact and historic occupation, based on the themes established in the 2012 survey (NAVFAC, 2012). The 2022 Phase IA assessment determined that the SEFC E Parcels have a potential for buried archaeological resources associated with Ordnance Manufacturing and Testing and Shipyard Community. The Shipyard Community theme is indicated by a 1919 map showing the Seamen Gunners' Quarters located in the north central part of the SEFC E Parcels area. The WNY Southeast Corner has the potential for buried archaeological resources associated with Nineteenth Century Neighborhood, Shipbuilding and Repair, and Land-making and Waterfront Technology.

3.3.2.2 Architectural Resources

Established in 1799, the entire WNY property is eligible for, or listed in, the NRHP through a series of adjacent historic districts that have been surveyed at different times (Figure 3.3-2). There are also four buildings/structures that are individually listed in the NRHP.

Washington Navy Yard Central Yard NHL. The Washington Navy Yard Central Yard NHL was first listed in the NRHP in 1973 as the Washington Navy Yard Historic District, and subsequently designated an NHL in 1976. The original delineation encompasses the historic core area between Isaac Hull and Parsons Avenues and is referred to as the Central Yard. The Washington Navy Yard Central Yard is bounded on the north by M Street, on the east by Parsons Avenue, on the south by the Anacostia River, and on the west by Isaac Hull Avenue (Christian, G. Adams and R., 1975). Within these boundaries, 48 buildings and structures are contributing resources to the district, 13 are non-contributing, and 15 are not evaluated. Three of the contributing buildings and one structure are also individually listed in the NRHP: WNY Commandant's Office, Quarters A, Quarters B, and Latrobe Gate.

Washington Navy Yard Annex Historic District. The Washington Navy Yard Annex Historic District is the western expansion of the original Washington Navy Yard Historic District/NHL. The area west of Isaac Hull Avenue SE was first determined NRHP-eligible in 1977 and listed in the NRHP in 2008. This area is now owned by GSA, except for the Navy-owned Buildings 116, 118, and 197. The Washington Navy Yard Annex Historic District covers 60.5 acres and includes 15 contributing resources and 5 non-contributing resources. Most of this district is within the SEFC; however, the eastern boundary is Isaac Hull Avenue, encompassing a portion of the current WNY property, including Buildings 116, 118, 197, 204, and 273. Buildings 116, 118, and 197 are determined to be contributing resources to the historic district, and Buildings 204 and 273, not owned by the Navy, are assessed as non-contributing (NAVFAC Washington, 2019a).

Washington Navy Yard Eastern Extension Historic District. The Washington Navy Yard Eastern Extension Historic District is referred to as the Eastern Extension or East Yard (the area between Parsons Avenue and 11th Street). The area east of Parsons Avenue, extending to 11th Street SE, was surveyed in 2001; the SHPO concluded this district to be eligible for the NRHP as an extension of the original Washington Navy Yard Historic District/NHL boundary (District of Columbia, 2009). The Washington Navy Yard Eastern Extension Historic District includes 18 contributing resources and 8 non-contributing resources. The boundaries of the Washington Navy Yard Eastern Extension follow the boundaries of the expansion of the WNY from Parsons Avenue to 11th Street SE, circa 1910 to 1920 (NAVFAC Washington, 2011).

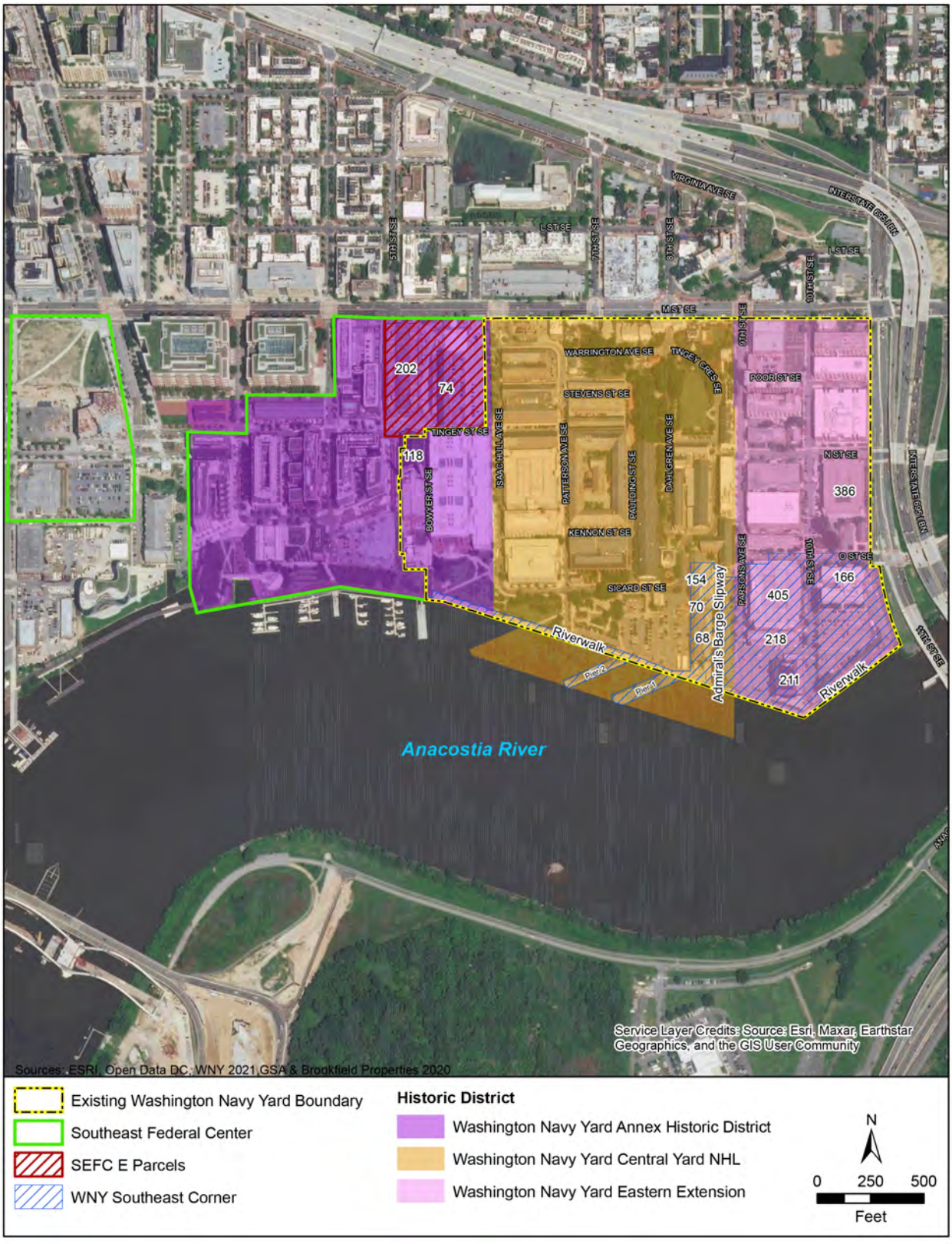


Figure 3.3-2 Washington Navy Yard Historic Districts

The APE also includes areas north, southwest, south, and southeast of the WNY within potential view of proposed construction (both Navy and developer) under Alternatives 1A and 1B and proposed Navy construction under Alternatives 2A and 2B (Figure 3.3-1). The Navy identified historic properties within the APE by reviewing its own records of surveys and evaluations, as well as records provided by the GSA, in order to identify historic properties within the WNY and SEFC E Parcels. The Navy also used the *District of Columbia Inventory of Historic Sites*, including updates and pending nominations in order to identify other historic properties within the APE. Finally, consulting parties in the Section 106 process provided information about other historic properties not captured in the above records. The Navy identified 31 historic properties within the APE, as described in Table 3.3-1 and illustrated in Figure 3.3-1. Brief descriptions of each of these historic properties and their NRHP eligibility significance are described in the NHPA Section 106 consultation documentation included in Appendix C, *National Historic Preservation Act Section 106* Documentation.

Table 3.3-1 Historic Properties Located Within the APE for Architectural Resources

Figure 3.3-1 Locater Number	*Historic Property Name*	*Historic Status*
1	WNY Central Yard	National Historic Landmark
2	WNY Latrobe Gate	National Register Listed
3	WNY Quarters A (Tingey House)	National Register Listed
4	WNY Quarters B	National Register Listed
5	WNY Commandant's Office	National Register Listed
6	WNY Annex Historic District	National Register Listed
7	WNY Eastern Extension Historic District	National Register Eligible
8	Capitol Hill Historic District	National Register Listed
9	Marine Barracks Washington	National Historic Landmark
10	Marine Barracks Commandant's House	National Register Listed
11	Washington and Georgetown Car Barn	National Register Listed
12	Capitol Power Plant Pump House	National Register Listed
13	Buzzard Point Power Plant	National Register Listed
14	National War College	National Historic Landmark
15	Fort McNair Historic District	National Register Listed
16	East and West Potomac Parks Historic District	National Register Listed
17	Suitland Parkway	National Register Listed
18	Anacostia Historic District	National Register Listed
19	Frederick Douglass National Historic Site	National Register Listed
20	Civil War Fort Sites and Fort Circle Park System - Fort Circle Parks Historic District	National Register Listed
21	Anacostia Park	National Register Eligible
22	Engine Company No. 19 (Randle Highlands Firehouse)	D.C. Inventory of Historic Properties
23[1]	Plan for the City of Washington (L'Enfant Plan)	National Register Listed
24	Boathouse Row	National Register Eligible
25	Washington Yacht Club	National Register Listed
26	Main Sewerage Pumping Station	National Register Listed
27	Poplar Point Pumping Station	National Register Eligible
28	St Elizabeths Hospital	National Historic Landmark
29	Anderson Tire Manufacturing Company	National Register Eligible
30	Anacostia High School	National Register Eligible
31	Kramer Middle School	National Register Eligible

Notes: APE = Area of Potential Effects; D.C. = District of Columbia; WNY = Washington Navy Yard.

Table 3.3-2 identifies the NRHP eligibility status of resources located within the construction footprint.

Table 3.3-2 NRHP Status of Resources Included in the Construction Footprint

Building/ Structure	*Construction Date*	*Use*	*Historic District*	*NRHP Status*	*Proposed Action*
WNY Southeast Corner[(1)]					
68	1901	Storage Building	WNY Central Yard NHL	Contributing	Lease
70	1897	David Taylor Model Basin	WNY Central Yard NHL	Contributing	Lease
154	1918	Storage building	WNY Central Yard NHL	Non-contributing	Lease
166	1918	Seaman Gunners' School/Receiving Station	WNY Eastern Extension HD	Contributing	Transfer
211	1942	Gunners' Mates School	WNY Eastern Extension HD	Non-contributing	Transfer
218	1943	Paint Storage	WNY Eastern Extension HD	Non-contributing	Transfer
301 and 302	1942	Piers 1 and 2	WNY Central Yard NHL	Contributing	Lease
308	1855	Marine Railway/Dry Dock	WNY Central Yard NHL	Contributing	Lease
405	1998	Parking	WNY Eastern Extension HD	Non-contributing	Transfer/Shared Use
414	1950	Retaining Wall	WNY Central Yard NHL	Non-contributing	Lease
SEFC E Parcels					
74	1898/1938	Transportation (locomotive) Repair Shop/Vacant, Office	WNY Navy Yard Annex HD	Contributing	Acquire/Repurpose
202	1941	Broadside Mount Shop/Vacant	WNY Navy Yard Annex HD	Contributing	Acquire/Repurpose
Navy Yard Wall	1906	Boundary Wall	WNY Navy Yard Annex HD	Contributing	Acquire
118[(2)]	1904	Navy Yard Power Plant	WNY Navy Yard Annex HD	Contributing	Repurpose

Notes: HD = Historic District; NHL = National Historic Landmark; NRHP = National Register of Historic Places; SEFC = Southeast Federal Center; WNY = Washington Navy Yard.

1. Structures 241 (1942 Sewage Pump Station), 391 (1991 Gun Mounts), and 443 (2004 Sentry House) are within the WNY Southeast Corner but would not convey under Alternative 1, so they are not listed in this table.

2. Structure 118 is not part of the SEFC E Parcels acquisition (already Navy owned) but may be repurposed under Alternatives 1 or 2.

3.3.2.3 Resources of Importance to Tribes

The Navy consults with federally recognized Indian tribes and Native Hawaiian Organizations on actions with the potential to significantly affect protected tribal resources, tribal treaty rights, or native lands and, as appropriate, on actions with the potential to significantly affect archaeological resources of interest or significance to Indian tribes and Native Hawaiian Organizations. No traditional cultural properties, Native American sacred sites, or other properties of cultural significance are known to be located within the APEs.

There are currently no federally recognized tribes in D.C. or Maryland; however, the Delaware Nation and the Delaware Tribe are two federally recognized tribes that encompass the descendants of the tribes that once populated the mid-Atlantic region. The Navy will send letters describing the Proposed Action and alternatives to the Delaware Nation and the Delaware Tribe concurrent with the publication of the Draft EIS, requesting information about any traditional cultural properties and cultural resources of potential interest to the Delaware Nation and the Delaware Tribe and requesting comments from the tribes on the Proposed Action and alternatives.

3.3.3 Environmental Consequences

For analysis of potential impacts to cultural resources, the Navy considers both direct and indirect effects, using the terminology of 36 CFR part 800, the implementing regulations of NHPA Section 106 (e.g., “effects” in place of “impacts”). Effect is defined as alteration to the characteristics of n historic property qualifying it for inclusion in or eligibility for the National Register (36 CFR 800.16). The implementing regulations state: “an adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative.” (36 CFR 800.5).

3.3.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. The Navy would not acquire the SEFC E Parcels or redevelop the parcels. No Navy relocations as a result of a land exchange would occur at the WNY. The No Action Alternative assumes the private developer would proceed with development of the SEFC E Parcels and is used as a comparison for the action alternatives.

If the No Action Alternative is carried forward, any future projects must adhere to the 2007 PA and associated Historic Covenant (GSA, ACHP, & D.C. SHPO, 2007).

As stated in the GSA EIS, potential adverse effects could occur on as-yet undiscovered archaeological resources because of soil remediation efforts and site preparation and excavation associated with development of the SEFC E Parcels (GSA, 2004). Although the SEFC E Parcels were not identified as archaeologically sensitive zones in the PA, all phased development of the SEFC E Parcels requires early consultation with the D.C. SHPO regarding any proposed ground-disturbing activity. GSA is required to develop a Discovery Plan, which would ensure that, if unanticipated discoveries are made, an archaeologist (meeting the Secretary of Interior’s Professional Qualifications Standards for Archaeology) would evaluate the site for NRHP eligibility and take measures to protect the site, in consultation with the D.C. SHPO.

The effects to historic properties from development of the SEFC E Parcels under the No Action Alternative would be as described in the 2004 Final EIS for Development of the Southeast Federal Center (GSA, 2004): "Potential, long-term impacts on other historic resources in the APE could range from minor, negative to positive. Potential effects have been considered in consultation with the DC SHPO, the ACHP, and other consulting parties as required by Section 106 of the National Historic Preservation Act." The ROD noted that a PA would address maintenance/rehabilitation responsibilities and historic preservation guidelines and design review procedures for the SEFC development (GSA, 2004). The PA sets forth stipulations for developing the property compatible with its historic character. GSA has to ensure that the development is carried out in a manner consistent with the Revised Master Plan and the Historic Preservation Design Guidelines and in consultation with SHPO and ACHP (GSA, ACHP, & D.C. SHPO, 2007). The NCPC and CFA would provide guidance to the GSA on the design submissions. The PA ensures that all future additions and rehabilitations of historic properties follow *The Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR part 68) (SOI Standards).

As stated in the GSA EIS, there would be adverse effects to the setting of the Washington Navy Yard Annex Historic District by introduction of visual elements inconsistent with the historic character of the district. For purposes of comparing the No Action Alternative to Alternatives 1 and 2 in this EIS, the Navy has assumed that the developer would comply with the 2007 PA and Historic Covenant stipulations; however, an adverse visual effect to the Washington Navy Yard Annex Historic District would occur.

NEPA impacts to historic properties (archaeological and architectural resources), including the Washington Navy Yard Annex Historic District, under the No Action Alternative would be significant but would be mitigated by adhering to the stipulations contained within the 2007 PA.

3.3.3.2 Alternative 1A Land Acquisition through Land Exchange with Construction and Operation of Relocated Navy Museum (Preferred Alternative)

Impacts to cultural resources (archaeological and architectural resources) from land acquisition through land exchange under Alternative 1A are discussed below, followed by impacts of construction and operation of a relocated Navy Museum on the SEFC E Parcels.

Impacts from Land Acquisition through Land Exchange

The following addresses impacts to cultural resources from land acquisition through land exchange, as well as private development and in-kind considerations on the WNY Southeast Corner.

Under Alternative 1A, the Navy would exchange certain properties within the WNY Southeast Corner to obtain the SEFC E Parcels, as described in Section 2.3.2, *Alternative 1: Land Acquisition through Land Exchange*. Under this alternative, the developer would acquire (by a combination of lease and transfer) the following WNY assets: Buildings 68, 70, 154, 166, 211, and 218; the Admiral's Barge Slipway and associated parking area (Building 405 and surface parking areas); the Riverwalk; and Piers 1 and 2 (Table 2.3-2). After the land exchange, the developer would construct mixed-use (residential, office, commercial, retail) buildings on the transferred property and rehabilitate existing buildings for commercial/retail use on leased property (see Figure 2.3-3). Private development of the WNY Southeast Corner would include the renovation of buildings for retail and parking, as well as the construction of new buildings for office, residential, and retail space (Table 2.3-3). Historic Building 166 could be renovated or demolished to allow construction of a new office building. The Navy is conducting an assessment and economic analysis to identify the most cost- and resource-effective approach for the treatment of Building 166 (renovation or demolition/replacement). The Navy would consult with ACHP,

D.C. SHPO, and other consulting parties before a determination on Building 166 is made. Under NEPA, the Navy is analyzing the scenario with the highest potential for impacts, which is demolition.

Archaeological Resources

As described in Section 3.3.2.1, *Affected Environment, Archaeological Resources*, the WNY Southeast Corner has the potential for buried archaeological resources (historic debris) associated with Nineteenth Century Neighborhood, Shipbuilding and Repair, and Land-making and Waterfront Technology (SEARCH, Inc., 2022). Potential adverse effects to archaeological resources could occur from proposed building demolition, construction, and stormwater system improvements. Potential adverse effects to archaeological resources would be resolved through NHPA Section 106 consultation through the development and implementation of a PA described at the end of this subsection (see *Proposed Historic Covenants and PAs*).

Under NEPA, impacts to archaeological resources under Alternative 1A could be significant; however, impacts would be mitigated by adhering to the stipulations contained within the PA(s) described at the end of this subsection (see *Proposed Historic Covenants and PAs*).

Architectural Resources

The buildings and structures included in the WNY Southeast Corner are listed in Table 3.3-3.

Table 3.3-3 NRHP Status of Resources Included in the WNY Southeast Corner

Building/ Structure[(1)]	*Construction Date*	*Use*	*Historic District*	*NRHP Status*	*Proposed Action*
68	1901	Storage Building	WNY Central Yard NHL	Contributing	Lease/Modifications
70	1897	David Taylor Model Basin	WNY Central Yard NHL	Contributing	Lease/Modifications
154	1918	Storage Building	WNY Central Yard NHL	Non-contributing	Lease/Modifications
166	1918	Seaman Gunners' School/Receiving Station	WNY Eastern Extension HD	Contributing	Transfer/Rehabilitate or Demolish[(2)]
211	1942	Gunners' Mates School	WNY Eastern Extension HD	Non-contributing	Transfer/Demolish
218	1943	Paint Storage	WNY Eastern Extension HD	Non-contributing	Transfer/Demolish
301 and 302	1942	Piers 1 and 2	WNY Central Yard NHL	Contributing	Lease/Rehabilitate
308	1855	Admiral's Barge Spillway	WNY Central Yard NHL	Contributing	Lease/Rehabilitate
405	1998	Parking	WNY Eastern Extension HD	Non-contributing	Shared Use/Rehabilitate
414	1950	Retaining Wall	WNY Central Yard NHL	Non-contributing	Lease/Repair

Notes: HD = Historic District; NHL = National Historic Landmark; NRHP = National Register of Historic Places; WNY = Washington Navy Yard.
1. Structures not listed—241 (1942 Sewage Pump Station), 391 (1991 Gun Mounts), and 443 (2004 Sentry House)—are within the WNY Southeast Corner but will not convey as part of the Proposed Action.
2. Treatment of Building 166 in the Proposed Action has not been determined. For the purposes of NEPA impact analysis, the highest potential impact scenario of demolition was evaluated.

The buildings and structures listed in Table 3.3-3 proposed for lease or shared use as part of the Proposed Action would undergo renovations by the private developer as described in Sections 2.3.2.1, *Private Development on the WNY Southeast Corner under Alternative 1*, and 2.3.2.2, *In-Kind-Considerations at WNY Provided by the Developer under Alternative 1*. Demolition of Building 166 (highest potential impact scenario) would result in an adverse effect to the Washington Navy Yard Eastern Extension Historic District, to which it is a contributing element. The other buildings proposed for demolition are non-contributing elements to the historic district, and their demolition would not cause an adverse effect to the district. The proposed lease of the Washington Navy Yard Central Yard NHL contributing resources Buildings 68 and 70, Piers 1 and 2, and the Admiral's Barge Slipway could involve rehabilitation and/or repair, which could result in an adverse effect to the NHL's integrity of design, setting, materials, workmanship, feeling, and/or association.

Under NEPA, impacts to these contributing elements to the Washington Navy Yard Central Yard NHL and the Washington Navy Yard Eastern Extension Historic District, due to implementation of Alternative 1A, would be significant; however, impacts would be mitigated by adhering to the stipulations contained within the Historic Covenants and PA(s) described at the end of this subsection (see *Proposed Historic Covenants and PAs*).

Visual Effects

Proposed construction of new large residential and office buildings on land transferred from the Navy to the private developer would potentially result in adverse effects primarily at the WNY, including the Washington Navy Yard Central Yard NHL, Latrobe Gate, Quarters A, Quarters B, Commandant's Office, Washington Navy Yard Annex Historic District, and Washington Navy Yard Eastern Extension Historic District, by introduction of visual elements inconsistent with the historic character of the districts and properties. This adverse effect would be similar to the effects from development that would occur under the No Action Alternative. As noted above, the area around the WNY has been experiencing other development in recent years, and the visual environment around the WNY now includes other tall buildings of modern architecture, as well as modern infrastructure. Although the proposed new residential towers would be consistent with the modern buildings in the area, their size and proximity to the Washington Navy Yard Eastern Extension Historic District and Washington Navy Yard Central Yard NHL could result in an adverse effect to the visual setting. However, it would not rise to a degree such that the historic properties would no longer be eligible for the NRHP. Any adverse effects would be considered significant impacts under NEPA but would be resolved through NHPA Section 106 consultation to develop and execute Historic Covenants and PA(s) as described at the end of this subsection (*see Proposed Historic Covenants and PAs*).

It is also possible that the proposed new residential and office tower(s) would be visible from other, more distant historic properties (Table 3.3-1). The viewshed from these properties continues to be modified by ongoing development of other tall buildings of modern architecture and infrastructure. Due to the greater distance to these properties, it is unlikely that the change to the viewshed by the proposed new construction would be recognizable to any visitor to these properties. Therefore, there would be no adverse effects to the historic properties outside the WNY, except for potential adverse effects to Anacostia Park and the Plan for the City of Washington (L'Enfant Plan), as described below.

Development of the WNY Southeast Corner parcels would be visible from Anacostia Park between the Frederick Douglass Memorial Bridge and Pennsylvania Avenue Bridge. Extensive field evaluation of the vistas from Anacostia Park revealed that development would change the vista from the park across the Anacostia to the WNY by introducing new elements in the form of large new buildings. Potential adverse

effects to Anacostia Park would be addressed through Section 106 consultation to develop and execute PA(s) as described at the end of this subsection (see *Proposed Historic Covenants and PAs*).

Proposed development in the WNY Southeast Corner under Alternative 1A could have an adverse effect on the L'Enfant Plan. The proposed development would not be visible from Reservation Nos. 5 (Greenleaf Point, Arsenal, Fort McNair) or 17 (Garfield Park). The proposed development is not within the corridors or vertical airspace of any avenues or streets described in the National Register nomination as contributing to the L'Enfant Plan, but it may be visible from them. The contributing sections of 2nd through 10th Streets SE terminate at M Street SE at the Boundary Wall for the WNY. First and 11th Streets SE terminate at the Anacostia River. The axial vistas along Potomac Avenue SE and 8th Street SE historically terminated at the Latrobe Gate of the WNY; the other axial vistas within the APE do not pass through the area where the proposed development would occur.

The proposed development would include a small part of Reservation No. 14 (WNY). The 1791 L'Enfant Plan designated Reservation No. 17, the area between 7th and 9th Streets SE, as a major government or commercial center. In 1799, Congress appropriated funds for construction of the Navy Yard, by then redesignated as Reservation No. 14, and expanded west to 6th Street SE. This area became the core of the WNY and has been in continuous Navy use since 1799. However, only the land mass under the north ends of Buildings 70 and 154 and the Marine Railway existed when the Navy Yard was established. Reservation No. 14 would remain in Navy ownership, although commercial development would be allowed in and around Buildings 70 and 154 and the Marine Railway.

There would be no adverse effect on the Plan's association with the establishment of the United States and its capital or on associations with Pierre L'Enfant or subsequent designers or developers. However, the full extent of the effects of Alternative 1A on the L'Enfant Plan cannot be determined until plans for future construction on the WNY Southeast Corner are developed. The Navy proposes to address the potential for adverse effects by including ongoing evaluation of effects on the L'Enfant Plan in the PA(s) described at the end of this subsection (*see Proposed Historic Covenants and PAs*).

Impacts from Reuse of SEFC E Parcels with Construction and Operation of Relocated Navy Museum

Under Alternative 1A, the Navy Museum Development Foundation would construct and operate a new National Museum of the U.S. Navy. A multi-functional museum campus would include repurposing Buildings 74, 202 (SEFC E Parcels), and 118 (within the WNY), which are all contributing resources to the Washington Navy Yard Annex Historic District. The Navy would also build a new building (up to 110 feet high) to house the Navy Museum and conference center (Figure 2.3-3). The buildings and structures included in the SEFC E Parcels are listed in Table 3.3-4.

Table 3.3-4 NRHP Status of Resources Included in the SEFC E Parcels

Building/ Structure	*Construction Date*	*Use*	*Historic District*	*NRHP Status*	*Proposed Action*
74	1898/1938	Transportation (locomotive) Repair Shop/Vacant, Office	WNY Annex HD	Contributing	Acquire/ Repurpose
202	1941	Broadside Mount Shop/Vacant	WNY Annex HD	Contributing	Acquire/ Repurpose
Navy Yard Wall	1906	Boundary Wall	WNY Annex HD	Contributing	Acquire
118(1)	1904	Navy Yard Power Plant	WNY Annex HD	Contributing	Repurpose

Notes: HD = Historic District; NRHP = National Register of Historic Places; SEFC = Southeast Federal Center; WNY = Washington Navy Yard.
1. Structure 118 is not part of the SEFC E Parcels acquisition (already Navy owned) but may be repurposed under Alternatives 1 or 2.

Archaeological Resources

There are no known archaeological sites in the SEFC E Parcels. A Phase IA archaeological study was completed in 2017, which noted that the area has been subject to fill episodes, followed by 19th century construction of facilities. Some debris from demolition of those facilities was observed on the surface and presumed to also be beneath the surface (Marstel-Day, 2017). The 2022 Phase IA survey (SEARCH, Inc., 2022) found the potential for buried archaeological resources at the SEFC E Parcels associated with Ordnance Manufacturing and Testing and Shipyard Community.

Given the potential for intact significant archaeological resources beneath the surface, there would be a potential for adverse effects to archaeological resources under Alternative 1A as a result of ground-disturbing activities from proposed building demolition, construction, and utilities systems improvements. Potential adverse effects to archaeological resources would be resolved through NHPA Section 106 consultation through the development and implementation of a PA described at the end of this subsection (*see Proposed Historic Covenants and PAs*).

Under NEPA, impacts to archaeological resources under Alternative 1A could be significant; however, impacts would be mitigated by adhering to the stipulations contained within the PA(s) described at the end of this subsection (*see Proposed Historic Covenants and PAs*).

Architectural Resources

Construction of the proposed new museum building between M Street and Tingey Street and the repurposing of Buildings 74, 202 (SEFC E Parcels), and 118 (within the WNY) could result in an adverse effect to the Washington Navy Yard Annex Historic District. This location has historically been used for sheds, stables, various ordnance manufacturing buildings, and as open space for railroad spurs. The Navy Museum would constitute a new use at this location. The integrity of the Washington Navy Yard Annex Historic District and, to a lesser degree, the Washington Navy Yard Central Yard NHL across Isaac Hull Avenue could slightly diminish with the proposed Navy Museum use versus the historic character-defining, industrial use. However, the proposed building would not change the eligibility status of the Washington Navy Yard Annex Historic District.

Buildings 74, 118, and 202, which are contributing resources to the historic district, may be rehabilitated and repurposed as part of the Navy Museum construction under Alternative 1A. Building 74 was built at this site in 1939 as a Transportation Repair Shop, where railroad cars were repaired for use at the WNY. Building 118 was built in 1905 as the Power Plant Building and as a twin to the adjacent Boiler Plant Building (Building 116). Building 202 was built in 1941 as the Broadside Mount Shop, where it functioned as a gun manufacturing/assembly shop for the WNY. Adverse effects to Buildings 74, 118, and 202 could result from removal of any of their historic exterior materials, including windows, doors, or walls.

Under Alternative 1A, there would be partial removal of the Navy Yard Boundary Wall along M Street between Buildings 74 and 202 to provide entrance to the Navy Museum campus. The brick wall along M Street and the northern boundary of the Washington Navy Yard Annex Historic District is a significant contributing feature to the district. Throughout its history, the wall section immediately north of Building 74 has gone through several changes of openings and closings. The railroad entered the WNY at this location sometime prior to 1893 and continued to operate through this location to at least as late as 1952. The Washington Navy Yard Annex Historic District NRHP nomination states that an opening in the wall immediately north of Building 74 was made prior to 1926 (J. Flynn, C. Barton, L. Trieschmann, & E. Eig, 2007, pp. 7-17). Historic aerial photographs show that this opening was closed by 1964 and then reopened in 2008 to construct an access road for Building 202. In 2012, an opening in the wall at this

location was infilled as part of mitigation related to the rehabilitation of the Sentry House at 4th and M Streets SE.

The Navy Yard Boundary Wall is a significant feature of the Washington Navy Yard Annex Historic District, as part of a continuous wall representing a physical boundary between the Navy's installation and the civilian population. Alterations of the wall (i.e., openings and closures of those openings) over the course of its history were made to incorporate changes in transportation access needs over time. Reusing a historic opening to create a break in the historic wall would not diminish the significance of the wall or its integrity. Creating a new break in the historic wall could result in an adverse effect by diminishing the significance of the wall and its integrity, thereby affecting five out of seven aspects of its integrity:
(1) design, (2) materials, (3) workmanship, (4) feeling, and (5) association.

Under NEPA, impacts to these contributing elements to the Washington Navy Yard Central Yard NHL and Navy Yard Annex Historic District due to implementation of Alternative 1A would be significant; however, impacts would be mitigated by adhering to the stipulations contained within the PA(s) described at the end of this subsection (*see Proposed Historic Covenants and PAs*).

Visual Effects

The area surrounding the SEFC E Parcels is urban, with views of significant cultural resources primarily limited to the streets adjacent to the SEFC E Parcels. The location of the Navy Museum would not affect the view of the WNY from most areas of the SEFC E Parcels, primarily looking from the east or west along M Street SE. Notional concepts of how the Navy Museum would appear within the viewing points adjacent to WNY are shown in Figures 3.3-3 and 3.3-4, depicting views from the Tingey and 4th Street intersection and from M Street west of WNY, respectively. Several large structures within a few blocks of the SEFC E Parcels have been built on the southern side of M Street since 2010, disrupting the view toward the WNY. The Navy Museum would be of similar or lower height to the extant neighboring historic properties, such as Building 202. From Tingey and 4th Streets, there would be potential for an adverse effect with the proposed construction rising above Building 74 and potentially dominating the viewshed (Figure 3.3-3). The new construction on the SEFC E Parcels would be immediately adjacent to the Washington Navy Yard Annex Historic District and Washington Navy Yard Central Yard NHL boundaries and would have the potential to adversely affect the NHL's integrity of setting and feeling through change from the historic military and industrial character of the surroundings, to include the proposed Navy Museum use.

A new structure could also affect the view of the WNY from some historic properties outside the WNY. Looking from the east along M Street, the SEFC E Parcels are visible as far east as the NRHP-listed Washington and Georgetown Car Barn at 770 M Street SE, within the Capitol Hill Historic District. The new construction would hide Building 74 from view and partially obstruct views of Buildings 202 and 118 (all contributing resources to the Washington Navy Yard Annex Historic District). Views north of M Street are severely limited due to recent construction, especially the large residential complex along L Street between 5th and 7th Streets (i.e., the Capper/Carrollsburg Redevelopment). However, the proposed new museum building could still be visible from other points north of M Street, such as from the southern portion of the Capitol Hill Historic District, the Old Eastern Market Square (5th, 7th, K, and L Streets, a contributing element of the L'Enfant Plan) and the farther north U.S. Marine Corps Barracks and Commandant's House. These properties would not be adversely affected, because it is unlikely that the change to the viewshed by construction of new facilities to house the relocated Navy Museum would be recognizable to any visitor to these properties.

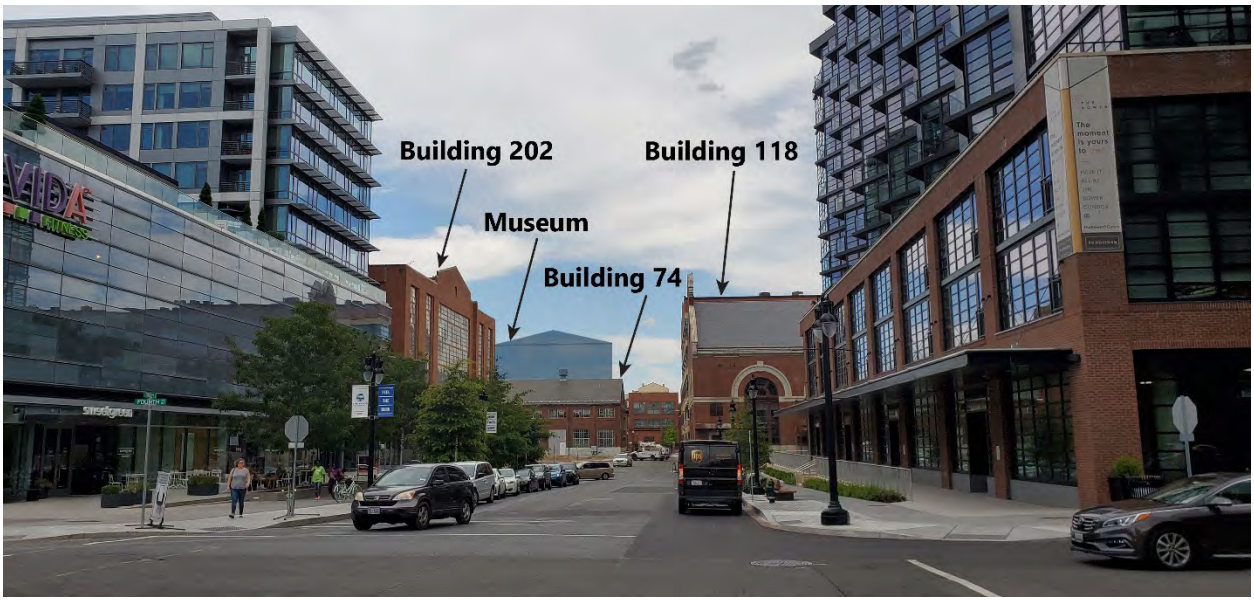


Figure 3.3-3 View of a Conceptual Building at the SEFC E Parcels from Tingey and 4th Streets

Figure 3.3-4 View of a Conceptual Building at the SEFC E Parcels from M Street, Looking East

Under NEPA, impacts to these contributing elements to the Washington Navy Yard Central Yard NHL and Washington Navy Yard Annex Historic District due to implementation of Alternative 1A would be significant; however, impacts would be mitigated by adhering to the stipulations contained within the PA(s) described at the end of this subsection (*see Proposed Historic Covenants and PAs*).

Proposed development in the SEFC E Parcels under Alternative 1A could have an adverse effect on the L'Enfant Plan. The proposed development would not be visible from Reservation Numbers (Nos.) 5 (Greenleaf Point, Arsenal, Fort McNair) or 17 (Garfield Park). The proposed development is not within the corridors or vertical airspace of any avenues or streets described in the National Register nomination as contributing to the L'Enfant Plan, but it may be visible from them. The contributing sections of 2nd

through 10th Streets SE terminate at M Street SE at the Boundary Wall for the WNY. First and 11th Streets SE terminate at the Anacostia River. The axial vistas along Potomac Avenue SE and 8th Street SE historically terminated at the Latrobe Gate of the WNY; the other axial vistas within the APE do not pass through the area where the proposed museum construction would occur.

The proposed museum construction would be within the vista looking south from original Reservation Nos. 15 and 16 (current Reservation No. 19) (see Figure 3.3-5). Reservation Nos. 15 and 16 were the original Eastern Market Site and had direct vistas south to the Anacostia River and planned 6th Street Canal. However, the market fell out of use during the Civil War and relocated to its current site in 1873. Reservation Nos. 15 and 16 were redesignated as Reservation No. 19 and served as a playground by 1914. Recreational use continues in some form to the present. Meanwhile, the Navy acquired the land east of 5th Street SE in 1801 and expanded west to 4th Street SE in 1902. Since the first decade of the 20th century, the vista south from Reservation 19 has terminated at the Navy Yard Wall on the south side of M Street SE, a condition that would not change with Alternative 1A.

There would be no adverse effect on the L'Enfant Plan's association with the establishment of the United States and its capital or on associations with Pierre L'Enfant or subsequent designers or developers. There would also be no adverse effect on the design of the Plan. However, the full extent of the effects of Alternative 1A on the L'Enfant Plan cannot be determined until plans for future construction on the SEFC E Parcels are developed further. The Navy proposes to address the potential for adverse effects by including ongoing evaluation of effects on the L'Enfant Plan in the PA(s) described at the end of this subsection (*see Proposed Historic Covenants and PAs*).

Proposed Historic Covenants and PAs

In accordance with NHPA Section 106, the Navy proposes to resolve the potential for direct and indirect adverse effects on historic properties through the negotiation of Historic Covenant(s) and PA(s) listed below:

WNY Southeast Corner

- The Navy would negotiate PA(s), with the ACHP, D.C. SHPO, National Park Service, and the private developer, to govern implementation of the Proposed Action and resolve adverse effects resulting from rehabilitations and new construction within both the leased and transferred parts of the WNY Southeast Corner parcels. The PA(s) would state the rights and obligations of all parties and would be limited term, to expire after the initial period of development. The PA(s) would also resolve adverse effects on the Washington Navy Yard Eastern Extension Historic District and include stipulations for the treatment of archaeological resources, which could include providing for archaeological monitoring of ground-disturbing activities associated with facility construction and demolition.
- The Navy would negotiate Historic Covenant(s), which would be held by the D.C. SHPO. The Historic Covenant(s) would be an encumbrance on all parts of the WNY Southeast Corner. In addition, the requirements of the Historic Covenant(s) would be included in the lease agreement for the part of the WNY Southeast Corner parcels to be leased to a private developer. The Historic Covenant(s) would continue in perpetuity and would govern alterations to historic resources, demolition of historic resources, and new ground disturbance after the period of initial development and rehabilitation concludes.

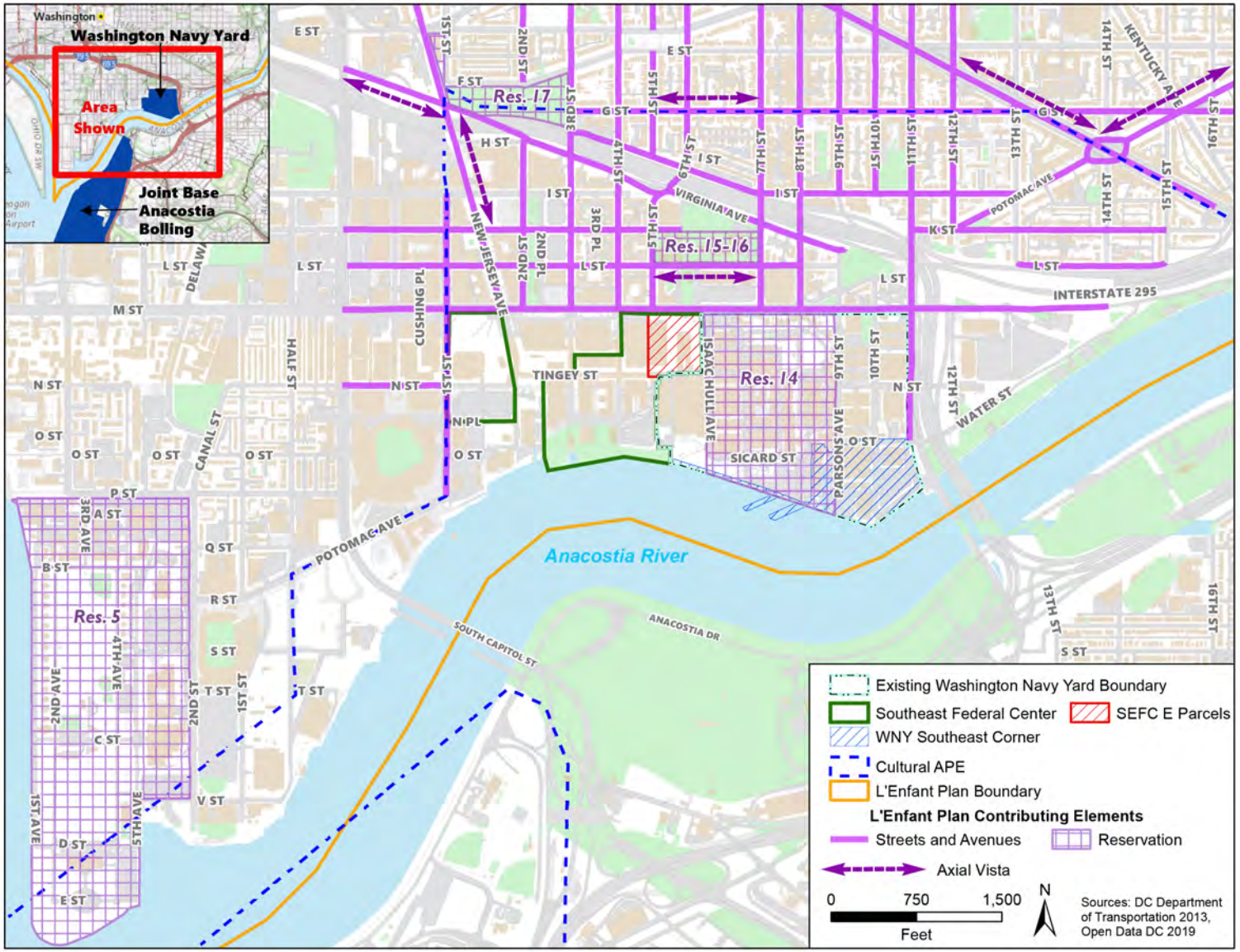


Figure 3.3-5 L'Enfant Plan, Contributing elements within the Visual APE

SEFC E Parcels

- The GSA would amend the 2007 PA (GSA, ACHP, & D.C. SHPO, 2007) to remove Buildings 74 and 202, the Boundary Wall, and the SEFC E Parcels. The Navy would execute a Memorandum of Understanding (MOU) to assume the responsibilities of the 2007 Historic Covenant and the transfer of Caretaker Status of Buildings 74, 202, and the Boundary Wall from the GSA to the Navy, which would include minimum maintenance and stabilization standards.
- The Navy would negotiate a PA, to include any parties associated with the development of the SEFC E Parcels, to govern the implementation of the undertaking and resolve adverse effects on the Washington Navy Yard Central Yard NHL resulting from new construction on the SEFC E Parcels. This PA would also resolve adverse effects resulting from rehabilitation and new construction in the Washington Navy Yard Annex and Western Extension Historic Districts and include stipulations for the treatment of archaeological resources, which could include providing for archaeological monitoring of ground-disturbing activities associated with facility construction and demolition.
- The Navy proposes to address the potential for adverse effects on the L'Enfant Plan by including ongoing evaluation of effects on Anacostia Park and the L'Enfant Plan in the PAs described above governing future development of the WNY Southeast Corner and SEFC E Parcels.

3.3.3.3 Alternative 1B Land Acquisition through Land Exchange with Construction and Operation of Navy Administrative Development

Impacts to cultural resources from land acquisition through land exchange under Alternative 1B are discussed below, followed by impacts of construction and operation of Navy administrative development on the SEFC E Parcels. After the Navy acquires the SEFC E Parcels, the Navy would construct administrative office space through a combination of new construction and adaptive repurposing of the same buildings as under Alternative 1A (Buildings 74 and 202 [SEFC E Parcels]), except for Building 118. New construction would be placed in the same space as the Navy Museum under Alternative 1A but would encompass a slightly larger footprint and would not be as tall as the museum (Figure 2.3-9).

The effects to historic properties under Alternative 1B would be similar to, but less than, those described for Alternative 1A. Under Alternative 1B, there would be no break in the Boundary Wall, a contributing resource to the Washington Navy Yard Annex Historic District, to create public access from M Street. The visual effect of the proposed administrative office buildings on the Washington Navy Yard Annex Historic District, Washington Navy Yard Central Yard NHL, and other nearby historic properties could be less than the visual effect from a relocated Navy Museum (Alternative 1A) because the buildings would be not as tall as the Navy Museum. The effects from development of the WNY Southeast Corner would be the same as described for Alternative 1A.

Under NEPA there would be significant impacts to cultural resources, but impacts would be mitigated by adhering to the stipulations specified in the MOU(s) and PA(s) executed through consultation pursuant to NHPA Section 106 and described at the end of the Alternative 1A subsection (*see Proposed Historic Covenants and PAs*).

3.3.3.4 Alternative 1C Land Acquisition through Land Exchange with No Development on SEFC E Parcels

With Alternative 1C, the Navy would obtain the SEFC E Parcels and incorporate the land within the WNY fence line but leave the parcels in their current state with no foreseeable development planned. Only minor ground disturbance would occur with construction of a fence to enclose the SEFC E Parcels within the WNY boundary. Contributing resources to the Washington Navy Yard Annex Historic District would not change, and there would be no change to the viewshed of nearby historic properties. The effects from development of the WNY Southeast Corner and associated PA(s) and MOU(s) would be the same as described for Alternative 1A.

Because there would be no development of the SEFC E Parcels under Alternative 1C, the PA and MOU described below would be implemented.

- The GSA would amend the 2007 PA (GSA, ACHP, & D.C. SHPO, 2007) to remove Buildings 74, 202, the Boundary Wall, and the SEFC E Parcels.
- The Navy would execute an MOU to assume the responsibilities of the 2007 Historic Covenant and the transferring of Caretaker Status of Buildings 74, 202, and the Boundary Wall from the GSA to the Navy, which would include minimum maintenance and stabilization standards.

Impacts under NEPA would be considered significant but would be mitigated by adhering to stipulations specified in the PA(s) and MOU(s) executed through consultation pursuant to NHPA Section 106.

3.3.3.5 Alternative 2A Land Acquisition with Construction and Operation of a Navy Museum on the SEFC E Parcels

Under Alternative 2A, the Navy would purchase the development rights from the developer and receive the SEFC E Parcels from the GSA through a federal-to-federal transfer (see Figure 2.3-7). The private development of the SEFC E Parcels and associated effects to historic properties under the No Action Alternative would not occur. No WNY property would transfer to the developer, and conditions in the WNY Southeast Corner would remain similar to current conditions. No in-kind considerations would be provided, such as the potential rehabilitation of Piers 1 and 2.

The effects to historic properties (archaeological and architectural resources) from the development of the SEFC E Parcels under Alternative 2A would be as described for Alternative 1A. There would be no changes to the existing conditions on the WNY Southeast Corner.

NEPA impacts to historic properties would be significant but would be mitigated by adhering to the stipulations contained within the PA(s) and MOU(s) described under Alternative 1A for the SEFC E Parcels.

3.3.3.6 Alternative 2B Land Acquisition with Construction and Operation of Navy Administrative Development on the SEFC E Parcels

The effects to historic properties from the development of the SEFC E Parcels under Alternative 2B would be as described for Alternative 1B. As stated under Alternative 1B, the Navy has determined that there would be the potential for adverse effects on as-yet undiscovered archaeological resources within the SEFC E Parcels and adverse effects on the Washington Navy Yard Annex Historic District, Washington Navy Yard Central Yard NHL, and other nearby historic properties. There would be no changes to the existing conditions on the WNY Southeast Corner.

NEPA impacts to archaeological resources and other historic properties would be significant but would be mitigated by adhering to the stipulations contained within the PA(s) and MOU(s) described under Alternative 1A for the SEFC E Parcels.

3.3.3.7 Alternative 2C Land Acquisition with No Development on SEFC E Parcels

The effects to historic properties under Alternative 2C would be as described for Alternative 1C for the SEFC E Parcels. Only minor ground disturbance would occur with construction of a fence at the SEFC E Parcels. The Navy would assume Caretaker Status of historic properties and would be subject to the 2007 Historic Covenant placed on the SEFC by the GSA through the MOU described for Alternative 1C.

There would be no changes to existing conditions on the WNY Southeast Corner. As a result, NEPA impacts to historic properties would not be significant.

3.3.3.8 Summary of Impacts and Conclusions

Under the No Action Alternative, effects to historic properties (archaeological and architectural) would be as described in the 2004 Final EIS for Development of the Southeast Federal Center (GSA, 2004). As stated in the 2004 EIS, potential adverse effects could occur on known or potential archaeological resources because of soil remediation efforts and site preparation and excavation associated with development of the SEFC E Parcels. In addition, there would be adverse effects to the setting of the Washington Navy Yard Annex Historic District by introduction of visual elements inconsistent with the historic character of the district.

Under Alternatives 1A, 1B, and 1C, development in the WNY Southeast Corner and in the SEFC E Parcels could result in adverse effects to undiscovered archaeological resources, the Washington Navy Yard Central Yard NHL, the Washington Navy Yard Eastern Extension Historic District, the Washington Navy Yard Annex Historic District, and other nearby historic properties (e.g., Anacostia Park, L'Enfant Plan). Under Alternative 1B, adverse effects to historic properties would be similar to but slightly less than those described for Alternative 1A due to different development in the SEFC E Parcels. Under Alternative 1C, there would be no development of the SEFC E Parcels except for construction of a fence; therefore, none of the associated adverse effects from new construction and adaptive repurposing would occur under Alternatives 1A and 1B in the SEFC E Parcels.

Under Alternatives 2A, 2B, and 2C, adverse effects would be the same as Alternatives 1A, 1B, and 1C on the SEFC E Parcels. There would be no development of the WNY Southeast Corner and, therefore, none of the associated adverse effects. Under Alternatives 2A, 2B, or 2C, there would be no developer in-kind considerations that may include rehabilitation of Piers 1 and 2. Alternative 2C would only require construction of a fence on the SEFC E Parcels, and there would be no adverse effects on historic properties.

Any adverse effects on historic properties (archaeological and architectural) would be resolved through consultation and execution of multiple agreements with appropriate agencies under Section 106 of the NHPA. Although the integrity of the Washington Navy Yard Central Yard NHL, the Washington Navy Yard Eastern Extension Historic District, and the Washington Navy Yard Annex Historic District would be diminished, their historic status would not be affected, and they would remain as NRHP-listed and -eligible historic properties. Under NEPA, significant impacts to cultural resources would occur under Alternatives 1A, 1B, 1C, 2A, and 2B but would be mitigated by adhering to stipulations specified in the PA(s) and MOU(s) previously described. No significant impacts would occur under Alternative 2C.

3.4 Land Use/Zoning

This discussion of land use includes current and planned uses and the regulations, policies, or zoning that may control current and proposed land use. The term land use refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. Natural conditions of property can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. There is a wide variety of land use categories resulting from human activity. Descriptive terms often used include residential, commercial, mixed-use, industrial, agricultural, institutional, and recreational. Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent property parcels or areas. Zoning regulations specify the allowable uses for real property and establish development standards (e.g., height, lot coverage, density, etc.) for each land use classification or "zone."

3.4.1 Regulatory Setting

Local comprehensive plans designate the general use and development of land within jurisdictions, while land use classifications are codified in local zoning laws. Zoning ordinances govern how land can and cannot be used and control density, height, and bulk characteristics of property. The District of Columbia Office of Zoning administers the zoning application process for the Zoning Commission and Board of Zoning Adjustment in support of their oversight and adjudication of zoning matters in the District of Columbia. The Zoning Commission is responsible for preparing, adopting, and amending the Zoning Regulations and Zoning Map. The NCPC was established by federal legislation as the central planning agency for the federal government in the National Capital Region; the District of Columbia has joint shared responsibility for creating the *Comprehensive Plan for the National Capital*. The Zoning Act of 1920, as amended, established the authority for zoning and the Zoning Commission for D.C. As per 10 United States Code (U.S.C.) 2864, all major military installations are required to prepare a master plan. UFC 2-100-01, *Installation Master Planning* prescribes DoD minimum requirements for master planning processes and products, which includes preparation of master plans. Installation master plans identify current and future land use, and establish planning standards to address massing, height, and placement of buildings among other design criteria, and are informed by other related plans including antiterrorism plans.

3.4.1.1 Comprehensive Plan for the National Capital

The *Comprehensive Plan for the National Capital,* prepared by the NCPC and the District of Columbia, provides a unified plan for growth and development of the district and is composed of two parts: the Federal Elements and the District Elements. The Federal Elements provide recommendations for federal lands and the federal interest in the National Capital Region, while the District Elements provide guidance for non-federal lands in D.C. The *Comprehensive Plan for the National Capital: Federal Elements* is prepared pursuant to Section 4(a) of the National Capital Planning Act of 1952, as amended. The Federal Workplace Element provides policies for siting and managing federal facilities in a manner that supports a more sustainable federal workplace, encourages the public use of federal buildings, including co-location of federal offices with other cultural institutions and services, and supports development of a variety of housing types near federal installations. The federal government is directed to dispose of excess federal property in a manner that ensures its future use is coordinated with surrounding development patterns and land uses and contributes effectively to existing community development goals. The Visitors and Commemoration Element encourages new museums and memorials in neighborhoods identified in the *Memorials and Museums Master Plan* (2M Plan); the north

shore of the Anacostia River in the WNY is one of the potential sites identified for a future museum or memorial.

The *Comprehensive Plan for the National Capital: District Elements* (2021) comprises citywide, area, and implementation elements. Area elements focus on issues that are unique to parts of D.C. The Future Land Use Map, a component of the Citywide Element, identifies the WNY as federal land use and designates the SEFC E Parcels as High-Density Mixed Use. The *Lower Anacostia Waterfront /Near Southwest Area Element*, which encompasses 3 square miles of land on both sides of the Anacostia River, includes WNY and the surrounding area. This area element identifies the Capitol Riverfront/Navy Yard area as the fastest-growing neighborhood in D.C. Area policies include conserving and enhancing community resources, such as historic and cultural waterfront assets like the WNY. Existing land uses in the immediate vicinity align with the Future Land Use Map (Figure 3.4-1).

3.4.1.2 Washington Navy Yard Installation Master Plan

There are approximately 100 facilities at the WNY, totaling approximately 4.6 million square feet. The *Washington Navy Yard Installation Master Plan* (NAVFAC Washington, 2017a) establishes framework strategies for managing and investing in these facilities and the land to maintain mission readiness and accommodate future growth and expansion. Prepared to be consistent with the policies of the *Comprehensive Plan for the National Capital*, the Master Plan identifies 13 land use areas within the WNY with administrative, open space, and parking as the primary existing land uses. The long term (i.e., future land use) plan identifies the same 13 land use areas but with increases in administrative and base support areas and a decrease in recreation land use. The long-term plan includes a boundary modification to incorporate the parcel associated with Building 74—one of the SEFC E Parcels to improve the overall AT posture of the WNY.

The Master Plan also includes a development parcels strategies plan which identifies areas for redevelopment/infill and renovation/retrofitting to support changes in mission and personnel population, and a proposed relocation of the Navy Museum. In addition, a security enhancement plan is included that acknowledges security concerns based on proximity to adjacent urban development and requires future security enhancements and building modifications to incorporate remediation against identified threats. Parcels in the WNY Southeast Corner being considered under Alternative 1 are shown as areas for both redevelopment/infill and renovation/retrofitting. These parcels are also designated for administrative, commercial, and parking land use long term, providing land use options that could improve the installation's AT posture. Figure 3.4-2 illustrates the future land use designations for WNY.

3.4.1.3 The Yards Master Plan

The original SEFC Master Plan was developed in 2005 by the developer selected to redevelop the federal holdings released by WNY. The redevelopment plan was updated in 2007 when the GSA, D.C. SHPO, and the ACHP entered into a Section 106 PA regarding the transfer by sale and/or ground lease of 42 acres of SEFC for mixed-use development. The NCPC has approved two amendments to the 2007 Revised Master Plan to address changes to aesthetics, land use patterns, construction phasing, and other minor modifications. Under the Revised SEFC Master Plan, the 42-acre site, known as The Yards, will contain over 5 million square feet of mixed-use development at full buildout. To date, 10 buildings, The Yards Park, The Yards Marina, and restoration of the historic wall and sentry tower have been completed. The SEFC E Parcels are designated for residential and office development in Phase 3 of construction. Figure 3.4-3 presents zoning around the WNY.

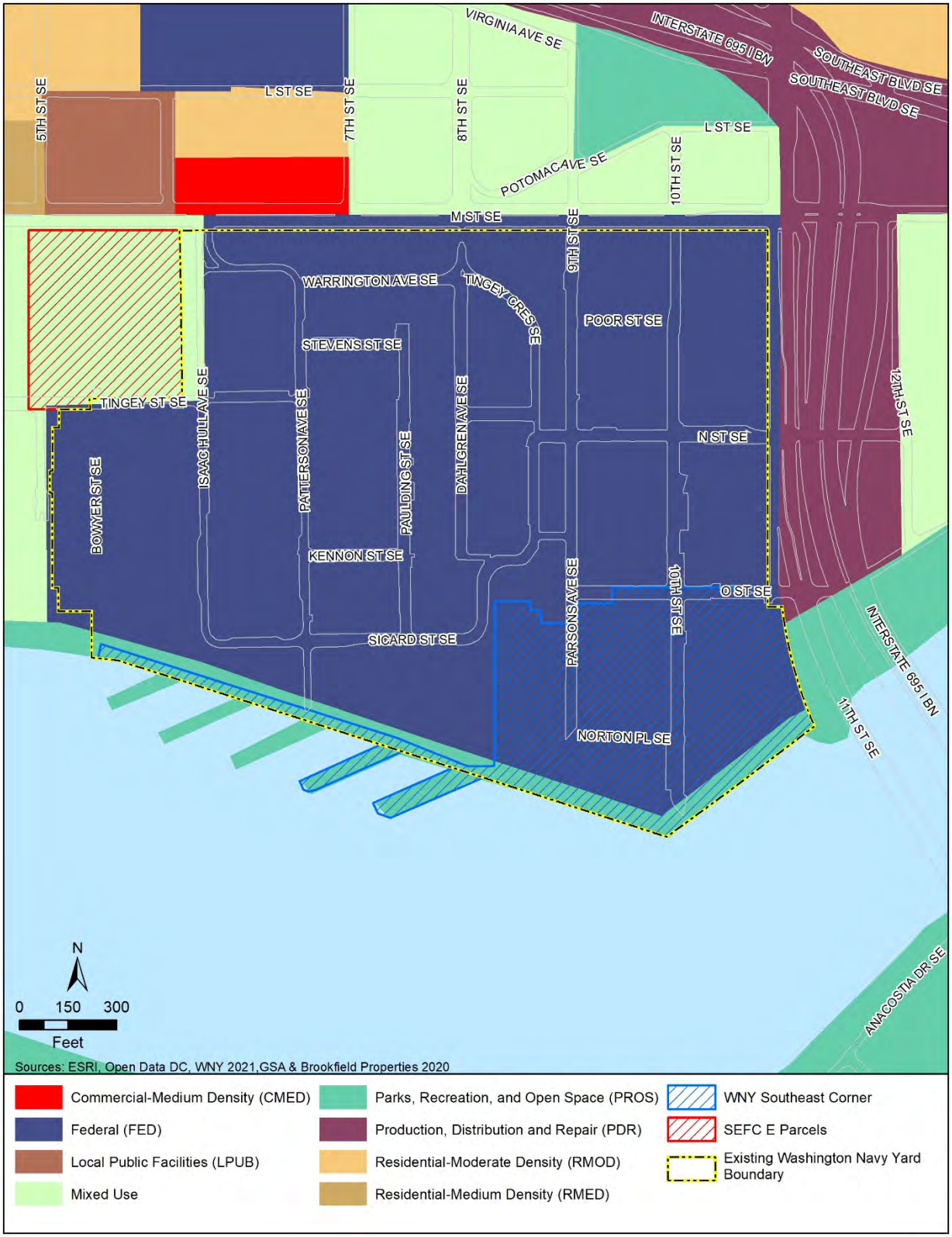


Figure 3.4-1 Future Land Use Map (District Elements)

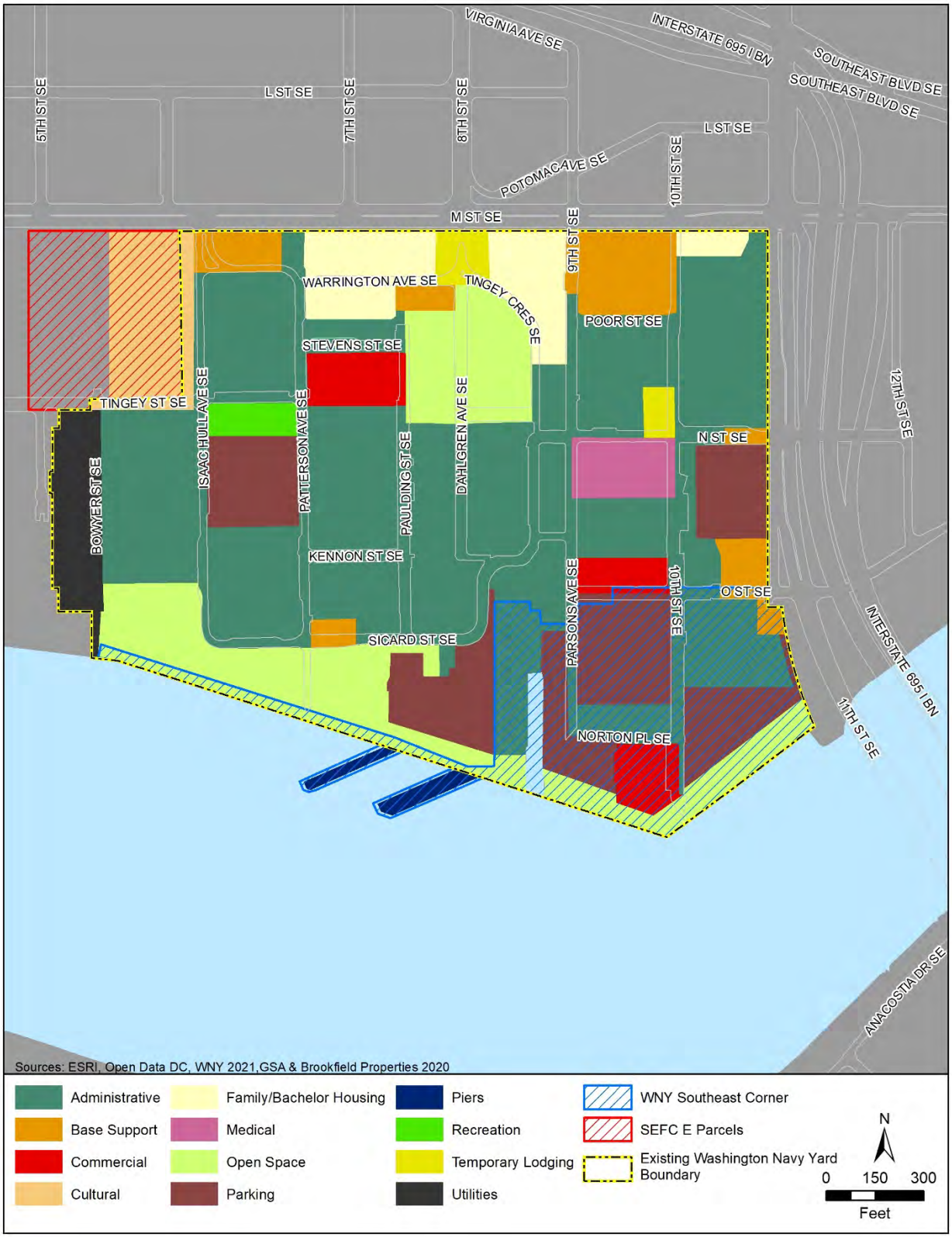


Figure 3.4-2 Future Land Use Designations

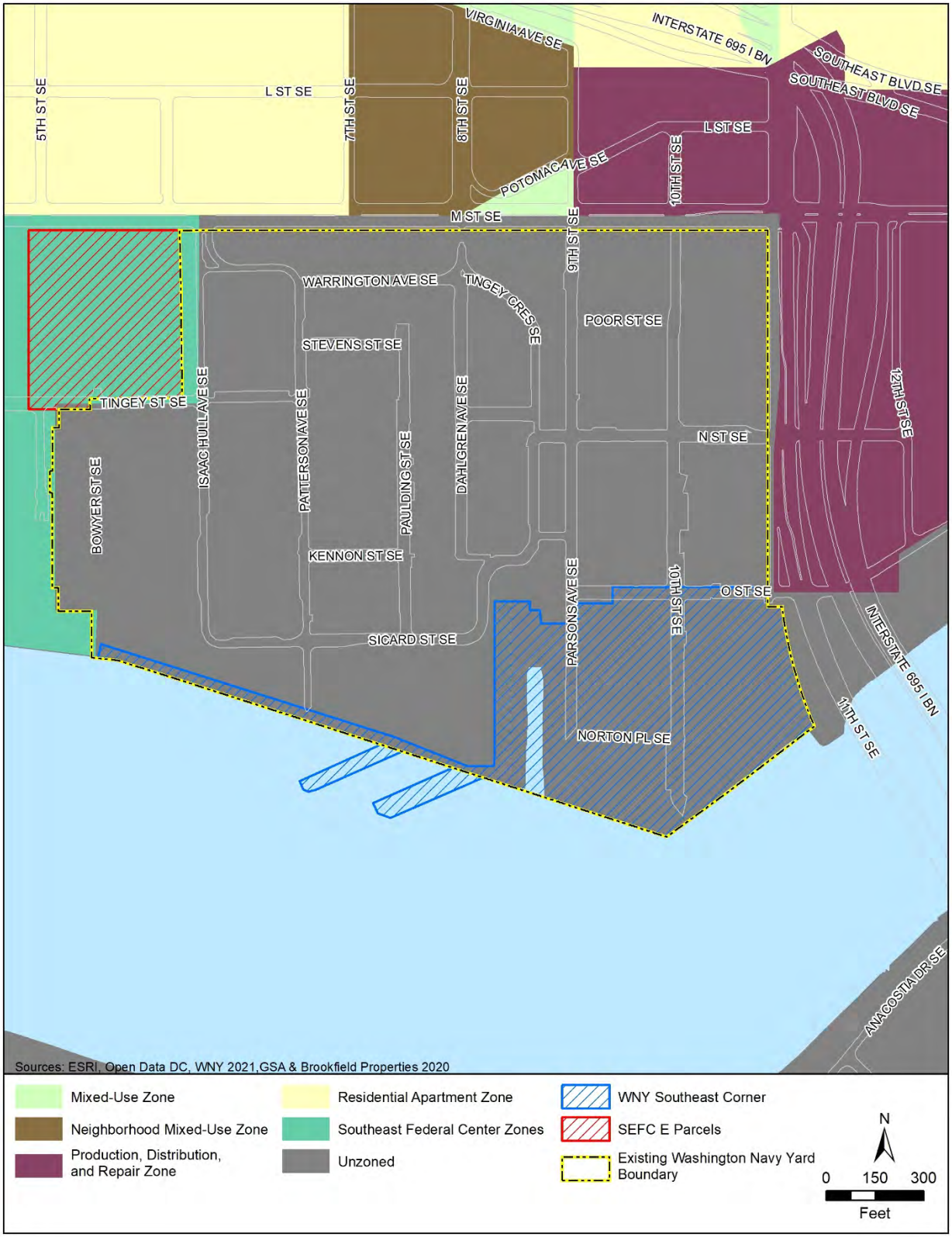


Figure 3.4-3 Zoning Classifications for the Immediate Vicinity around WNY

3.4.1.4 Antiterrorism Standards and Physical Security Program

DoD Instruction 0-2000.16, *DoD Antiterrorism (AT) Program Implementation: DoD AT Standards* prescribes the procedures to implement the requirements for the protection of personnel and assets from acts of terrorism as established by DoD Instruction 2000.12, *Antiterrorism Program*. The DoD Instruction requires all DoD Components to adopt and adhere to common criteria and minimum construction standards to mitigate antiterrorism vulnerabilities and terrorist threats. UFC 4-010-01, Change 1, *DoD Minimum Antiterrorism Standards for Buildings* and UFC 4-020-01, *DoD Security Engineering Facilities Planning Manual* provide the engineering standards for the planning and design of DoD facilities. The intent of these standards is to integrate greater resistance to a terrorist attack into all inhabited buildings.

DoD Instruction 5200.08-R, Change 2, *Physical Security Program* provides security guidance and general procedures to protect personnel, installations, facilities, operations, and related resources from terrorists, criminal activity, and other subversive or illegal activity. The regulation is also intended to "reduce the loss, theft, diversion of, or damage to DoD assets through the use of advanced technologies."

Implementation of the Proposed Action would adjust the installation boundary and could result in the construction of a facility to be owned by the Navy; therefore, the applicability of AT measures and general physical security requirements are evaluated in this EIS. AT standards consist of restrictions for on-site planning, including stand-off distances, building separation, unobstructed space, drive-up and drop-off areas, access roads, and parking; structural design; structural isolation; and electrical and mechanical design.

A boundary adjustment resulting from implementation of the Proposed Action—regardless of subsequent use of the acquired land—would result in an updated risk assessment and threat analysis for WNY.

3.4.2 Affected Environment

The affected environment is the approximately 78-acre WNY and the immediately surrounding Capitol Riverfront/Navy Yard neighborhood, which includes the approximately 6-acre SEFC E Parcels. Factors considered in evaluating land use impacts include compatibility with land use to the surrounding area and consistency with the *Comprehensive Plan for the National Capital*; *WNY Installation Master Plan*; SEFC *Master Plan for The Yards, both original and revised;* and AT requirements. Factors considered in evaluating zoning impacts include compatibility with zoning in the surrounding area and consistency with the District Zoning Regulations and AT requirements.

3.4.2.1 Land Use Compatibility

The 3-square mile area known as the Lower Anacostia Waterfront/Near Southwest Planning Area has been in transition since 2003 when the waterfront was first planned for revitalization. Once an area of industrial, transportation, and government land uses, this planning area continues to transform into a vibrant community supporting workplaces, civic spaces, parks, mixed-use neighborhoods, and restored natural areas. The *SEFC Master Plan for The Yards*—both original and revised —aligns with the *Comprehensive Plan for the National Capital: District Elements* vision for a high-density mixed-use community. The SEFC E Parcels, located in the northeast portion of The Yards, are designated for residential and office uses which are compatible with the mix of existing and planned land uses along the M Street SE corridor between S Capitol Street SW and 11th Street SE.

The *Lower Anacostia Waterfront/Near Southwest Area Element* recognizes WNY as a historic and cultural asset and directs the "respectful integration of future developments" with this and other historic resources. The WNY, designated as federal land, is considered compatible with existing and planned uses in the planning area. The WNY Southeast Corner considered under Alternative 1 would require a comprehensive plan amendment to designate a new land use for the transferred area consistent with the *Comprehensive Plan for the National Capital* and compatible with surrounding land uses including the WNY.

A National Museum of the U.S. Navy is identified in the *Washington Navy Yard Installation Master Plan*. Currently, museum functions are in two separate buildings which are proposed for renovation to meet administrative office space requirements long term. While the Master Plan recommends a cultural land use on the SEFC E Parcels, administrative facilities would be consistent with the overall strategies for long-term investments and operations at the WNY and would be compatible with the existing administrative land uses to the east and south. Acquisition of the SEFC E Parcels is consistent with the Master Plan vision and compatible with the federal land use. AT measures planning criteria were considered in the development of Master Plan recommendations; acquisition of the SEFC E Parcels would improve the overall AT posture of the WNY.

The WNY Southeast Corner is considered underutilized and viable for redevelopment. The WNY Master Plan identifies this area as being outside of the current and planned employment and community hubs on the installation and available for redevelopment/infill and renovation/retrofitting to accommodate new functions, or to undergo more extensive change such as new land use or construction of a new building.

3.4.2.2 Zoning

The approximately 6-acre SEFC E Parcels are located within the SEFC Overlay District: Building 202 is designated SEFC-1B and Building 74 and the surface parking area are designated as SEFC-2. The SEFC Zones provide for the development of an urban, mixed-use waterfront neighborhood. SEFC-1B Zone promotes a mix of high-density residential and medium density commercial development with ground floor retail. SEFC-2 Zone provides for high-density residential development with limited ground floor retail. The maximum permitted building height in both zones, not including the penthouse, is 110 feet. SEFC Zones are to "encourage the design and development of properties in a manner that is sensitive to the adjacent Navy Yard" (D.C. Office of Zoning, 2016). Cultural uses are encouraged in the SEFC Zones.

The WNY is federal land and does not fall under the D.C. zoning regulations. Therefore, the WNY Southeast Corner is not currently zoned but would require new zoning (see Section 3.4.3.2, *Alternative 1A Land Acquisition through Land Exchange with Construction and Operation of Relocated Navy Museum on SEFC E Parcels*). Future private development on the WNY Southeast Corner would be subject to the D.C. zoning process; the leased parcels on the WNY Southeast Corner would not be subject to zoning.

3.4.3 Environmental Consequences

The location and extent of a proposed action needs to be evaluated for its potential effects on a project site and adjacent land uses. Factors affecting a proposed action in terms of land use include its compatibility with on site and adjacent land uses, restrictions on public access to land, or change in an existing land use that is valued by the community. Other considerations are given to proximity to a proposed action, the duration of a proposed activity, and its permanence.

3.4.3.1 No Action Alternative

Under the No Action Alternative, the WNY Southeast Corner would retain its current land uses because no missions or tenants would need to be relocated from the southeast area of the installation. The Navy would not acquire the SEFC E Parcels or reuse the parcels. As a result, there would be no change to land use or zoning at the SEFC E Parcels. The developer would potentially renovate two existing buildings and construct two new buildings at a height of approximately 110 feet on the SEFC E Parcels. This planned, private development at the SEFC E Parcels would be in accordance with *The Yards Master Plan* and would not result in changes to land use or zoning. However, this private development would have potentially significant land use impacts on the WNY mission and the safety of personnel, facilities, and infrastructure; overall installation AT posture would be compromised because mission-critical activities in the northwest area of WNY would be vulnerable to visual surveillance and acoustic and electronic eavesdropping.

3.4.3.2 Alternative 1A Land Acquisition through Land Exchange with Construction and Operation of Relocated Navy Museum on SEFC E Parcels (Preferred Alternative)

Land use and zoning impacts from land acquisition through land exchange under Alternative 1A are discussed below, followed by impacts from construction and operation of a relocated Navy Museum on the SEFC E Parcels.

Impacts from Land Acquisition through Land Exchange

The following addresses land use and zoning impacts from land acquisition through land exchange, as well as private development and in-kind considerations on the WNY Southeast Corner.

Under Alternative 1A, encroachment concerns from private development on the SEFC E Parcels would be eliminated. The planned buildout of The Yards would be reduced and the *SEFC Master Plan for The Yards* would be amended. If acquired by the Navy, the SEFC E Parcels would no longer be subject to the SEFC Overlay District regulations. Acquisition of the SEFC E Parcels is consistent with the *Washington Navy Yard Installation Master Plan* vision and compatible with the federal land use. Under this alternative, the SEFC E Parcels would be designated as federal land on the existing and future land use maps for D.C.; there would be no zoning classification associated with the land. Residential, commercial, and office development could, however, be developed on the Navy transferred and leased property provided it is compatible with the *Comprehensive Plan for the National Capital*, *Lower Anacostia Waterfront/Near Southwest Area Element, Washington Navy Yard Installation Master Plan,* and AT posture.

Implementation of Alternative 1A would require a comprehensive plan amendment and zoning changes for the WNY Southeast Corner parcels transferred to private ownership to be developed consistent with a new land use designation and the mix of uses and densities in the area. Leased land would not be subject to a change in land use or zoning regulations. The *Comprehensive Plan for the National Capital: District Elements* recognize the WNY as a historic and cultural asset and requires future developments around the installation to be integrated into the area framework in a manner that respects the installation. Buildout under this alternative would be compatible with the *Comprehensive Plan for the National Capita*l, *Lower Anacostia Waterfront/Near Southwest Area Element,* and *Washington Navy Yard Installation Master Plan*.

Alternative 1A is consistent with the *Washington Navy Yard Installation Master Plan* as it would result in the redevelopment and renovation of underutilized facilities to accommodate new functions and new

land use that would be compatible with the installation's existing and future land use. Development on the WNY Southeast Corner of new mixed-use (residential, office, commercial, retail) buildings on the transferred property and new commercial/retail on the leased property would shift high-density development from the SEFC E Parcels to an area of the installation that is underutilized. Potential land use in the WNY Southeast Corner would be sufficient distance from the installation's most sensitive operations and therefore would not degrade the overall AT posture of the WNY. While these new land uses would be compatible with the *Washington Navy Yard Installation Master Plan*, development would need to adhere to AT measures planning and design criteria (e.g., stand-off distances) to avoid negatively impacting the overall AT posture of the WNY. These private development activities are consistent with ongoing efforts to revitalize lands along the Anacostia River and support the Lower Anacostia Waterfront/Near Southwest Area Element long-term vision for a waterfront community. The developer would consider public access to the Anacostia Riverwalk Trail during its development on the WNY Southeast Corner and would coordinate with local agencies during construction activities. New private development and in-kind considerations planned under this alternative will continue the area's transformation from an industrial, transportation, and government area into new mixed-use neighborhoods, workplaces, civic spaces, parks, and restored natural areas.

Implementation of Alternative 1A is compatible with existing and future land uses within the ROI but would result in changes to planned land development and zoning. Alternative 1A would reduce the planned buildout of The Yards, address encroachment concerns, and shift density to the WNY Southeast Corner. The overall AT posture for the WNY would be improved by the Navy acquisition of the SEFC E Parcels. Private reuse of the WNY Southeast Corner would be compatible with existing and planned land uses but would require zoning changes. Planned private development adjacent to the WNY could affect WNY perimeter security, potentially requiring an updated installation risk assessment and threat analysis.

Impacts from Reuse of SEFC E Parcels with Construction and Operation of Relocated Navy Museum

Under Alternative 1A, the Navy Museum Development Foundation would construct and operate a new National Museum of the United States Navy. The *Memorials and Museums Master Plan* identifies two candidate sites in the affected environment for future cultural resources: the north shore of the Anacostia River in the WNY and the north side of Martin Luther King Memorial Bridge along 11th Street east of WNY. The *Washington Navy Yard Installation Master Plan* identifies the requirement for a Navy Museum and recommends Building 74 parcel—part of the SEFC E Parcels—to meet this need. The *Lower Anacostia Waterfront/Near Southwest Area Element* allows and encourages cultural resources in the planning area. Cultural resources land use would be compatible with existing and planned land uses.

Overall, implementation of Alternative 1A would not result in significant land use or zoning impacts from land acquisition through land exchange and reuse of the SEFC E Parcels with construction and operation of a relocated Navy Museum. The high-intensity mixed-use development that is planned for the SEFC E Parcels would shift to the WNY Southeast Corner. Private development on the WNY Southeast Corner would require zoning changes. Activities under Alternative 1A would be compatible with existing and planned land uses through establishment of a low-density cultural resource that would be designed to address the urban corridor and pedestrian activity, meet AT criteria, and improve the installation's overall security posture.

3.4.3.3 Alternative 1B Land Acquisition through Land Exchange with Construction and Operation of Navy Administrative Development on SEFC E Parcels

Land use and zoning impacts from land acquisition through land exchange under Alternative 1B are discussed below, followed by impacts from construction and operation of Navy administrative development on the SEFC E Parcels.

Impacts from Land Acquisition through Land Exchange

Under Alternative 1B, land use and zoning impacts from land acquisition through land exchange, which involves private development and in-kind considerations on the WNY Southeast Corner, are the same as those described for Alternative 1A.

Impacts from Reuse of SEFC E Parcels with Construction and Operation of Navy Administrative Development

Under Alternative 1B, the Navy would renovate Buildings 202 and 74 for administrative offices and construct a new administrative office building. Navy administrative land use is compatible with the overall planning framework for the WNY and would support consolidation and relocation plans for tenants and missions across the installation. Additionally new administrative facilities offer an opportunity to reduce leased spaces across the National Capital Region which is consistent with broader Navy initiatives. New or retrofitted administrative buildings, consistent with the character of the WNY, would be compatible with the WNY mission. Office space on the SEFC E Parcels would be compatible with existing and planned land uses along the M Street SE corridor, although the mass, height, and density would be scaled down from adjacent uses to the west and south to align with the planning standards established in the *Washington Navy Yard Installation Master Plan*. Architectural guidelines require new construction/renovations within the installation to blend with the historic context of WNY, thereby creating a unified appearance between new and existing buildings. Existing buildings within WNY are less massive, lower in height, and lower density than existing and planned land uses along the M Street SE corridor. New land uses under Alternative 1B would be compatible with existing and planned land uses inside and outside the fence line. Planning and design of the new facilities would be done in conformance with all applicable AT regulations, improving the installation's overall AT posture. AT standards would be incorporated into the design of all Navy facilities on the SEFC E Parcels.

Overall, Alternative 1B would not result in significant adverse land use or zoning impacts from land acquisition through land exchange and reuse of the SEFC E Parcels with construction and operation of Navy administrative development. The high-intensity mixed-use development that is planned for the SEFC E Parcels would shift to the WNY Southeast Corner. Private development on the WNY Southeast Corner would require zoning changes. Activities under Alternative 1B would be compatible with existing and planned land uses, as well as the overall planning framework for the WNY; meet AT criteria; and improve the installation's overall security posture.

3.4.3.4 Alternative 1C Land Acquisition through Land Exchange with No Development on SEFC E Parcels

Land use and zoning impacts from land acquisition through land exchange under Alternative 1C are discussed below, followed by impacts from not developing the SEFC E Parcels.

Impacts from Land Acquisition through Land Exchange

Under Alternative 1C, land use and zoning impacts from the land acquisition through land exchange, which involves private development and in-kind considerations on the WNY Southeast Corner, are the same as those described for Alternative 1A.

Impacts from Reuse of SEFC E Parcels with No Development on SEFC E Parcels

Under Alternative 1C, the SEFC E Parcels would be acquired by the Navy, but existing conditions on the parcels would remain the same. The Navy would incorporate the land within the WNY fence line. Other than utility connections for maintenance of existing buildings, the Navy would leave the parcels in their current state with no foreseeable development planned. Alternative 1C would be incompatible with existing and planned land uses along the M Street SE corridor. Not making any changes to the SEFC E Parcels would not be consistent with the *Comprehensive Plan for the National Capital* as it would retain low-density development or vacant lots along a corridor planned for higher-density mixed use and high-volume pedestrian activity. Alternative 1C is not compatible with the *Washington Navy Yard Installation Master Plan* because it is not consistent with other efforts on the WNY long-term plan including consolidations, relocations, and renovation of buildings.

Overall, Alternative 1C would not result in significant zoning impacts from land acquisition through land exchange. Not developing the SEFC E Parcels would be inconsistent with the *Comprehensive Plan for the National Capital,* the *Washington Navy Yard Installation Master Plan* and other existing and planned uses along the M Street SE corridor. However, the land use impacts from not developing the SEFC E Parcels and having private residential/commercial development shifted from the SEFC E Parcels to the WNY Southeast Corner would not be considered significant.

3.4.3.5 Alternative 2A Direct Land Acquisition with Construction and Operation of Relocated Navy Museum on SEFC E Parcels

Impacts from Direct Land Acquisition

Under Alternative 2A, encroachment concerns from private development on the SEFC E Parcels would be eliminated. The overall AT posture for the WNY would be improved by the Navy acquisition of the SEFC E Parcels. The SEFC E Parcels would be designated as federal land on the existing and future land use maps for D.C.; there would be no zoning classification associated with the land. Acquisition of the SEFC E Parcels is consistent with the *Washington Navy Yard Installation Master Plan* vision and compatible with the federal land use.

The planned buildout of The Yards would be reduced as would the overall amount of developable land surrounding the WNY (see *Socioeconomics* Section 3.9.3.5 *Alternative 2A Direct Land Acquisition with Construction and Operation of Relocation Navy Museum on SEFC E Parcels*). This reduction in buildout would decrease overall capacity for future mixed-use development in the Lower Anacostia Waterfront/Near Southwest Area and is not consistent with the *Comprehensive Plan for the National Capital*.

Impacts from Reuse of SEFC E Parcels with Construction and Operation of Relocated Navy Museum

Impacts to land use and zoning from construction and operation of a relocated Navy Museum under Alternative 2A would be the same as those land use and zoning impacts from the relocated Navy Museum described for Alternative 1A.

Overall, Alternative 2A would not result in significant land use or zoning impacts from direct land acquisition and reuse of the SEFC E Parcels with construction and operation of a relocated Navy Museum.

3.4.3.6 Alternative 2B Direct Land Acquisition with Construction and Operation of Navy Administrative Development on SEFC E Parcels

Impacts from Direct Land Acquisition

Under Alternative 2B, land use and zoning impacts from direct land acquisition are the same as those described for Alternative 2A.

Impacts from Reuse of SEFC E Parcels with Construction and Operation of Navy Administrative Development

Impacts to land use and zoning from construction and operation of Navy administrative development under Alternative 2B would be the same as those described for Alternative 1B.

Overall, Alternative 2B would not result in significant land use or zoning impacts from direct land acquisition and reuse of the SEFC E Parcels with construction and operation of Navy administrative development.

3.4.3.7 Alternative 2C Direct Land Acquisition with No Development on SEFC E Parcels

Impacts from Direct Land Acquisition

Under Alternative 2C, land use and zoning impacts from direct land acquisition are the same as those described for Alternative 2A.

Impacts from Reuse of SEFC E Parcels with No Development on SEFC E Parcels

Impacts to land use and zoning from the Navy acquiring the SEFC E Parcels and leaving the parcels in their current state would be similar to those described for Alternative 1C. Overall, Alternative 2C would not result in significant zoning impacts from direct land acquisition. Not developing the SEFC E Parcels would be inconsistent with the *Comprehensive Plan for the National Capital*, the *Washington Navy Yard Installation Master Plan* and other existing and planned uses along the M Street SE corridor. However, the land use impacts from not developing the SEFC E Parcels and having reduced residential/commercial development in comparison to the No Action Alternative would not be considered significant.

3.4.4 Summary of Impacts and Conclusions

Based on the analysis of potential impacts presented above, the No Action Alternative would not result in changes to land use or zoning from the planned, private development on the on the SEFC E Parcels, which would be in accordance with *The Yards Master Plan*. However, private development on the SEFC E Parcels under No Action Alternative would have potentially significant land use impacts on the WNY mission and the safety of personnel, facilities, and infrastructure; the overall installation AT posture would be compromised.

There would be no significant impacts to land use or zoning from implementation of the action alternatives. Alternatives 1A, 1B, 2A, and 2B would be most compatible with WNY AT posture, the overall planning framework for the WNY, and with existing and planned land uses along the M Street SE corridor. While Alternatives 1C and 2C would be compatible with WNY AT posture, they are inconsistent

with the *Comprehensive Plan for the National Capital* and the *Washington Navy Yard Installation Master Plan*, and incompatible with existing and planned uses along the M Street SE corridor.

3.5 Hazardous Materials and Wastes

This section discusses hazardous materials, hazardous waste, toxic substances, and contaminated sites. Solid wastes that are not hazardous wastes are addressed in Section 3.11, *Utilities and Infrastructure*. The study area for hazardous materials and wastes consists of the SEFC E Parcels, the adjacent Anacostia River sediments, and disposal and/or recycling facilities that receive construction, demolition, and operational wastes from the project alternatives.

3.5.1 Regulatory Setting

Hazardous materials are defined by USDOT in 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 USDOT regulations.

Hazardous wastes are defined by RCRA in 40 CFR part 261, as amended by the Hazardous and Solid Waste Amendments, as: "a solid waste, which because of quantity, concentration, or physical, chemical, or infectious characteristics (A) causes or increases mortality serious irreversible, or incapacitating reversible, illness; or (B) poses a substantial present or potential hazard to human health or the environment when improperly managed" (AHMP, 2013). 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 (USEPA, 2022). Four types of waste are currently covered under the universal waste regulations: hazardous waste batteries, hazardous waste pesticides that are either recalled or collected in waste pesticide collection programs, mercury-containing equipment, and 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 (15 U.S.C. et seq. [1976] (USEPA, 2021)). Asbestos is also regulated by USEPA under the Clean Air Act (CAA), and 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, and formerly used defense sites) (DoD, 2018). The Installation Restoration Program and the Military Munitions Response Program (MRP) are components of the DERP. The Installation Restoration Program requires each DoD installation to identify, investigate, and clean up hazardous waste disposal or release sites. The Military MRP addresses nonoperational rangelands that are suspected or known to contain unexploded ordnance, discarded military munitions, or munitions constituent contamination. The Environmental Restoration Program is the Navy's initiative to address DERP.

3.5.2 Affected Environment

The study area for this resource includes the WNY Southeast Corner that is included in the Proposed Action (area proposed for transfer and lease) and the SEFC E Parcels.

3.5.2.1 Hazardous Materials and Wastes

WNY Southeast Corner

The National Priorities List is the list of sites of national priority among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories (USEPA, 2022b).

The WNY is a large-quantity generator of hazardous waste. It operates under USEPA ID number DC9170024310. The Navy has implemented a Hazardous Material Control and Management Program and a Hazardous Waste Minimization Program for all current activities at the WNY. These programs are governed by the Office of the Chief of Naval Operations instructions and installation-specific instructions issued by each Base Commander. The Navy continuously monitors its operations to find ways to minimize the use of hazardous materials and reduce the generation of hazardous wastes.

The NSAW Hazardous Waste Management Plan (NAVFAC Washington, 2018) provides detailed guidance pertaining to the generation, identification, collection, storage, and disposal of hazardous waste at installations assigned to NSAW including the WNY.

Because the WNY stores quantities of petroleum, oils, and lubricants (POL), a Spill Prevention, Control and Countermeasure Plan has been prepared for the WNY. This plan addresses storage and containment of POL, spill response equipment and cleanup measures for spills, reporting procedures, inspections and recordkeeping, security, and personnel training.

Hazardous materials in use and stored at the WNY include POL, laboratory chemicals, paints, flammables, dental amalgam, and other common materials necessary for the maintenance and upkeep of a large federal facility and operation of dental and medical clinics. The WNY does not store hazardous materials in large quantities and does not store quantities (e.g., over 500 pounds for extremely hazardous substances or over 10,000 pounds for most other hazardous chemicals) that would require reporting to the local emergency planning committee per the Emergency Planning and Community Right-to-Know Act. In accordance with large-quantity generator regulations, the WNY operates a 90-day Hazardous Waste Storage Site to temporarily store hazardous wastes prior to off-site transfer for disposal or treatment. The 90-day storage site is located in the parking lot of Building 166, which is located in the WNY Southeast Corner.

Hazardous wastes generated and stored (awaiting proper disposal) at the WNY result from operations described above and include mercury-containing equipment (e.g., old thermostats/switches), paints and paint-related materials, spill cleanup media, various chemicals and cleaners from facility maintenance operations, lead abatement waste, laboratory and preservation chemicals, acids, caustics, solvents, dental amalgam waste, waste mercury filters, and methacrylate (NAVFAC Washington, 2018). Universal wastes generated at the WNY include fluorescent lamps and batteries (alkaline, lead acid, lithium, mercury, and nickel cadmium).

Historically, the quantity of hazardous waste generated at the WNY can vary considerably from year-to-year, driven by the episodic production of waste sodium hydroxide cleaning solution. For example, annual waste generation from 2008 to 2018 ranged from 0.6 tons (2017) to 3.2 and 3.3 tons (2015 and 2019, respectively). Records indicate that the single greatest waste stream at WNY for the above years consists of waste sodium hydroxide solution, which accounted for 63 and 71 percent of total hazardous wastes by weight generated for 2015 and 2019, respectively (USEPA, 2022a).

Building 68, Naval Marine Operations (Boat House, Chief of Naval Operations [CNO] Barge) is located in the WNY Southeast Corner and is the only building in this area that generates hazardous wastes other than those related to building operations and maintenance. It generates POL and related waste from

seasonal maintenance of the CNO Barge: i.e., oily waters, fuels, and oily debris (NAVFAC Washington, 2018).

SEFC E Parcels

The SEFC E Parcels tenants do not generate hazardous waste or do not generate hazardous wastes in amounts that require registration and reporting with/to the USEPA.

3.5.2.2 Special Hazards (ACM, LBP, PCB)

WNY Southeast Corner and SEFC E Parcels

Due to the age of the buildings (with the exceptions of Buildings 405 and 386), ACM, LBP, and PCBs were likely used in construction and/or renovations/repairs of the buildings. ACM includes materials such as thermal system insulation, mastics, floor tiles, wall board, shingles, and asphalt roofing material. Building materials that may contain PCBs include fluorescent light ballasts manufactured before 1979 and caulking, elastic sealants, paints, window glazing, ceiling tiles, and floor finishes that were used in construction and renovation from 1950 to 1979 (USEPA, 2015a). Lead as an additive in paint was banned in 1978.

3.5.2.3 Defense Environmental Restoration Program

WNY Southeast Corner

In 1998, the USEPA added the WNY to the National Priorities List. In 1999, the Navy, USEPA, and Department of Energy and Environment signed an FFA, which defined USEPA's and DOEE's oversight roles in the Navy's management and cleanup of sites. Seventeen Environmental Restoration (ER) sites and one Operational Unit (OU) were identified in the FFA. An additional OU and four additional sites were later added to the ER Program. Seven Site Screening Areas (SSAs) and five Areas of Concern were identified in the original FFA. Seven more SSAs and two more Areas of Concern were identified later. One site has been identified by the Navy's MRP on the WNY.

Of these, three sites, two OUs, two SSAs, and one MRP site are located in or overlap the WNY Southeast Corner. The program status of these sites is summarized in Table 3.5-1. Sites that are active or have land use controls (LUCs) are briefly described below and are depicted on Figure 3.5-1.

LUCs and its provisions are binding on all current and future property owners and users. They are subject to annual inspections and reporting to ensure ongoing compliance and are reviewed every five years. A LUC remains in effect until it is formally removed or modified by the regulatory agency. The regulatory agency reviews applications and information supporting a LUC termination or variance. For example, if a new owner completes additional cleanup to remove or otherwise remediate contamination, the agency could go through the process requesting termination of the LUC.

Table 3.5-1 ER Site Program Status

Site	*Status*	*Decision Document*	*Description*	*Path Forward/Coexisting Conditions*
Washington Navy Yard				
11/Former Incinerators	No further action	ROD (2015)	The ROD only considers soil; groundwater is being evaluated separately (OU 1).	Soil risks that are due to the fill material rather than Site 11 activities are evaluated under SSA 12.
8/Paint and Oil Storage	No further action	ROD (2017)	There is no unacceptable risk to human health or ecological receptors in soil or groundwater under current or potential future site uses.	Site 8 falls completely within the boundary of SSA 12.
21/Ship Repair Department	Investigation ongoing	None	Currently in remedial investigation phase for soil, groundwater, and indoor air.	Remedial Investigation/ Feasibility Study phase during EIS preparation.
OU 1/Basewide Groundwater	No action	ROD (2019)	There is no unacceptable risk to human health or ecological receptors in groundwater under current or potential future site uses.	OU 1 does not include three separate and discrete groundwater sources/plumes, two of which are within the WNY Southeast Corner (Sites 8 and 21).
OU 2/Nearshore Sediment	Investigation ongoing	None	Sediment contamination in some areas of OU 2 presents an unacceptable ecological risk due to PAHs, PCBs, gamma-chlordane, and several metals. These areas include the western end of OU 2 in the vicinity of former Pier 5 and WNY Outfalls 8 and 9.	Feasibility Study phase/Proposed Plan phase during EIS preparation.
SSA 12/Basewide Fill	Response complete (EA 19 and the WNY Eastern Extension EA - LUCs and long-term management), No Action (EA 21)	ROD (2017)	There are no unacceptable risks to human receptors at any of the EAs under current land use conditions.	For EA 1, action would be required when redeveloped for unrestricted use and unlimited exposure. For EA 19 and the WNY Eastern Extension EA, no unacceptable risks for future receptors were identified. No remedial action necessary at EA 21.

Table 3.5-1 ER Site Program Status

Site	*Status*	*Decision Document*	*Description*	*Path Forward/Coexisting Conditions*
SSA 7/ Former Leaking PCB Transformer Locations	No further action	No Further Action Letter (2006) for Buildings 76, 169, 184, 196, 200, and 218	A No Further Action letter was signed in 2006 for Buildings 76, 154, 166, 169, 184, 196, 200, and 218 because they have been remediated as part of housekeeping measures or because PCB levels were below Toxic Substances Control Act action levels (Buildings 154 and 166).	None.
MRP Site 1 – Experimental Battery	No action	None	Site Investigation completed in 2011 and concluded risks are low and within an acceptable range.	None.
Southeast Federal Center				
SEFC E Parcels	Final decision	Final Decision (2015)	The Final Remedy included in the Final Decision is unchanged from the remedy proposed in the Remaining Parcels Statement of Basis (2015).	The Final Remedy for contaminated soils is the excavation and off-site disposal of contaminated soils. The Final Remedy for groundwater is the compliance with and maintenance of a groundwater use restriction prohibiting potable uses of on-site groundwater through an enforceable institutional control (e.g., a covenant or a deed restriction).

Notes: EA = Exposure Area; EIS = Environmental Impact Statement; ER = Environmental Restoration; LUC = Land Use Control; MRP = Munitions Response Program; OU = Operable Unit; PAH = polycyclic aromatic hydrocarbon; PCB = polychlorinated biphenyl; ROD = Record of Decision; SSA = Site Screening Area; SEFC = Southeast Federal Center; WNY = Washington Navy Yard.

Sources: (NAVFAC Washington, 2017b; NAVFAC Washington, 2017c; NAVFAC Washington, 2019b; NAVFAC Washington, 2021a; USEPA, 2015b).

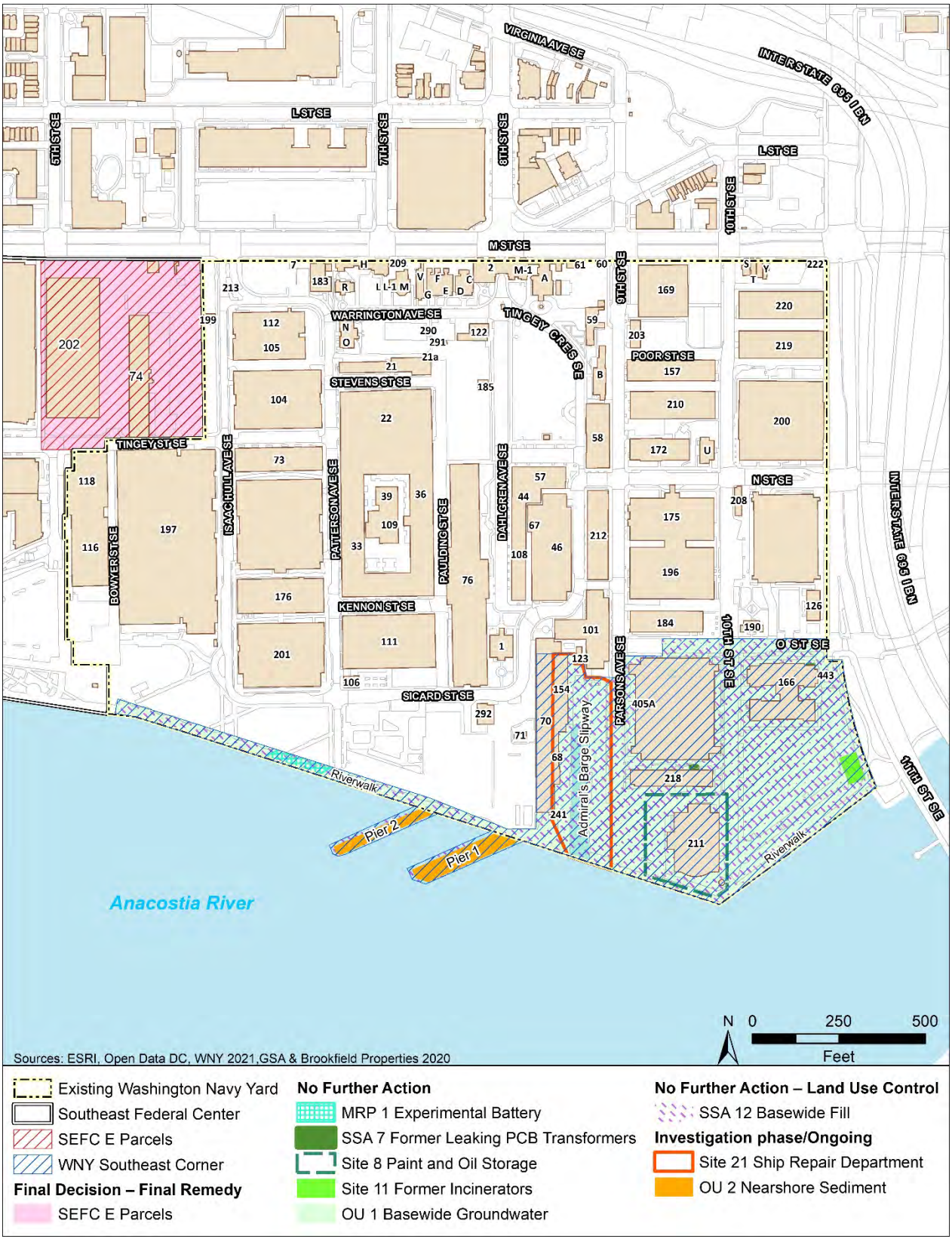


Figure 3.5-1 Environmental Restoration Sites

Site 21 – The Ship Repair Department consists of existing and previously existing Buildings 68, 123, 130, 133, 154, 224, and 246; Wharf No. 1; the Marine Railway; and Slip No. 1. The department overhauled and repaired small craft such as tugboats, barges, yachts, tenders, pile drivers, lighters, floats, derricks, and patrol vessels. The Ship Repair Department generally operated from the late 1890s to approximately 1980 (NAVFAC Washington, 2021a). Contaminants of interest at this site are metals, semi-volatile organic compounds (SVOCs), and volatile organic compounds (VOCs). Investigations at this site are ongoing.

Operable Unit 1 Basewide Groundwater (Shallow Aquifer) – The potential presence of the emerging contaminants per- and polyfluoroalkyl substances (PFAS) in the groundwater at the WNY is being investigated. Health effects and regulatory requirements for these compounds have only recently been evaluated by the USEPA, and appropriate investigation techniques are still being developed. The Navy is conducting a facility-wide PFAS assessment, separate from OU 1, to look specifically for the past use of products containing PFAS and possible releases of these substances to the groundwater and soil at WNY (NAVFAC Washington, 2021a).

Operable Unit 2 – Nearshore Sediment – The nearshore sediment consists of sediment from the bulkhead to the end of the WNY Piers. Additional investigations outside the boundary of the WNY Piers are being performed to determine whether the contamination contributed by the Navy extends outside the boundary. This nearshore sediment exceeds USEPA criteria for several SVOCs, PCBs, and metals (NAVFAC Washington, 2021a). Investigations at this site are ongoing.

SSA 12 – Fill Material Operable Unit – SSA 12, which was elevated to ER site status as an OU, consists of the fill material that was placed at the WNY between 1800 and 1942. The fill was used to reclaim mudflats and shallow areas of the Anacostia River as well as to raise the ground surface of original land in other portions of WNY. To assist in characterizing the fill material, the area requiring investigation was divided into 32 exposure areas (EAs). Based on the results of the Phase 1 investigation, further investigations at 15 of the original 32 EAs were conducted. Because of the similarities among seven of the EAs included in the Phase 2 investigation, these EAs were combined and evaluated as one comprehensive "Eastern Extension" EA. EAs 1, 19, 21, and the Washington Navy Yard Eastern Extension EA are located within or intersect with the WNY Southeast Corner.

Based on the results of the Phase 2 evaluation, these four EAs were carried forward for further evaluation in a Remedial Investigation/Feasibility Study. Contaminants of interest at this site were polycyclic aromatic hydrocarbons (PAHs). A focused removal action of contaminated soil was conducted at this site in 2016. A 2017 ROD determined that no action was appropriate for EA 21 and that LUCs and long-term management were appropriate for EAs 1, 19, and the Washington Navy Yard Eastern Extension (NAVFAC Washington, 2017c). LUCs provide long-term management policies that:

- Restrict activities that could result in human contact with subsurface fill, such as soil excavation within the boundaries of the sites
- Prevent future redevelopment of the property that changes land use to one that is not compatible with residual site risks (e.g., restrict redevelopment to commercial/industrial land use)
- Prevent intrusive activities (such as demolishing a building)

These restrictions will remain in place unless and/or until:

- Findings of USEPA upon review of a recently submitted risk assessment

- Regulatory agencies review and approve additional site investigation and/or cleanup activities in these areas specific to the new land use or redevelopment being considered, as well as appropriate management of excavated fill
- The Anacostia Riverwalk at EA 19 and/or Buildings 166, 211, 218, 405, and/or 123 at the Washington Navy Yard Eastern Extension EA, or portions thereof, are removed, additional action is taken to fully delineate the extent of contamination in the fill, and the fill is cleaned up to the risk levels that allow for unlimited use and unrestricted exposure (NAVFAC Washington, 2017c)

Based on a Human Health Risk Assessment Update for SSA12 in 2022 (ch2m for NAVFAC Washington), no unacceptable risks were identified for any of the future receptors for EA 19 or the Washington Navy Yard Eastern Extension EA. Potential unacceptable noncarcinogenic hazards and carcinogenic risks were identified if future residential receptors are exposed to EA 1 vadose zone fill. The unacceptable noncarcinogenic hazard is associated with benzo(a)pyrene, and while the unacceptable carcinogenic risk is primary associated with benzo(a)pyrene, additional carcinogenic PAHs (benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene) also contribute to the unacceptable carcinogenic risk.

SEFC E Parcels

GSA conducted numerous environmental investigations and remediation actions under three federal mandates:

- 1998 U.S. Department of Justice Consent Decree to GSA and the U.S. Department of the Navy ordered cleanup at the SEFC and WNY
- 1999 USEPA Resource Conservation and Recovery Act 3013 Consent Order issued to GSA SEFC was divided into 15 parcels for redevelopment. Six parcels were investigated, cleaned up, and conveyed to buyers or lessors (The Yards)
- 2014 USEPA Consent Order Section 7003. USEPA ordered GSA to streamline cleanup process for the nine remaining parcels, including SEFC E Parcels

Soil is the medium most impacted by historical Navy use of the property. Contaminants found in soil included petroleum hydrocarbons, PAHs, PCBs, and metals such as lead, arsenic, and chromium. Metals have been detected in the groundwater at the SEFC. In shallow groundwater, seven metals were detected above screening levels including arsenic, barium, cadmium, chromium, mercury, selenium, and thallium. The majority of these exceedances, except for arsenic and barium, are not related to past Navy use but rather reflect the natural mineral content of the shallow groundwater. Only barium was above screening levels in the deeper aquifer (USEPA, 2015b).

The primary risks posed to human health and the environment from soil contaminants at the remaining parcels are related to direct contact to contaminated soil by future residents, workers, and construction and utility workers (USEPA, 2015b).

The Final Remedy for SEFC E Parcels consists of excavation and off-site disposal of contaminated soil and compliance with and maintenance of an enforceable institutional control, such as a covenant or a deed restriction on the land, which prohibits potable use of groundwater (USEPA, 2015b).

3.5.3 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 the WNY and the SEFC E Parcels.

3.5.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. The Navy would not acquire the SEFC E Parcels or redevelop the parcels. No Navy relocations as a result of a land exchange would occur on the WNY. The No Action Alternative assumes the private developer would proceed with development of the SEFC E Parcels. As a result, potential impacts are summarized below.

WNY Southeast Corner – Under the No Action Alternative, the use, storage, and disposal of hazardous materials, and generation and disposal of hazardous wastes, associated with ongoing and future facility maintenance activities at the WNY would continue to be managed in accordance with existing Navy plans and applicable state and federal regulations. Ongoing remediation and monitoring activities related to the management of active ER sites would continue. As such, implementation of the No Action Alternative would not affect existing risks associated with potential contaminant releases to the environment or to human health from contaminant exposures. Therefore, implementing the No Action Alternative would not result in significant impacts related to hazardous materials and wastes or contaminated sites.

SEFC E Parcels – As specified in the GSA Final EIS (GSA, 2004), the private developer would be required to remove contaminated soil during excavation of the foundation/garage or basement of any new structures. During excavations, appropriate measures would be taken to ensure that the contaminated soils do not migrate off site and that protective measures are taken to minimize exposures to contaminated dust and soil. These measures include direct placement of soils into covered dump trucks for disposal at approved landfills or soil treatment facilities and placement of excavated soils on tarps/plastic sheets and then covering soils until they are containerized or loaded onto dump trucks and transported off site. Equipment and vehicles would be decontaminated/cleaned prior to leaving the site, and the resulting debris would be captured, containerized, and properly disposed of. Certified clean fill would be used to backfill any areas that would not be covered with new structures. Excavating contaminated soils would reduce the toxicity, mobility, and volume of hazardous constituents in the SEFC E Parcels soils.

Renovation or demolition of Buildings 202 and 74 would require the identification and removal of special hazards by licensed professionals during the renovation of these buildings, reducing the potential for exposure to future building inhabitants by these materials. Therefore, implementing the No Action Alternative would result in long-term beneficial impacts related to hazardous materials and wastes or contaminated sites by removing contaminated soil and remediating Buildings 202 and 74.

3.5.3.2 Alternative 1A Land Acquisition through Land Exchange with Construction and Operation of Relocated Navy Museum on SEFC E Parcels (Preferred Alternative)

Impacts to hazardous materials and wastes from land acquisition through land exchange under Alternative 1A are discussed below, followed by impacts of construction and operation of a relocated Navy Museum on the SEFC E Parcels.

Impacts from Land Acquisition through Land Exchange

The following addresses impacts to hazardous materials and wastes from land acquisition through land exchange, as well as private development and in-kind considerations on the WNY Southeast Corner.

Under Alternative 1A, the Navy Museum Development Foundation would construct and operate a new National Museum of the United States Navy on the SEFC E Parcels.

As part of the land exchange agreement, the Navy would prepare an Environmental Condition of Properties to document environmental assets and hazards on these parcels. The research would consist of database search reports, on-site reconnaissance/site inspection, photo documentation, and interviews with key government staff. Environmental conditions to be identified would include but not be limited to past use, storage, disposal, and release of hazardous substances and petroleum, CERCLA and RCRA sites, tanks, and special hazards.

Under Alternative 1A, the Navy would need to move the Hazardous Waste Storage Site currently located in the parking lot behind Building 166. RCRA mandates that Large-Quantity Generators maintain a less than 90- day storage site for the collection of hazardous wastes and for transportation preparation. The Navy would identify a new location for the Hazardous Waste Storage Site, relocate the facility, and obtain a RCRA permit prior to any land exchange. Without this facility, any activities that generate hazardous waste would be halted. Affected activities would include but are not limited to: the Naval History and Heritage Command Underwater Archaeology Lab, Steam Plant, Dental Clinic, and CNO Barge/Port Operations.

There would be no significant impacts to hazardous materials and wastes. An acceptable location for the Navy Hazardous Waste Storage Site would be identified prior to the land transfer, and the Navy would conduct appropriate NEPA analysis upon identification of a new site.

Responsibility for generation of hazardous materials and wastes from the operation and maintenance of buildings at the WNY Southeast Corner after transfer would become the responsibility of the private developer.

For property that would be leased or used for in-kind considerations by the developer, the Navy would retain responsibility for the contaminated sites to include their investigation and cleanup. Sites that are within the proposed leasing area include Site 21, OU 1, OU 2, SSA 12, and MRP 1. Sites that are within the in-kind consideration areas include Site 7, OU 1, and SSA 12.

For property transferred to the developer, the Navy would maintain responsibility for the sites that are within the transfer area, which include Sites 8 and 11, OU 1, SSA 7, and SSA 12. Sites 8 and 11, OU 1 and SSA 7 are considered to require “no action” or “no further action.”

Investigations are ongoing at Site 21 and OU 2. Remediation standards and methods are not known at this time but would likely entail the removal of contaminated soils and the importation of clean fill, similar to the requirements described under the No Action Alternative for development in the SEFC E Parcels. The Navy would maintain responsibility for all work in the transferred areas. Once Sites 21 and OU 2 are remediated to appropriate standards, there would be beneficial impacts as a result of the reduction in the toxicity, mobility, and volume of hazardous constituents in soils and groundwater in the WNY Southeast Corner.

LUCs and long-term management are in place for SSA 12 – Basewide Fill. As a result of updated USEPA toxicity values, the Navy completed a revised risk assessment that demonstrates there is no longer a

potential unacceptable risk. An Explanation of Significant Difference is being completed to remove the LUC and long-term monitoring requirement at the affected area. Any development by the private developer at these sites that are not "no action" or "no further action" would have to be coordinated with the Navy.

Measures to minimize off-site migration and exposure to contaminated dust and soil described for development of the SEFC E Parcels under the No Action Alternative would be used.

During construction of private development on the WNY Southeast Corner, hazardous materials would be stored and used on site. In particular, petroleum substances, such as diesel and gasoline would be used to run equipment, and paints, adhesives, solvents, and similar construction materials would be stored and used on site. Construction contractors would implement BMPs, such as those included in the stormwater pollution prevention plan, for safe storage of hazardous materials and the prevention of and response to spills related to the operation of construction equipment, to minimize risks.

Construction contractors would also be required to follow all federal and local requirements to properly store, transport, and handle their hazardous materials so that there would be a minimal risk to human health or the environment. If any aboveground storage tanks would be removed, they would be disassembled and their contents properly disposed of in accordance with all federal and local regulations, including being properly defueled, triple rinsed, and the materials properly disposed of at an off-site recycling or other designated facility.

Because of the age of the buildings in the WNY Southeast Corner (except Buildings 405 and 386), special hazards are likely present. Hazardous waste, such as ACM, LBP, PCBs, and mercury-containing devices (e.g., old switches, thermostats, etc.), would likely be generated during rehabilitation activities under Alternative 1. Volumes of waste are not known at this time; however, prior to rehabilitation, a hazardous materials abatement plan would be developed and employed for ACM, LBP, and other materials. All hazardous wastes would be handled and disposed of in accordance with federal and local regulations.

The Navy's alternative development options for the SEFC E Parcels after the land exchange are described in the following sections for Alternatives 1A, 1B, and 1C.

Impacts from Reuse of SEFC E Parcels with Construction and Operation of Relocated Navy Museum

For the SEFC E Parcels, the Navy would be the party responsible for adhering to the conditions of the Final Decision and Final Remedy described in Section 3.5.2.3, *Defense Environmental Restoration Program*. The Navy would be required to remove contaminated soil during excavation of the foundation/garage or basement of any new structures. This would reduce the toxicity, mobility, and volume of hazardous constituents in the SEFC E Parcels soils. Measures to minimize off-site migration and exposure to contaminated dust and soil described for development of the SEFC E Parcels under the No Action Alternative would be used. Any special hazards present in Buildings 74 and 202 would be identified and remediated as a part of any building rehabilitation/reuse. Therefore, implementing this alternative would result in long-term beneficial impacts from the removal of contaminated soils at the WNY and SEFC E Parcels and from the remediation of Buildings 74 and 202.

3.5.3.3 Alternative 1B Land Acquisition through Land Exchange with Construction and Operation of Navy Administrative Development on SEFC E Parcels

Under Alternative 1B, hazardous materials and wastes impacts from land acquisition through land exchange, which involves private development and in-kind considerations on the WNY Southeast Corner, are the same as those described for Alternative 1A.

Impacts to hazardous materials and wastes on the WNY Southeast Corner would be the same as those described for Alternative 1A. Implementing this alternative would also result in long-term beneficial impacts from the removal of contaminated soils at the WNY and SEFC E Parcels and from the remediation of Buildings 74 and 202. This alternative would not result in significant impacts from hazardous materials and wastes or from contaminated sites.

3.5.3.4 Alternative 1C Land Acquisition through Land Exchange with No Development on SEFC E Parcels

Impacts from the land acquisition through land exchange, which involves private development and in-kind considerations on the WNY Southeast Corner, are the same as those described for Alternative 1A.

Impacts to hazardous materials and wastes from the Navy acquiring the SEFC E Parcels and leaving the parcels in their current state would result in the Navy being responsible for adhering to the conditions of the Final Decision and Final Remedy described in Section 3.5.3.2, *Alternative 1: Land Acquisition through Land Exchange with Construction and Operation of Relocated Navy Museum*. There would be no development; therefore, there would be no beneficial impacts associated with the removal of contaminated soils and the remediation of any special hazards present in Buildings 74 and 202. With no development, there would be no use of hazardous materials or generation of hazardous wastes. As a result, this alternative would not result in significant impacts from hazardous materials and wastes or from contaminated sites.

3.5.3.5 Alternative 2A Direct Land Acquisition with Construction and Operation of Relocated Navy Museum on SEFC E Parcels

Impacts to hazardous materials and wastes from direct land acquisition under Alternative 2A are discussed below, followed by impacts of construction and operation of a relocated Navy Museum on the SEFC E Parcels. The WNY Southeast Corner would not be transferred, and the Hazardous Waste Storage Site would not be relocated. There would be no change in the Navy's ongoing remediation efforts at the WNY Southeast Corner. Impacts from the land acquisition through purchase would be the same as those described for the SEFC E Parcels under Alternative 1A. Implementing this alternative would also result in long-term beneficial impacts from the removal of contaminated soils at the WNY and SEFC E Parcels and from the remediation of Buildings 74 and 202. This alternative would not result in significant impacts from hazardous materials and wastes or from contaminated sites.

3.5.3.6 Alternative 2B Direct Land Acquisition with Construction and Operation of Navy Administrative Development on SEFC E Parcels

Under Alternative 2B, hazardous materials and wastes impacts from direct land acquisition are the same as those described for Alternative 1A.

Implementing this alternative would also result in long-term beneficial impacts from the removal of contaminated soils at the SEFC E Parcels and from the remediation of Buildings 74 and 202. This

alternative would not result in significant impacts from hazardous materials and wastes or from contaminated sites.

3.5.3.7 Alternative 2C Direct Land Acquisition with No Development on SEFC E Parcels

Under Alternative 2C, there would be no development on the WNY Southeast Corner. There would be no change to existing conditions and the Navy would remain responsible for the contaminated sites, including adherence to long-term management requirements for sites. Impacts to hazardous materials and wastes from the Navy acquiring the SEFC E Parcels and leaving the parcels in their current state would be the same as those described for Alternative 1C. Any special hazards present in Buildings 74 and 202 would not be identified and remediated as a part of any building rehabilitation/reuse.

This alternative would not result in significant impacts from hazardous materials and wastes or from contaminated sites.

3.5.4 Summary of Impacts and Conclusions

Based on the analysis of potential impacts presented above, there would be no significant impacts regarding hazardous materials and wastes from implementation of the No Action Alternative or Alternatives 2A, 2B, or 2C. However, under Alternative 1A, 1B, and 1C, a suitable location for the Hazardous Waste Storage Site would need to be identified, constructed, permitted, and be operational prior to any land exchange. An acceptable location for the Hazardous Waste Storage Site would be identified prior to the land transfer. The Navy would conduct appropriate NEPA analysis upon identification of a new site.

3.6 Water Resources

This discussion of water resources addresses groundwater, surface water, and floodplains. This section does not include wetlands or marine waters because none occur within the project area (NAVFAC Washington, 2016). The ROI for water resources consists of the WNY and the SEFC E Parcels, as well as the Anacostia River that represents receiving waters for stormwater runoff discharges from these parcels.

Groundwater is water that flows or seeps downward and saturates soil or rock, supplying springs and wells. Groundwater can be used for water consumption, agricultural irrigation, and industrial applications. Groundwater properties are often described in terms of depth to aquifer, aquifer or well capacity, water quality, and surrounding geologic composition.

Surface water resources generally consist of wetlands, lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. Water quality represents the chemical and physical composition of the water as affected by natural conditions and human activities. A Total Maximum Daily Load (TMDL) is the maximum amount of a substance that can be assimilated by a water body without causing impairment. A water body can be deemed impaired if water or sediment quality does not meet applicable standards.

Floodplains are areas of low-level ground present along rivers, stream channels, large wetlands, or coastal waters. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, and nutrient cycling. Floodplains also help to maintain water quality and are often home to a diverse array of plants and animals. In their natural vegetated state, floodplains provide a buffer to water bodies to slow the rate at which the incoming overland flow reaches the main

water body. Floodplain boundaries are most often defined in terms of frequency of inundation, that is, the 100-year floodplain (an area that has a 1 percent chance of flooding in any one year) and 500-year floodplain (moderate flood hazard areas with a 0.2 percent annual chance of flooding). 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.

3.6.1 Regulatory Setting

Laws and regulations applicable to water resources include the following, as detailed in Chapter 5:

- Clean Water Act (CWA) of 1972 (including sections 303(d), 319, 401, 402, 403, 404)
- Coastal Zone Management Act
- Energy Independence and Security Act section 438
- Sikes Act
- EO 11988 (Floodplain Management)
- Other Federal Low Impact Development Guidance
- Federal Antidegradation Policy
- District of Columbia Water Pollution Control Act of 1984, as amended (DC Official Code § 8-103.01 and § 8-103.06, et seq).

3.6.2 Affected Environment

The following describes existing conditions for water resources in the ROI.

3.6.2.1 Groundwater

Shallow groundwater at the historical WNY, including the SEFC E Parcels, is present in two distinct water-bearing units—the surficial fill layer and the underlying sand and gravel formation. The Potomac silt and clay layer is below the localized sand and gravel formation and represents a relatively impermeable lower limit to the groundwater system (NAVFAC and CH2M Hill, 2017).

Depths to groundwater at the WNY are typically from 5 to 15 feet below ground surface (NAVFAC Washington, 2021b). Little rainfall infiltrates into the ground to recharge groundwater levels because about 90 percent of the site is covered by impervious surfaces. General groundwater flow is to the south, although groundwater recharge and movement from adjacent areas are interrupted or hindered by two large sanitary/stormwater utility trenches along 2nd Street and the former Canal Street in the western portion of the property and one large pile-supported utility channel extending across the eastern portion of the SEFC E Parcels. Two Metrorail Green Line tunnels cross the SEFC, draining groundwater from the site into the Anacostia River (GSA, 2004).

No beneficial uses of groundwater at the WNY have been identified. Barium and arsenic are the only contaminants present in the SEFC E Parcels groundwater at concentrations that exceed their applicable Maximum Contaminant Levels (promulgated at 40 CFR Part 141 pursuant to Section 1412 of the Safe Drinking Water Act, 42 U.S.C. Section 300). USEPA (2015b) determined that barium and arsenic are not facility-related contaminants, and concentrations reflect variations in the natural mineral content of the shallow groundwater. USEPA (2015b) determined that human health risks are within USEPA's acceptable range, provided that on-site groundwater is not used for drinking water purposes, and remediation of

barium and arsenic would not provide a significant reduction in risks to actual or potential receptors. Consequently, use of groundwater from the SEFC E Parcels as a potable water source is prohibited (USEPA, 2015b). The groundwater use restriction is implemented through an enforceable institutional control such as a covenant or a deed restriction that are conveyed with the parcel (USEPA, 2015b). Additional information regarding contaminated soils and groundwater is provided in Section 3.5, *Hazardous Materials and Wastes*.

3.6.2.2 Surface Water

The WNY Southeast Corner and the SEFC E Parcels are in the Anacostia River watershed, which is part of the Middle Potomac-Anacostia-Occoquan Subbasin (hydrologic unit code 02070010) of the Potomac River Basin (NAVFAC Washington, 2016). There are no surface water features, such as ponds, creeks, or streams, on the WNY. The closest surface water feature is the Anacostia River, which is approximately 800 feet south of the southern boundary of the SEFC E Parcels and immediately adjacent to the WNY Southeast Corner parcels and some of the in-kind consideration components to Alternative 1 (e.g., Anacostia Riverwalk Trail).

The primary source of surface water at the WNY is stormwater runoff. Most surface runoff exits the site with very little infiltration into the underlying soils because most of the site is covered with impermeable surfaces. Surface drainage is collected in a subsurface stormwater drainage system, which discharges directly into the Anacostia River (NAVFAC and CH2M Hill, 2017).

Stormwater discharges from the WNY are regulated under the Municipal Separate Storm Sewer System (MS4) Permit (National Pollutant Discharge Elimination System [NPDES] Permit No. DC0000221) (USEPA, 2018). The permit authorizes discharges of stormwater to waters of the United States., including the Anacostia River, as long as such discharges comply with the requirements of the permit. The permit requires implementation and enforcement of a stormwater management plan (SWMP) (DOEE, 2020) in accordance with the CWA and corresponding stormwater NPDES regulations. Discharges are also required to comply with the District of Columbia water quality standards and attain applicable waste load allocations for approved TMDLs. SEFC previously had an industrial NPDES permit (Permit No. DC0000299), but it was terminated because industrial wastewaters were no longer discharged to the storm system/surface waters.

The Anacostia River is the receiving water for stormwater discharges from the WNY and the SEFC. The Anacostia River is a large tributary to the Potomac River that begins 1.5 miles north of the District of Columbia at the confluence of its northwest and northeast branches. The lower, tidal portion of the Anacostia joins the Potomac River at Hains Point, 2 miles downstream from the WNY. The portion of the Anacostia River directly adjacent to the WNY is approximately 1,050 feet (0.2 mile) wide and tidally influenced, with depths ranging from about 10 to 15 feet. At this location, the Anacostia River is a transition zone that varies with the tides between freshwater riverine characteristics upstream and brackish estuarine characteristics downstream. Near the WNY, the average tidal range varies from 1 foot below mean sea level (msl) to 2 feet above msl (GSA, 2004).

Beneficial uses of the Anacostia River are: primary and secondary contact recreation; protection and propagation of fish, shellfish, and wildlife; protection of human health related to consumption of fish and shellfish; and navigation. The Anacostia River is impaired because it does not achieve applicable water quality standards for various pollutants (total suspended solids, biological oxygen demand, nutrients, trash, bacteria, oil and grease, metals, chlorinated pesticides, PAHs, and PCBs). TMDLs have been prepared and implemented to address these impairments (USEPA, 2016).

3.6.2.3 Floodplains

The 100-year and 500-year floodplain elevations at the WNY are approximately 11 feet and 14 feet, respectively, above msl. Approximately 1.2 acres of the SEFC E Parcels, including portions of existing Buildings 202 and 74, as well as the southern portion of the WNY Southeast Corner, are within the 100-year floodplain boundary; 2.6 acres of the SEFC E Parcels and approximately one-third of the WNY Southeast Corner are within the 500-year floodplain boundary (Figure 3.6-1) (FEMA, 2021). The remaining portions of the SEFC E Parcels and the WNY Southeast Corner are outside of the 500-year floodplain and considered a low flood risk. The 100-year floodplain elevation at the WNY is higher than the top of the SEFC seawall, which is 9.1 feet above msl at its highest point and 3.6 feet above msl at its lowest point. Therefore, the existing seawall does not prevent intrusion of floodwaters greater than 3.6 feet above msl (GSA, 2004).

The Anacostia River is subject to flooding, and portions of the WNY have been affected historically from a combination of coastal flooding with storm surge from hurricanes, tidal effects, and backwater flows from the Potomac River (USACE, 2017). Flood control efforts such as dredging and widening the channel have increased the flow capacity of the river during flood events, reducing the extent of flooding onto the floodplain (GSA, 2004). Flooding related to stormwater is usually a local issue and handled through various stormwater management programs (USACE 2017).

In 2017, the U.S. Army Corps of Engineers (USACE) conducted a flood risk management study that identified possible options for reducing potential risks to WNY buildings and their contents; options included floodwalls, closures, dry flood proofing, and wet flood proofing. Assessments of benefit cost ratios for the flood risk management options considered several factors, including resilience to future sea level rise, adaptability to future changing conditions, and cost effectiveness, as well as the potential for minimizing adverse effects on the river viewshed, Installation security, and historical/cultural and environmental resources (USACE, 2017).

3.6.3 Environmental Consequences

The analysis of environmental consequences to water resources addresses the potential impacts on groundwater, surface water, and floodplains. 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 analysis of floodplains considers if any new construction is proposed within a floodplain or may impede the functions of floodplains in conveying floodwaters.

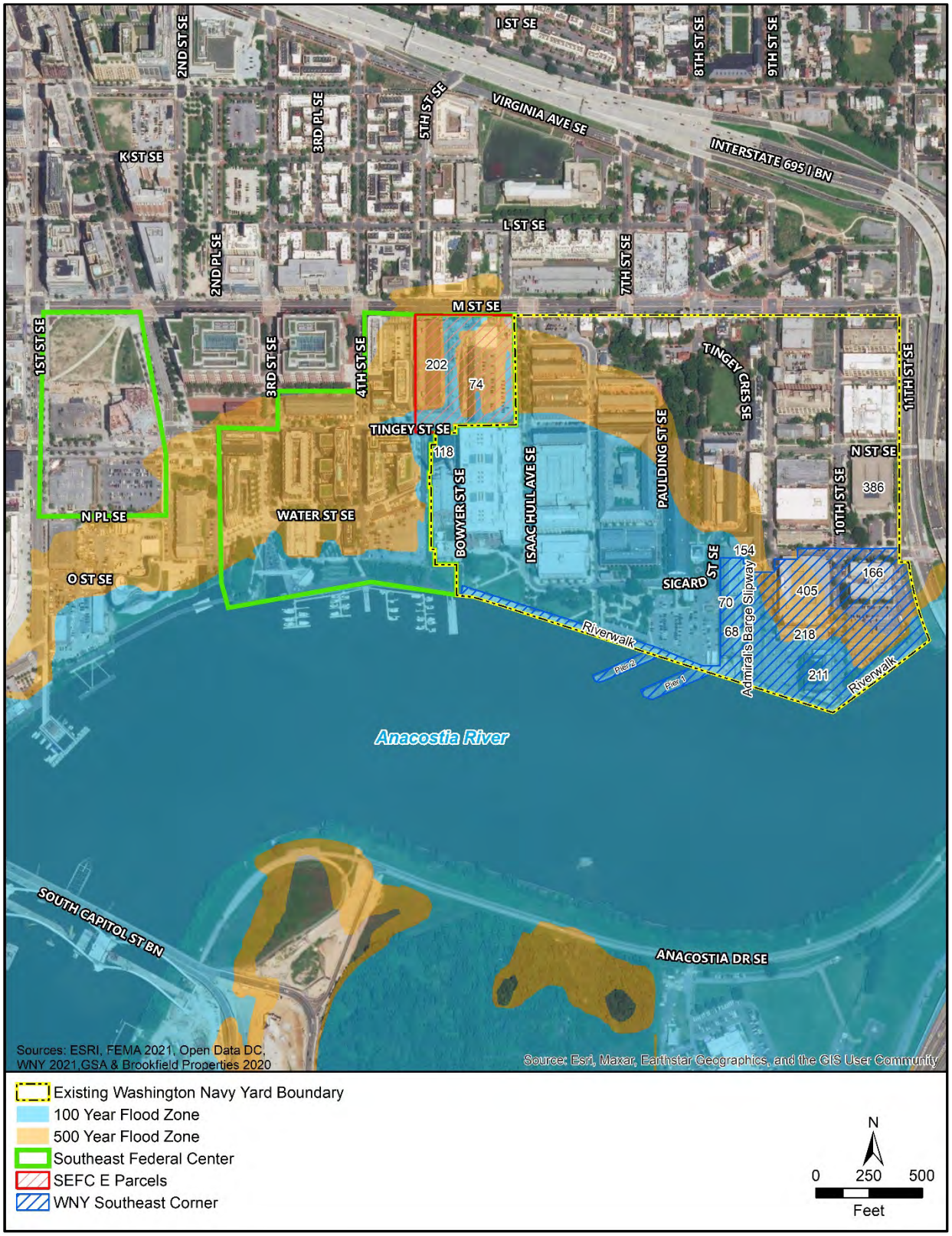


Figure 3.6-1 Washington Navy Yard Flood Zones

3.6.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. The Navy would not acquire the SEFC E Parcels or redevelop the parcels. No Navy relocations as a result of a land exchange would occur on the WNY. The No Action Alternative assumes the private developer would proceed with development of the SEFC E Parcels. This planned private development includes the potential renovation of two historic buildings (Buildings 74 and 202) and construction of two new buildings. Renovated Building 202 may provide approximately 328,000 square feet of office space. Renovated Building 74 and the two new buildings constructed would provide approximately 538,000 square feet of residential space. As a result, potential impacts to water resources could occur from renovation of existing facilities, construction of new buildings and structures, and operation of the multiuse development. The development plans, which have been approved, would include permits and measures to manage construction stormwater, sedimentation, and flood risk potential.

Impervious Surfaces

Roads, parking lots, and other types of impervious cover contribute to stormwater runoff. There is a direct relationship between the amount of impervious cover and the biological and physical condition of downstream receiving waters. Approximately 90 percent of the site is currently covered with impervious surfaces. The developer may choose to add more impervious surfaces to the project site under the No Action Alternative, but given the overall size of the property, this would result in only minor increases in runoff volumes.

Although the WNY has previously been disturbed, during renovation of existing buildings and construction of new buildings, some portion of the impervious surfaces likely would be removed and underlying soils could be exposed temporarily and become susceptible to erosion and transport by wind and/or stormwater runoff. Prior to the start of construction, the developer would apply for coverage under the Construction General Permit (USEPA, 2022c) that includes measures for managing stormwater runoff and preventing erosion and off-site transport of soil. The permit would require the developer to prepare a stormwater pollution prevention plan that specifies control measures for minimizing the potential for soil erosion. With compliance with the Construction General Permit (USEPA, 2022c), impacts to water resources associated with impervious surfaces would not be significant.

New Stormwater Drainage Facilities or Expansion of Existing Facilities

Changes in site topography related to raising elevations to address flood risks could affect existing drainage patterns and the effectiveness of the existing stormwater runoff collection and conveyance system.

Stormwater runoff discharges from the SEFC E Parcels would be regulated under a MS4 or individual permit. The SWMP for the MS4 permit (DOEE, 2016) identifies structural controls, also referred to as BMPs, as engineered controls built to manage or alter flow, velocity, duration, and water quality of runoff by physical means. The developer may also choose to incorporate low impact development (LID) measures into the stormwater system. The goal of LID is to reduce runoff and to mimic a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, filtering, storing, evaporating, and detaining stormwater runoff close to its source (USEPA, 2013). However, (DOEE, 2020) stormwater management guidance prohibits infiltration of stormwater at sites with known contamination and requires use of impermeable barriers for BMPs. A number of practices are available that can successfully manage stormwater and prevent the mobilization of subsurface

contamination, such as green roofs installed on the top of buildings, to reduce the amount of stormwater runoff, and capture and reuse of stormwater for toilet flushing or irrigation (USEPA, 2013). The extent to which the developer plans to implement structural controls, LID measures, and other BMPs into the stormwater system is unknown. However, given that the development plans have been approved, the developer would be expected to implement appropriate stormwater controls to comply with District requirements. With appropriate stormwater infrastructure at SEFC E Parcels, impacts to water resources would not be significant under the No Action Alternative.

Development in a Floodplain

As noted in water resources Section 3.6.2, *Affected Environment*, portions of the SEFC E Parcels are within the 100-year floodplain. District regulations (District of Columbia Municipal Regulation Title 20 Chap. 31) on floodplain management would apply to development on the SEFC E Parcels. Building construction within the 100-year floodplain requires a building permit from the District. Without the permit, construction cannot commence (GSA, 2004).

NCPC (2008) noted *"The Yards mostly avoided developing within the 100-year floodplain by proposing to raise the site's elevation above floodplain levels. This is a common and permissible development technique that is employed as a means of avoiding the costly construction, insurance, and regulatory requirements typically associated with building in a floodplain. Raising the site's base elevation helps protect the site by keeping water out that would otherwise have inundated the site in a storm. It is important to note that while this methodology is both customary and allowable, elevating the base elevation by placing fill within the floodplain can make flooding impacts worse elsewhere in the watershed, particularly from the cumulative impacts when a number of projects in the same watershed use this means."* Development within the SEFC E Parcels would likely use a similar approach for on-site flood risk management; however, this approach could exacerbate flood risks at adjacent properties. Alternatively, the development could implement one or more of the flood risk management options evaluated (USACE, 2017) for the WNY. Given that the development has been approved, the development plans must include adequate measures for complying with applicable District regulations regarding flood risks. While following District regulations and other applicable guidance could reduce damage and associated repair costs of flood events to the proposed development, the risk of flood events at the site would remain.

Surface Water Quality

No surface water features such as creeks and streams currently exist within or immediately adjacent to the SEFC E Parcels. Stormwater runoff discharges from the SEFC E Parcels would be regulated under a MS4 or individual permit. Compliance with the permit conditions would ensure that impacts on surface water quality in the Anacostia River from stormwater discharges under the No Action Alternative would not be significant.

Water Quality Standards

Stormwater runoff discharges are the only waste streams from the SEFC E Parcels subject to water quality standards. Under the No Action Alternative, development within the SEFC E Parcels would be expected to continue operating in accordance with the existing stormwater pollution prevention plan and SWMP. Compliance with these plans and with a MS4 or individual permit would ensure that activities associated with the No Action Alternative would not violate water quality standards and impacts would not be significant.

Impacts to water resources under the No Action Alternative would not be significant with implementation of appropriate stormwater infrastructure and flood risk management measures, with the exception that flood risks would remain.

3.6.3.2 Alternative 1A Land Acquisition through Land Exchange with Construction and Operation of Relocated Navy Museum on the SEFC E Parcels (Preferred Alternative)

Acquisition of the SEFC E Parcels via land exchange and relocation of existing functions within the WNY Southeast Corner to other areas within the WNY as part of the Proposed Action would not result in any impacts to water resources under Alternative 1A. However, renovation of existing buildings and construction of new facilities (i.e., Navy Museum or Navy administrative facilities) could potentially result in impacts to water resources as discussed below. The analysis of environmental consequences assumes that construction and operations within the SEFC E Parcels would comply with UFC 1-201-01, *Non-Permanent DoD Facilities in Support of Military Operations* (DoD, 2022); UFC 3-201-01, *Civil Engineering* (DoD, 2021); UFC 3-210-10, *Low Impact Development* (DoD, 2020c); and Facilities Criteria (FC) 4-760-10N, *Navy Museums and Historic Resource Facilities* (DoD, 2013). Development by a private developer in the WNY Southeast Corner, including in-kind considerations along the shoreline of the Anacostia River, could also potentially result in impacts to water resources that would be comparable to those discussed under the No Action Alternative. The study area for the analysis of effects to water resources associated with Alternative 1 includes the WNY, SEFC E Parcels, and the Anacostia River, which is identified in the MS4 permit (USEPA, 2018) as the receiving water for stormwater discharges.

Impacts to water resources for the land acquisition involving private development on the WNY Southeast Corner are analyzed together.

Impervious Surfaces

As discussed under water resources Section 3.6.3.1, *No Action Alternative*, a major portion of the WNY, including the SEFC E Parcels, is presently covered by roads and buildings that represent impervious surfaces with limited potential for infiltration of rainfall runoff into underlying soils and aquifer. Renovation of the existing structures and new construction would not add to the existing impervious surfaces to an extent that would substantially increase runoff volumes or infiltration rates. Similarly, development within the WNY Southeast Corner or any of the in-kind consideration components would not add to the existing impervious surfaces to an extent that would substantially increase runoff volumes or infiltration rates within those parcels.

During renovation of existing buildings and construction of the new building, some portion of the impervious surfaces likely would be removed temporarily. During this period, underlying soils could be exposed and susceptible to erosion and transport by wind and/or stormwater runoff. Prior to the start of construction of Alternative 1A, the Navy would apply for coverage under the Construction General Permit (USEPA, 2022c) that includes measures for managing stormwater runoff and preventing erosion and off-site transport of soils. The permit would require the Navy to prepare a stormwater pollution prevention plan that specifies control measures for minimizing the potential for soil erosion.

At the WNY, all construction sites adhere to the following procedures:

- DOEE's stormwater management program including erosion and sediment control measures and processes.
- DOEE Erosion and Sediment Control plan approval, if applicable.

- Maintain and follow approved construction sediment and erosion control plans.
- Periodically inspect for adherence to the approved sediment and erosion control plans.
- Implement good housekeeping measures including covering materials exposed to rainfall, storing toxic and hazardous materials in appropriate containers, depositing solid wastes in covered dumpsters, and protecting stormwater inlets.

The District also requires developers to provide an erosion and sediment control plan for development that would result in 50 square feet or more of land disturbance. Erosion and sediment control plans must include stabilization and structural controls (DOEE, 2016). Specific types of stormwater controls that the Navy could employ during construction are identified in Table 2.6-1, and these include use of perimeter controls, site stabilization, storm outlet protection, dust control, check dams, mulching, and seeding. Construction contractors would be responsible for maintaining all erosion control measures, as well as equipment, to ensure there are no fuel or lubricant leaks. Measures that would be employed to minimize or avoid contact with contaminated soils and groundwater during project construction are discussed in Section 3.5, *Hazardous Materials and Wastes*. Construction workers would be notified, as required, regarding the potential presence of historical soil/groundwater contamination. Additionally, development would be halted upon discovery of any vapors, discoloration, or other evidence of soil/groundwater contamination during construction and the Navy would be notified. The Navy would be required to remove contaminated soil during excavation of the foundation/garage or basement of any new structures at the SEFC E Parcels. BMPs implemented to prevent the release of soil contaminants are addressed in Section 3.5, *Hazardous Materials and Wastes*. Temporary exposure of underlying soils during construction would not substantially affect rates of infiltration of surface water to groundwater because the portion of the site exposed would be relatively small and the period of exposure would be temporary.

Similarly, during construction of new buildings within the WNY Southeast Corner, although previously disturbed, some portion of the impervious surfaces likely would be removed and underlying soils could be exposed temporarily and susceptible to erosion and transport by wind and/or stormwater runoff. Prior to the start of construction, the developer would apply for coverage under the Construction General Permit (USEPA, 2022c) that includes measures for managing stormwater runoff and preventing erosion and off-site transport of soil. The permit would require the developer to prepare a stormwater pollution prevention plan that specifies control measures for minimizing the potential for soil erosion.

After the construction phase, Alternative 1A would not substantially change the portion of the site covered with impervious surfaces to an extent that would affect current stormwater runoff volumes or expose site soils to erosion and off-site transport. Consequently, impacts to water resources related to impervious surfaces would not be significant.

New Stormwater Drainage Facilities or Expansion of Existing Facilities

As discussed above, implementation of Alternative 1A would not result in larger stormwater runoff volumes that would necessitate an expansion of existing stormwater infrastructure. However, the District's Municipal Regulations require that major land-disturbing activities (i.e., that disturb more than 5,000 square feet) must retain the first 1.2 inch of rainfall on site or through a combination of on site and off-site retention, and any major substantial improvement activity must retain the first 0.8 inch of rainfall on site or through a combination of on-site and off-site retention. Retention is achieved with BMPs that infiltrate, evapotranspire (defined as sum of evaporation from the land surface plus

transpiration from plants) (USGS, 2018), and/or harvest stormwater runoff for non-potable uses (DOEE, 2016).

UFC 3-201-01 specifies that the design of a storm drainage system and stormwater management features must address the following:

- The storm drainage system and stormwater management plan must comply with federal, state, and local regulatory requirements including regional or site-specific stormwater management agreements.
- Minimize grading to complement the features and functions of the natural drainage system and the existing contours.
- The siting and sizing of stormwater management facilities must take into account the high and seasonal groundwater table elevations.
- Utilize overland flow and natural site features where storm drainage will not impact site function or adversely affect surrounding sites. Drainage systems must prevent erosion of existing soils, ponding, and convey flow to a suitable outfall location.
- Culverts, ditches, and other drainage structures must be designed to minimize adverse environmental effects (e.g., impacts to wetlands, blocking fish passage).
- If a suitable point of discharge does not exist, one must be constructed.

Additionally, in accordance with the Navy's established or adopted building standards (DoN, 2007), new and redeveloped military facilities must incorporate sustainable designs. Table 2.6-1 identifies LID as a BMP that would be incorporated into the project design. The criteria and design standards in UFC 3-210-10 are required for the planning, design, and construction of all permanent DoD projects in the United States that meet both of the following conditions:

1) The project includes construction or expansion of one or more buildings as part of its primary scope (i.e., primary facilities versus supporting facilities).
2) The "footprint" is greater than 5,000 gross square feet. "Footprint" consists of all new impervious surfaces associated with the building(s), including both building area and pavement area of associated supporting facilities (such as parking and sidewalks). "Footprint" does not include the existing building area to be renovated, existing pavement area to be resurfaced, or new pavement area other than supporting facilities associated with the building(s).

LID features can fall into the following general categories (DoD, 2020c):

- Engineered Natural Treatment: features that provide depression storage, infiltration, and evapotranspiration, such as bioretention, vegetated swales, rain gardens, and vegetated filter strips.
- Engineered Subsurface Treatment: features may include permeable pavements and infiltration trenches that provide infiltration and prevent concentrated flow.
- Non-potable Rainwater Harvesting Systems: features that may include LID features like cisterns and rain barrels to store rainwater for non-potable uses, such as irrigation.

- Green (Vegetative) Roofs: these features do not promote infiltration of water into the ground at the source.

LID features that result in infiltration into soils would not be appropriate at the WNY or the SEFC E Parcels due to the presence of contaminants. However, infiltration features can be designed to manage stormwater and prevent the mobilization of subsurface contamination, such as incorporating an impermeable liner with subdrains that discharge to the surface or away from subsurface plumes (USEPA, 2009).

With compliance with the relevant UFC and other Navy building standards, Alternative 1A would not result in substantial increases in stormwater runoff volumes, and incorporation of LID features would further reduce pollutant loadings to the Anacostia River associated with stormwater discharges from the site. In-kind considerations for Alternative 1 could include integrating the private stormwater management system for the WNY Southeast Corner development with the Navy's stormwater system to mitigate impacts of development and improve stormwater management on the WNY (Table 2.3-4), resulting in beneficial impacts to stormwater management. Construction of new stormwater runoff drainage facilities or upgrades to the existing facilities would be coordinated with site cleanup efforts (see Section 3.5, *Hazardous Materials and Wastes*) to avoid potential risks of encountering and exposing contaminated soils and groundwater. Compliance with applicable UFC and District's Municipal Regulations would ensure that potential impacts to water resources associated with stormwater runoff would not be significant.

Development in a Floodplain

Development within the 100-year floodplain is restricted through EO 11988 (42 Federal Register 26951; https://www.archives.gov/federal-register/codification/executive-order/11988.html), which requires federal agencies to avoid 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 wherever there is a practicable alternative. Section 3(b) of EO 11988 states *"If, after compliance with the requirements of this Order, new construction of structures or facilities are to be located in a floodplain, accepted floodproofing and other flood protection measures shall be applied to new construction or rehabilitation. To achieve flood protection, agencies shall, wherever practicable, elevate structures above the base flood level rather than filling in land."* District regulations (District of Columbia Municipal Regulation Title 20 Chapter 31) on floodplain management also would apply to development on the SEFC E Parcels under EO 11988. Building construction within the 100-year floodplain requires a building permit from the District. Without the permit, construction cannot commence (GSA, 2004).

Because a large portion of the SEFC E Parcels is within the 100-year or 500-year floodplain boundary, the facility would be subject to some degree of flooding risk. As specified in FC 4-760-10N (DoD, 2013), the Navy Museum must be sited a minimum of 5 feet above and 100 feet from any 100-year floodplain area or be protected by an appropriate flood wall that conforms to local or regional building codes. FC 4-760-10N (DoD, 2013) also notes that it is desirable for museums to be located above the 500-year floodplain or have critical artifacts and records protected to this level.

To comply with the UFC specifications, the Navy would implement appropriate measures to alleviate impacts from flood waters through structural means and preserving or repairing natural drainage to the extent possible. The measures and design considerations would also need to ensure that the building would not obstruct runoff from upgradient areas that could contribute to flood risks on site or in adjacent properties.

UFC 3-201-01 (DoD, 2021) specifies that when mission needs require siting a building within or partially within a flood hazard area, the designer of record should obtain or prepare the project-specific Basis for Flood Risk Design to determine the appropriate design flood elevation. The appropriate building elevations would also account for site-specific sea level rise scenarios. The design of flood protection systems providing protection to the 1 percent annual chance flood event would use 44 CFR Section 65.10, and the flood protection system would be certified by the designer of record.

Examples of flood protection systems and flood resistant designs that the Navy could implement to reduce potential flooding impacts are identified in UFC 3-201-01 (DoD, 2021), the signed ROD for the SEFC EIS (GSA, 2004), and the (USACE, 2017) Flood Risk Management Study; these measures include the following:

- Design and construct (or modify) buildings so that they are adequately anchored to prevent flotation, collapse, or lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.
- Design the lowest floor in accordance with legally applicable elevation requirements, if possible or practicable.
- Design buildings using dry, floodproofed materials where possible, so that the walls are substantially impermeable to the passage of floodwaters to or above the 100-year floodplain.
- Elevate buildings on pile, post, pier, or column foundations that are free of obstruction and have the lowest horizontal structural member supporting the lowest floor above the 100-year floodplain.
- Construct with materials resistant to flood damage.
- Construct by methods and practices that minimize flood damage and take into account post flood cleanup methods and requirements.
- Consider the installation of floodgates at points of entrance and egress where water could enter the building.

While following UFC specifications and other applicable guidance could reduce damage and associated repair costs of flood events to the museum, the risk of flood events at the site would remain. Flood risks would be reduced with implementation of flood management measures, such as those evaluated for the WNY by the USACE flood risk management study (USACE, 2017) and/or measures identified in UFC 3-201-01 (DoD, 2021) or in the signed ROD for the SEFC EIS (GSA, 2004).

Similarly, development within portions of the WNY Southeast Corner would be subject to risk from flooding. The developer could address this risk by proposing to raise the elevation of the site above floodplain levels. However, similar to the No Action Alternative, this approach could exacerbate flood risks at adjacent properties. Alternatively, the development could implement one or more of the flood risk management options evaluated by USACE for the WNY Flood Risk Management Study (USACE, 2017) and/or measures identified in UFC 3-201-01 (DoD, 2021) or in the signed ROD for the SEFC EIS (GSA, 2004). While following District regulations and other applicable guidance could reduce damage and associated repair costs of flood events to the proposed development, the risk of flood events at the site would remain.

Surface Water Quality

No surface water features, such as creeks or streams, exist within the SEFC E Parcels or the WNY Southeast Corner. Therefore, construction of Alternative 1A would not affect water quality for on-site surface waters. However, stormwater discharges could affect surface water quality in the Anacostia River.

Federal statutes and regulations require stormwater runoff discharges from construction activity, including renovation, clearing, grading, and excavation, and other land disturbance activities, to obtain coverage under an NPDES permit. The Navy would obtain coverage under the Construction General Permit (USEPA, 2022c) that requires implementation of best available technology and best conventional pollutant control technology to reduce or eliminate pollutants in stormwater runoff, as well as additional requirements necessary to implement applicable water quality standards. The developer for the WNY Southeast Corner would also be expected to obtain coverage under the Construction General Permit.

The Construction General Permit (USEPA, 2022c) requires ensuring that stormwater runoff discharges do not contain pollutants that cause or contribute to an exceedance of any applicable water quality objectives or water quality standards contained in a Water Quality Control Plan, the National Toxics Rule, or other applicable water quality standards. The Construction General Permit (USEPA, 2022c) also requires that dischargers located within the watershed of a 303(d) impaired water body, for which a TMDL has been approved by the USEPA, comply with the approved TMDL if it identifies "construction activity" or land disturbance as a source of the pollution.

Construction of Alternative 1A would comply with the Construction General Permit (USEPA, 2022c), and stormwater runoff discharges would be required to meet limits specified in the permit. While an exceedance of a numeric action level does not constitute a violation of permit, the Construction General Permit (USEPA, 2022c) would also require implementing additional BMPs and revision of stormwater pollution prevention plans to either prevent pollutants and authorized non-storm water discharges from contaminating stormwater runoff, or to substantially reduce the pollutants to levels consistently below the numeric action levels. Compliance with the Construction General Permit (USEPA, 2022c) would ensure that stormwater runoff discharges associated with Alternative 1A construction activities would not result in violations of water quality standards and impacts would not be significant.

Construction activities may require collection and disposal of dewatering effluent. If needed, the design and implementation of a dewatering system would comply with UFC 3-220-04, *Dewatering and Groundwater Control* (DoD, 2004). Disposal options for dewatering effluent would depend on the presence and extent of contamination present (see Section 3.5, *Hazardous Materials and Wastes*). If appropriate, a wastewater discharge permit may be required before the dewatering effluent could be discharged to the sanitary sewage system (DC Water, 2022a).

Alternative 1A operations would not substantially change the character or amount of industrial pollutants generated on site that could be exposed to stormwater runoff. Instead, the primary source of potential pollutants likely would be vehicle use that could contribute pollutants such as copper, zinc, and/or PAHs associated with brake dust and/or motor oil deposits. Pollutant loadings from vehicles would be similar to current loadings. Additionally, as noted above, Alternative 1A would incorporate LID features. LID features would be expected to reduce pollutant loadings due to improved stormwater facilities design and pollutant retention efficiencies. Additionally, the WNY uses a number of stormwater management structures and BMPs, such as bioretention cells, sand filters, tree boxes, permeable pavers

and rain barrels, to control stormwater runoff and reduce pollutants in stormwater discharges (NAVFAC Washington, 2016). Similar devices could be incorporated into runoff controls associated with Alternative 1A.

After construction of the Navy Museum is completed, stormwater discharges would be regulated by the MS4 permit, which would be modified as appropriate to reflect post-construction changes to the stormwater runoff facilities and characteristics of the runoff. Additionally, the Navy would update the existing WNY stormwater pollution prevention plan to include the area and activities associated with SEFC E Parcels. Compliance with the permit would ensure that operational stormwater discharges do not degrade water quality or adversely affect beneficial uses of the Anacostia River.

Impacts to surface water quality from development within the WNY Southeast Corner would be similar to those discussed under the No Action Alternative; however, the WNY Southeast Corner development would be larger (approximately 15 acres) compared to the No Action Alternative (approximately 6 acres). Additionally, some of the in-kind considerations, such as renovation of Piers 1 and 2 and repairs to the Anacostia Riverwalk Trail, could involve construction over or immediately adjacent to the river. However, none of these project components would involve in-water work. Construction activities would be governed by the Construction General Permit that includes measures for preventing accidental releases of construction debris into surface waters, such as preparation and implementation of a debris management plan. Compliance with the permit would ensure that construction activities associated with these project components would not degrade water quality or adversely affect beneficial uses of the Anacostia River. After construction within the WNY Southeast Corner is completed, stormwater discharges would be regulated by the MS4 or individual permit, which would reflect post-construction changes to the stormwater runoff facilities and characteristics of the runoff. Additionally, the developer would prepare and implement a stormwater pollution prevention plan. Compliance with the permit would ensure that operational stormwater discharges do not degrade water quality or adversely affect beneficial uses of the Anacostia River. Therefore, impacts to surface water quality due to Alternative 1A operations would not be significant.

Water Quality Standards

In general, construction and operations activities associated with Alternative 1A would not generate point source waste streams other than stormwater runoff discharges and potentially dewatering effluent. Stormwater discharges and, if needed, dewatering effluent discharges are expected to comply with all applicable permit-specified effluent limitations and, consequently, would not result in any violations of water quality standards. Therefore, impacts would not be significant.

With implementation of appropriate stormwater infrastructure and BMPs, Alternative 1A would not result in significant impacts to water resources, with the exception that flood risks would remain. Flood risks would be reduced with implementation of flood management measures, such as those evaluated for the WNY by the USACE flood risk management study (USACE, 2017) and/or measures identified in UFC 3-201-01 (DoD, 2021) or in the signed ROD for the SEFC EIS (GSA, 2004). Impacts from implementation of Alternative 1A, would not result in significant impacts on the water resources except for the risk of flooding, which would remain unless mitigation measures would be implemented on the SEFC E Parcels and the WNY Southeast Corner developments. Both the Navy and the developer would implement mitigation measures. Those measures would be incorporated into site design that would not occur until the NEPA process is complete and an alternative has been selected.

3.6.3.3 Alternative 1B Land Acquisition through Land Exchange with Construction and Operation of Navy Administrative Development on SEFC E Parcels

The effects to water resources from construction and operation of Alternative 1B would be the same as those for Alternative 1A because the same measures and permit conditions would apply. Therefore, with implementation of appropriate stormwater infrastructure and BMPs, Alternative 1B would not result in significant impacts to water resources, with the exception that flood risks would remain. Flood risks would be reduced with implementation of flood management measures evaluated by USACE for the WNY Flood Risk Management Study (USACE, 2017) and/or measures identified in UFC 3-201-01 (DoD, 2021) or in the signed ROD for the SEFC EIS (GSA, 2004).

Water resources impacts from implementation of Alternative 1B would not be significant. The risk of flooding would remain the same unless mitigation measures would be implemented on the SEFC E Parcels and the WNY Southeast Corner developments. Both the Navy and the developer would implement mitigation measures. Those measures would be incorporated into site design that would not occur until the NEPA process is complete and an alternative has been selected.

3.6.3.4 Alternative 1C Land Acquisition through Land Exchange with No Development on the SEFC E Parcels

Acquisition of the SEFC E Parcels via land exchange would result in no changes to the existing water resources related to impervious surfaces, new stormwater infrastructure, flooding risks, changes to surface water quality, or compliance with water quality standards, because the Navy would leave these parcels in their current state. The developer would still construct on the WNY Southeast Corner. With implementation of appropriate stormwater infrastructure and BMPs, Alternative 1C would not result in significant impacts to water resources. Therefore, this alternative would not result in significant impacts to water resources, with the exception that flood risks would remain. Flood risks would be reduced with implementation of flood management measures evaluated by USACE (USACE, 2017) for the WNY flood risk management study and/or measures identified in UFC 3-201-01 (DoD, 2021) or in the signed ROD for the SEFC EIS (GSA, 2004). No significant impacts on water resources would occur under Alternative 1C except for the risk of flooding, which would remain unless mitigation measures would be implemented on the WNY Southeast Corner development. The developer would implement mitigation measures. Those measures would be incorporated into site design that would not occur until the NEPA process is complete and an alternative has been selected.

3.6.3.5 Alternative 2A Direct Land Acquisition with Construction and Operation of Relocated Navy Museum on SEFC E Parcels

This section addresses potential impacts to water resources from direct land acquisition of the SEFC E Parcels followed by construction and operation of the Navy Museum (Alternative 2A), construction and operation of a new administrative facilities (Alternative 2B), or no development (Alternative 2C). No private development in the WNY Southeast Corner would occur, and no in-kind considerations would be implemented. As a result, Alternative 2 would have less stormwater and flooding potential impacts compared to Alternative 1, since development would be less. However, no stormwater management upgrades or flood wall improvements through in-kind considerations would occur.

Potential impacts associated with Alternatives 2A and 2B include those associated with renovation and construction activities, as well activities associated with operation and maintenance of facilities. The analysis of environmental consequences assumes that construction and operations would comply with

UFCs discussed under Alternative 1. The study area for the analysis of effects to water resources associated with Alternative 2 includes the SEFC E Parcels project site and the Anacostia River, which is the receiving water for stormwater discharges from the SEFC E Parcels.

The effects to water resources from construction and operation of Alternative 2A would be the same as those for Alternative 1A because the same measures and permit conditions would apply. No development would occur in the WNY Southeast Corner, so impacts would be less than under Alternative 1. Therefore, with implementation of appropriate stormwater infrastructure and BMPs, Alternative 2A would not result in significant impacts to water resources, with the exception that flood risks would remain. Flood risks would be reduced with implementation of flood management measures evaluated by USACE (USACE, 2017) for the WNY flood risk management study and/or measures identified in UFC 3-201-01 (DoD, 2021) or in the signed ROD for the SEFC EIS (GSA, 2004).

3.6.3.6 Alternative 2B Direct Land Acquisition with Construction and Operation of Navy Administrative Development on SEFC E Parcels

The effects to water resources from construction and operation of Alternative 2B would the same as those for Alternative 1A because the same measures and permit conditions would apply. Therefore, with implementation of appropriate stormwater infrastructure and BMPs, Alternative 2B would not result in significant impacts to water resources, with the exception that flood risks would remain. Flood risks would be reduced with implementation of flood management measures evaluated by USACE for the WNY Flood Risk Management Study (USACE, 2017) and/or measures identified in UFC 3-201-01 (DoD, 2021) or in the signed ROD for the SEFC EIS (GSA, 2004).

3.6.3.7 Alternative 2C Direct Land Acquisition with No Development on SEFC E Parcels

Under Alternative 2C, direct acquisition of the SEFC E Parcels would not result in any change to the existing water resources related to impervious surfaces, new stormwater infrastructure, flooding risks, changes to surface water quality, or compliance with water quality standards. The Navy would not develop the SEFC E Parcels except to relocate the fence line; therefore, this alternative would not result in significant impacts to water resources. Impacts under Alternative 2C would be much less compared to the No Action Alternative with minimal Navy development except for installation of a fence on the SEFC E Parcels and no planned Navy development or land exchange on the WNY Southeast Corner.

3.6.4 Summary of Impacts and Conclusions

Based on the analysis of potential impacts presented above, there would not be significant impacts to water resources from implementation of the No Action Alternative and all action alternatives, with the exception that the risk of flood events at the WNY Southeast Corner and SEFC E Parcels would remain. Flood risks would be reduced with implementation of flood management measures such as those evaluated by USACE for the WNY Flood Risk Management Study (USACE, 2017) and/or measures identified in UFC 3-201-01 (DoD, 2021) or in the signed ROD for the SEFC EIS (GSA, 2004).

3.7 Noise

This discussion of noise includes the types or sources of noise and the associated noise-sensitive receptors in the human environment. Noise in relation to biological resources and wildlife species is considered to be negligible and was not analyzed in detail.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air or water, and are sensed by the human ear. The perception and evaluation of sound involves three basic physical characteristics:

- Intensity – the acoustic energy, which is expressed in terms of sound pressure, in decibels (dB)
- Frequency – the number of cycles per second the air vibrates, in Hertz
- Duration – the length of time the sound can be detected

Noise is defined as unwanted or annoying sound that interferes with or disrupts normal human activities. Although continuous and extended exposure to high noise levels (e.g., through occupational exposure) can cause hearing loss, the principal human response to noise is annoyance (see Appendix D, *Discussion of Noise and Its Effect on the Environment*). The response of different individuals to similar noise events is diverse and is influenced by the type of noise, perceived importance of the noise, its appropriateness in the setting, time of day, type of activity during which the noise occurs, and sensitivity of the individual. In depth background information on noise, including its effect on many facets of the environment, is provided in Appendix D, *Discussion of Noise and Its Effect on the Environment*.

3.7.1 Basics of Sound and A-Weighted Sound Level

The loudest sounds that can be comfortably heard by the human ear have intensities a trillion times higher than those of sounds barely heard. Because of this vast range, it is unwieldy to use a linear scale to represent the intensity of sound. As a result, a logarithmic unit known as the dB is used to represent the intensity of a sound, also referred to as the sound level. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above 120 dB begin to be felt inside the human ear as discomfort. Sound levels between 130 and 140 dB are felt as pain (Berglund & Lindvall, 1995).

All sounds have a spectral content, which means their magnitude or level changes with frequency, where frequency is measured in cycles per second, or Hertz. To mimic the human ear's non-linear sensitivity and perception of different frequencies of sound, the spectral content is weighted. For example, environmental noise measurements are usually on an "A-weighted" scale, which places less weight on very low and very high frequencies in order to replicate human hearing sensitivity. The general range of human hearing is from 20 to 20,000 cycles per second, or Hertz; humans hear best in the range of 1,000 to 4,000 Hertz. A-weighting is a frequency-dependent adjustment of sound level used to approximate the natural range and sensitivity of the human auditory system. Table 3.7-1 provides a comparison of how the human ear perceives changes in loudness on the logarithmic scale.

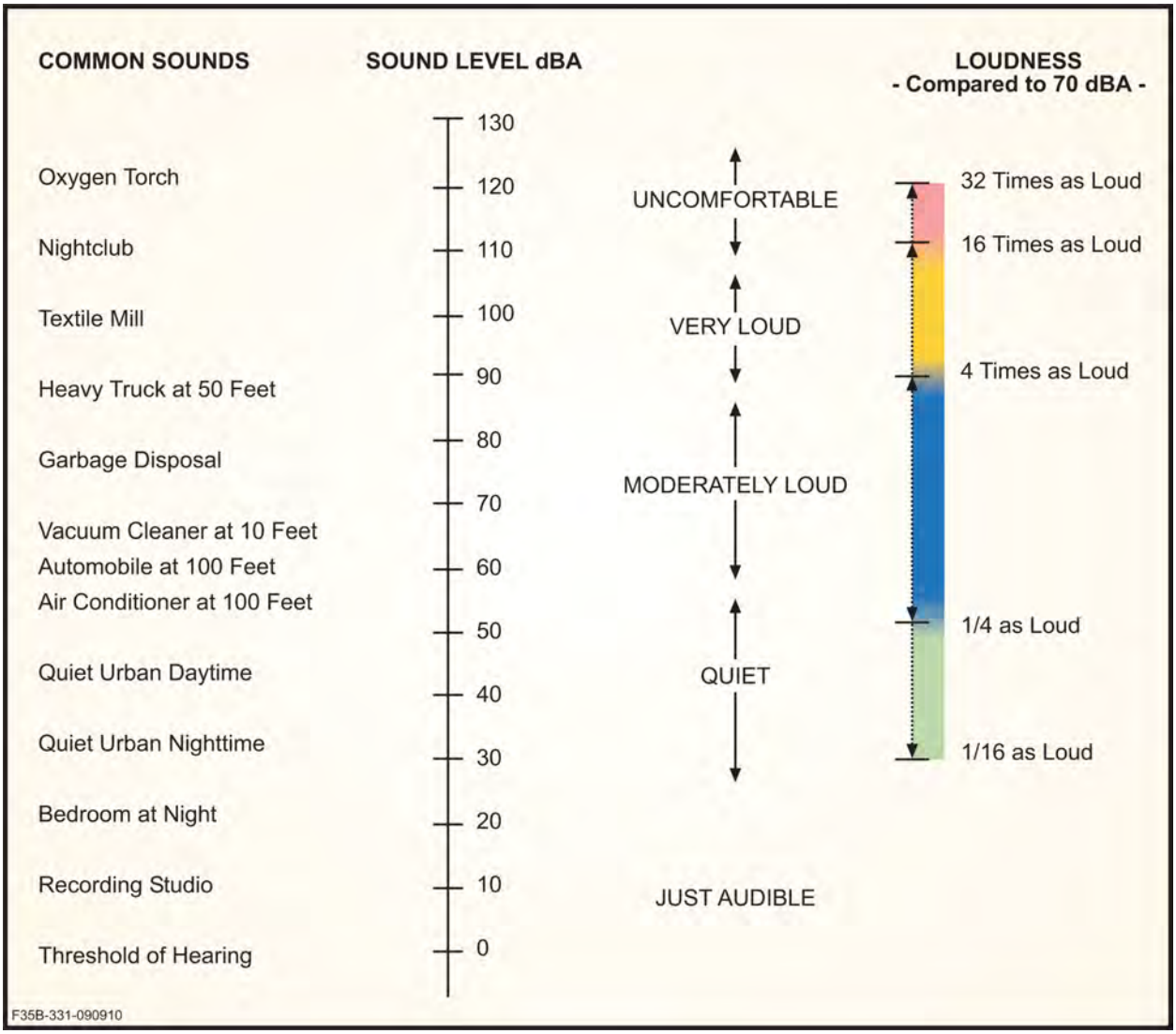
Table 3.7-1 Subjective Responses to Changes in A-Weighted Decibels

Change	*Change in Perceived Loudness*
3 dB	Barely perceptible
5 dB	Quite noticeable
10 dB	Dramatic – twice or half as loud
20 dB	Striking – fourfold change

Notes: dB = decibel

Figure 3.7-1 (Harris 1979 and FICAN 1997) provides a chart of A-weighted sound levels from typical noise sources. Some noise sources (e.g., garbage disposal, vacuum cleaner) are continuous sounds that maintain a constant sound level for some period of time. Other sources (e.g., automobile, heavy truck) are the maximum sound produced during an event like a vehicle pass-by. Other sounds (e.g., urban daytime, urban nighttime) are averages taken over extended periods of time. A variety of noise metrics have been developed to describe noise over different time periods, as discussed below.

Construction noise associated with the Proposed Action may vary with time but would typically be stationary, generating elevated noise levels over extended periods of each day of construction activity. A number of metrics can be used to describe such construction noise—from a particular individual activity to the cumulative noise effect of events over time, as discussed in Section 3.7.2, *Noise Metrics and Modeling*.



Sources Harris 1979; Federal Interagency Committee on Aviation Noise (FICAN) 1997.

Figure 3.7-1 A-Weighted Sound Levels from Typical Sources

3.7.2 Noise Metrics and Modeling

A metric is a system for measuring or quantifying a particular characteristic of a subject. Since noise is a complex physical phenomenon, different noise metrics are necessary to quantify the noise environment. The DoD Noise Working Group product, *Improving Aviation Noise Planning, Analysis and Public Communication with Supplemental Metrics* (DoD Noise Working Group, 2009), was used to provide background on noise effects to people, as well as methods for communicating noise results to the public, that apply to construction noise addressed in this EIS. The noise metrics used in this EIS are described in summary format below and in a more detailed manner in Appendix D. Equivalent Sound Level (L_{Aeq1hr}) and maximum sound level (L_{max}) represent the most applicable metrics for construction noise associated with the Proposed Action.

3.7.2.1 Equivalent Sound Level

L_{Aeq1hr}, measured in dB, is a cumulative noise metric that represents the average sound level (on a logarithmic basis) over a specified period of time—for example, an hour, a school day, daytime, nighttime, weekend, facility rush periods, or a full 24-hour day. This study utilizes a 1-hour period for both construction and traffic noise denoted as $L_{Aeq1hr.}$ As is typical for construction and traffic noise analysis, the 'A' refers to A-weighting, which accounts for the relative loudness perceived by the human ear.

3.7.2.2 Maximum Sound Level

The highest dBA level measured during a single event where the sound level changes value with time (e.g., a jack hammer that is used off and on during the day) is called the L_{max}. L_{max} defines the maximum sound level occurring for a fraction of a second. For aircraft or construction noise, the "fraction of a second" over which the maximum level is defined is generally 1/8 second (ANSI, 1988).

3.7.3 Noise Effects

An extensive amount of research has been conducted regarding noise effects, including annoyance, speech interference, classroom/learning interference, sleep disturbance, effects on recreation, potential hearing loss, and non-auditory health effects, as summarized in Appendix D.

3.7.4 Regulatory Setting

Under the Noise Control Act of 1972, the Occupational Safety and Health Administration established workplace standards for noise. If noise levels exceed these standards, employers are required to provide hearing protection equipment that will reduce sound levels to acceptable limits. See Appendix D for further details.

3.7.5 Affected Environment

This section describes existing noise levels and the nearest noise-sensitive receptors in the vicinity of the WNY along with their estimated existing noise exposure from current activities. Existing noise levels in the vicinity of WNY are typical of those normally associated with urban area land uses and activities. Response to noise varies, depending on the type and characteristics of the noise, distance between the noise source and whoever hears it (the receptor), receptor sensitivity, and time of day. A noise-sensitive receptor is defined as a land use where people involved in indoor or outdoor activities may be subject to stress or considerable interference from noise. Such locations or facilities often include residential dwellings, hospitals, nursing homes, educational facilities, and libraries.

3.7.5.1 Installation Noise Environment

The existing noise environment in the vicinity of the WNY includes road vehicle traffic along local streets and highways, aircraft operations (typically from Reagan National Airport), boat traffic on the Anacostia River, and other commercial or industrial operations typical of an urban environment. The major transportation routes in the area generate the greatest proportion of the existing noise. These major transportation routes include M Street SE (a six-lane road directly north of the WNY boundary), I-695 (an eight-lane highway 0.4 mile east of the WNY), and a Metrobus Local Route and several bus stops along M Street SE near the WNY. South of the WNY and across the Anacostia River, I-295 generates elevated noise levels at the adjacent Anacostia Park.

Noise measurements were taken in 2014 at residential locations several blocks to the north and northeast of the WNY. These locations included the Bachelor's Quarters at the Marine Corps Recreation Facility north of I-695 and the 900 block of Potomac Avenue SE adjacent to REC-2 and RES-4, as depicted in Figure 3.7-2. Both locations are adjacent to I-695 and the measured levels ranged from 68 to 69 dBA DNL (USDOT, 2014). In 2017, the Navy calculated L_{Aeq1hr} due to traffic activity for both midday and afternoon time periods on 4th Street between M and L Streets and on M Street south of the Van Ness Elementary School for existing traffic counts. L_{Aeq1hr} on 4th Street (a smaller side street) ranged from 58 to 61 dB while M Street (six-lane road) reached 67 to 68 dB L_{Aeq1hr}.

In reviewing the noise generated in an environment, it is appropriate to identify specific locations that could be sensitive to an increase in noise. For this analysis, 11 representative points of interest have been identified to correspond to potential noise-sensitive receptors in the vicinity of the WNY, as detailed in Table 3.7-2 and Figure 3.7-2. This EIS estimated existing L_{Aeq1hr} for noise-sensitive locations identified in Table 3.7-2 based upon the previous measured or calculated noise levels in nearby areas. Areas nearest to M Street SE, I-695, or I-295 (RES-1, RES-4, RES-5, SCH-1, REC-2, REC-3, and WOR-1) are assumed to be exposed to the greater existing noise ranging from 65 to 70 dB L_{Aeq1hr}. The remaining four locations (RES-2, RES-3, SCH-2, and REC-1) are assumed to be exposed to L_{Aeq1hr} ranging from 60 to 65 dB due to their locations along smaller streets away from the primary routes consistent with the 2017 Navy traffic noise calculations on 4th Street.

Table 3.7-2 Representative Noise-Sensitive Locations in the Vicinity of WNY Project Area

ID(1)	*Type*	*Name*	*Estimated Existing L_{Aeq1hr} (dB)(2)*
RES-1	Residential	M Street SE and 5th St SE Apartments	65-70
RES-2	Residential	L Street SE Apartments	60-65
RES-3	Residential	Potomac Avenue Apartments	60-65
RES-4	Residential	Potomac Avenue Townhouses	65-70
RES-5	Residential	10th Street Townhomes	65-70
SCH-1	School	Van Ness Elementary School(3)	65-70
SCH-2	School	Phase Family Learning Center Preschool	60-65
REC-1	Recreation	Lincoln Capper Pool and Park	60-65
REC-2	Recreation	Virginia Avenue Community Garden	65-70
REC-3	Recreation	Anacostia Park	65-70
WOR-1	Place of Worship	National Community Church	65-70

Notes: dB = decibel; L_{Aeq1hr} = Equivalent Sound Level.

1. RES = residential, SCH = school, WOR = place of worship, and REC = recreation.
2. Estimated L_{Aeq1hr} range based on proximity to high-capacity streets/highways, prior 2017 Navy calculated traffic noise levels, and measured noise levels (USDOT, 2014).
3. Van Ness Elementary School includes an outdoor playground.

Figure 3.7-2 Representative Noise-Sensitive Receptors in the Vicinity of the WNY

3.7.6 Environmental Consequences

Analysis of potential noise impacts includes estimating likely noise levels from the Proposed Action and determining potential effects to noise-sensitive receptor sites identified in noise Section 3.7.5, *Affected Environment*. Impact assessment methodology compares calculated noise levels anticipated to occur due to the action alternatives relative to the No Action Alternative and whether the result would significantly alter the noise environment in these noise-sensitive areas for both the short- and long-term time horizon. The study area for noise under each alternative includes the WNY, SEFC E Parcels, nearby noise-sensitive receptors, and areas adjacent to streets that would be affected by a change in transportation patterns.

The Federal Highway Administration Roadway Construction Noise Model was used to calculate noise levels at the 11 identified representative noise-sensitive receptors due to proposed construction equipment for all alternatives (FHWA, 2006). The loudest types of equipment that may be used have been modeled at the nearest location within each construction footprint to provide a "worst-case" scenario.

For determining noise impacts to humans, the analysis of temporary construction and traffic noise is discussed in terms of relative changes from the existing and No Action Alternative conditions and in the context of the noise environment type (i.e., urban environment). The Federal Highway Administration (FHWA) defines a permanent increase in traffic noise of 10 dB or greater to be significant so that standard is used in the analysis of long-term changes to noise from traffic in this study. Additional noise modeling details are described in Section 4 of Appendix D.

3.7.6.1 No Action Alternative

Under the No Action Alternative, existing noise levels would change because the developer would potentially renovate two existing buildings and construct two new buildings at a height of approximately 110 feet on the SEFC E Parcels. As the need for pile driving related to construction in SEFC E Parcels has not been determined, this analysis considers both non-pile driving construction equipment and the possible addition of pile driving. Construction equipment noise varies from 74 to 96 dBA when measured at 50 feet for all non-pile driving construction equipment, as listed in the Roadway Construction Noise Model manual of reference levels (FHWA, 2006). Both impact and vibratory pile driving equate to 101 dBA at 50 feet away. Table 3.7-3 presents the estimated resulting L_{max} and L_{Aeq1hr} at each noise-sensitive receptor for both types of construction activity based upon the distance to the nearest edge of the project area. Five locations (RES-1, RES-2, SCH-1, SCH-2, and REC-1) would experience an increase of greater than 10 dB L_{Aeq1hr} due to construction activity at the SEFC E Parcels. Although the overall timeline for the developer's project is 10 years, only a portion of that time would require the loudest construction equipment that would generate the noise levels presented in Table 3.7-3. The L_{max} generated during the periods of greatest construction equipment usage would range from 67 dB at locations such as the Potomac (RES-4) or 10th Street (RES-5) Townhouses to 90 dB at both M Street SE Apartments (RES-1) and Van Ness Elementary (SCH-1). The L_{max} generated by pile driving would be up to 5 dB greater than the general construction equipment noise but would only occur for several weeks, or potentially none if not required.

Table 3.7-3 Estimated Construction Noise Levels from Private Development at SEFC E Parcels Under No Action Alternative

ID	*Name*	*Estimated Existing L_{Aeq1hr} (dB)[1]*	*Distance to SEFC E Parcels[2]*	*Constr Equip L_{max}*	*Constr Equip L_{Aeq1hr}*	*Change in L_{Aeq1hr} from Baseline due to Constr Equip[4]*	*Pile Driving L_{max}*	*Pile Driving L_{Aeq1hr}*	*Change in L_{Aeq1hr} from Baseline due to Pile Driving[4]*
RES-1	M Street SE and 5th St SE Apartments	65-70	100 ft	90	86	+16 to +21	95	88	+18 to +23
RES-2	L Street SE Apartments	60-65	270 ft	82	78	+13 to +18	87	80	+15 to +20
RES-3	Potomac Avenue Apartments	60-65	1000 ft	70	66	+1 to +6	75	68	+3 to +8
RES-4	Potomac Avenue Townhouses	65-70	1500 ft	67	63	0	72	65	0
RES-5	10th Street Townhomes	65-70	1500 ft	67	63	0	72	65	0
SCH-1	Van Ness Elementary School	65-70	100 ft	90	86	+16 to +21	95	88	+18 to +23
SCH-2	Phase Family Learning Center Preschool	60-65	500 ft	76	72	+7 to +12	81	74	+9 to +14
REC-1	Lincoln Capper Pool and Park	60-65	200 ft	84	80	+15 to +20	89	82	+17 to +22
REC-2	Virginia Avenue Community Garden	65-70	1000 ft	70	66	0 to +1	75	68	0 to +3
REC-3	Anacostia Park[3]	65-70	3000 ft	67	63	0	72	65	0
WOR-1	National Community Church	65-70	700 ft	73	69	0 to +4	78	71	+1 to +6

Notes: dB = decibel; L_{Aeq1hr} = Equivalent Sound Level; L_{max} = Maximum Sound Level; REC = recreation; RES = residential; SCH = school; WOR = place of worship; Constr Equip = construction equipment.
1. Estimated L_{Aeq1hr} range based on proximity to high-capacity streets/highways, prior calculated traffic noise levels (Navy 2017), and measured noise levels (USDOT, 2014).
2. Distances greater than 1,000 ft rounded to nearest 500 ft increment.
3. Includes a 6 dB adjustment per ISO 9613-2 because propagation path primarily over water, which provides less attenuation.
4. Estimated L_{Aeq1hr} range based on proximity to high-capacity streets/highways, prior calculated traffic noise levels (Navy 2017), and measured noise levels (USDOT, 2014).

Once the construction activity is completed the numbers of vehicle trips to and from the newly developed SEFC E Parcels would increase by approximately 740,000 annually for the new residential units and offices, as described in Table 3.2-5. The largest proportional increase would be along M Street SE with some increases along 8th and 11th St. resulting in increases to noise from traffic at adjacent point of interest (POI) (RES-1, RES-3, RES-4, RES-5, SCH-1, SCH-2, and WOR-1).

Although the environment is urban with the associated urban noise levels, both the general construction and pile driving activity could increase the noise level by at least 10 dB at five noise-sensitive locations during construction. These noise levels would be typical of existing noise generated throughout the

southeast waterfront due to other ongoing revitalization efforts (Navy 2017, USDOT 2014). Although temporary construction-related noise level increases are generally not considered significant, potentially significant temporary noise impacts could occur at five noise-sensitive locations during construction at the SEFC E Parcels. As future land use would remain compatible with the existing mixed-use environment in the vicinity of WNY, no long-term or future permanent noise impacts would occur under the No Action Alternative.

3.7.6.2 Alternative 1A Land Acquisition through Land Exchange with Construction and Operation of Relocated Navy Museum on SEFC E Parcels (Preferred Alternative)

Noise impacts from land acquisition through land exchange under Alternative 1A are discussed below, followed by the impacts from construction and operation of a relocated Navy Museum on the SEFC E Parcels.

Impacts from Land Acquisition through Land Exchange

There would be no noise-related implications associated with the land exchange or relocation of existing functions from the WNY Southeast Corner. The following discussion focuses on noise impacts from future private development on the WNY Southeast Corner and noise generated by in-kind considerations at the WNY to be provided by the developer.

Private development on the WNY Southeast Corner would involve demolition and construction in the southeastern area of the WNY and along the Riverwalk. Depending upon local soils and structure design, construction in the vicinity of bodies of water can require pile driving. At this stage in the design process, it is not known whether pile driving would be required in the WNY southeast redevelopment area. Therefore, this analysis considers the potential for impact from both pile driving and other construction equipment types.

Table 3.7-4 details the resulting L_{max} and L_{Aeq1hr} noise levels at each of the 11 noise-sensitive receptors due to the proposed demolition and construction on the WNY Southeast Corner under Alternative 1. For non-pile driving equipment, L_{max} would range from 64 dB at M Street SE Apartments (RES-1) to 72 dB at both Potomac Avenue Townhouses (RES-4) and 10th Street Townhouses (RES-5), while L_{Aeq1hr} would range from 60 to 68 dB at the same locations. The largest increases in L_{Aeq1hr} would occur at Potomac Avenue Apartments (RES-3) and the Phase Family Learning Center Preschool (SCH-2), primarily due to lower estimated existing levels at those locations. However, L_{max} at both these locations would be similar to a passing vehicle when heard from the sidewalk (Cowan, 1994). The construction timeframe for development on the WNY Southeast Corner would occur in three phases over an estimated 10 years. However, only a portion of that time would involve exterior construction requiring the loudest types of construction equipment generating the highest noise levels presented in Table 3.7-4.

Table 3.7-4 also details estimated L_{max} and L_{Aeq1hr} that could result from pile driving activity, if required by soil conditions or structural design. The greatest L_{max} of 77 and L_{Aeq1hr} of 70 would occur at Potomac Avenue Townhouses (RES-4) and 10th Street Townhouses (RES-5) due to pile driving activity. Although the duration of pile driving, if it were to be required, is not known, pile driving is assumed to require several weeks during the foundation phase of construction.

Table 3.7-4 Construction Noise Levels for Private Development on WNY Southeast Corner

ID	*Name*	*Estimated Existing L_{Aeq1hr} (dB)[1]*	*Distance to Nearest Transferred WNY Area[2]*	*Constr Equip L_{max}*	*Constr Equip L_{Aeq1hr}*	*Change in L_{Aeq1hr} Baseline due to Constr Equip*	*Pile Driving L_{max}*	*Pile Driving L_{Aeq1hr}*	*Change in L_{Aeq1hr} from Baseline due to Pile Driving*
RES-1	M Street SE and 5th St SE Apartments	65-70	2,000 feet	64	60	0	69	62	0
RES-2	L Street SE Apartments	60-65	1,500 feet	67	63	0 to +3	72	65	0 to +5
RES-3	Potomac Avenue Apartments	60-65	1,000 feet	70	66	+1 to +6	75	68	+3 to +8
RES-4	Potomac Avenue Townhouses	65-70	850 feet	72	68	0 to +3	77	70	0 to +5
RES-5	10th Street Townhomes	65-70	850 feet	72	68	0 to +3	77	70	0 to +5
SCH-1	Van Ness Elementary School	65-70	2,000 feet	64	60	0	69	62	0
SCH-2	Phase Family Learning Center Preschool	60-65	1,000 feet	70	66	+1 to +6	75	68	+3 to +8
REC-1	Lincoln Capper Pool and Park	60-65	1,500 feet	67	63	0 to +3	72	65	0 to +5
REC-2	Virginia Avenue Community Garden	65-70	1,000 feet	70	66	0 to +1	75	68	0 to +3
REC-3	Anacostia Park[3]	65-70	1,000 feet	76	72	+2 to +7	81	74	+4 to +9
WOR-1	National Community Church	65-70	1,000 feet	70	66	0 to +1	75	68	0 to +3

Notes: dB = decibel; L_{Aeq1hr} = Equivalent Sound Level; L_{max} = Maximum Sound Level; WNY = Washington Navy Yard. RES = residential; SCH = school; WOR = place of worship; REC = recreation; Constr Equip = construction equipment.

1. Estimated L_{Aeq1hr} range based on proximity to high-capacity streets/highways, prior 2017 Navy calculated traffic noise levels, and measured noise levels (USDOT, 2014).
2. Distances greater than 1,000 feet rounded to nearest 500 feet increment.
3. Includes a 6 dB adjustment per ISO 9613-2 because propagation path primarily over water, which provides less attenuation.

During construction, there would be an increase in traffic congestion along the adjacent M Street corridor (originating from Isaac Hull Avenue) attributed to heavy construction vehicles accessing the construction site and construction workers commuting to the site for work during the Day-Night Average Sound Level daytime period (after 7 a.m. and before 10 p.m.). Other main corridors, 8th Street and 11th Street, may also experience increased congestion, as detailed in Section 3.2, *Transportation*. This would result in temporary increases in traffic noise at the following POI nearest those routes RES-1, RES-3, RES-4, RES-5, SCH-1, SCH-2, WOR-1.

Once the construction activity is completed the number of vehicle trips to and from the newly developed WNY Southeast Corner would be approximately 1.6 million annually. These additional vehicle trips would occur along the same corridors (M, 8th, and 11th St.) resulting in increases to traffic noise at

adjacent POI (RES-1, RES-3, RES-4, RES-5, SCH-1, SCH-2, and WOR-1). Continued development would occur in or near the WNY Southeast Corner that would increase traffic along 11th Street and the entrance and exit ramps to I-695, but that traffic noise would be farther from noise-sensitive areas and the additional traffic would be less than anticipated under the No Action Alternative.

Considering the urban environment, existing noise levels, and the distance of the WNY Southeast Corner from noise-sensitive locations, the estimated temporary increase in noise during construction would be 9 dB or less, which would not be a significant impact. Future land uses would remain compatible with the existing mixed use in the vicinity, so there would be no long-term changes to current noise-sensitive areas. Although new noise-sensitive land uses would be created, the action would be consistent with ongoing efforts to revitalize lands along the Anacostia River and the Comprehensive Plan for the National Capital District Elements. Therefore, implementation of Alternative 1A would not result in significant impacts within the ROI.

Impacts from Reuse of SEFC E Parcels with Construction and Operation of Relocated Navy Museum

Under Alternative 1A, construction equipment used during construction of a relocated National Museum of the United States Navy would be similar to construction equipment used under the No Action Alternative and would generate similar noise levels. Therefore, the resulting L_{max} and L_{Aeq1hr} at each noise-sensitive receptor for all construction activity for Alternative 1A would be consistent with the levels presented in Table 3.7-3 for the No Action Alternative. Five locations (RES-1, RES-2, SCH-1, SCH-2, and REC-1) would experience an increase of greater than 10 dB L_{Aeq1hr} due to construction activity at the SEFC E Parcels. Although the overall project timeline is 10 years, only up to 12 months of that period would result in elevated noise levels while exterior construction would be performed, and only a portion of that time would require the loudest construction equipment that would generate the noise levels presented in Table 3.7-3. The L_{max} generated by general construction equipment during that period are predicted to range from 72 dB at Potomac (RES-4) and 10th Street Townhouses (RES-5) up to 90 dB at both M Street SE Apartments (RES-1) and Van Ness Elementary (SCH-1). The L_{max} generated from pile driving would be up to 5 dB greater than the general construction equipment noise but would only occur for several weeks, or potentially none if not required.

Similar to the noise impacts described under the No Action Alternative, temporary noise impacts under Alternative 1A during construction could result in increases to noise levels at the noise-sensitive receptors nearest the project site along M Street SE (RES-1, RES-2, SCH-1, SCH-2, and REC-1) by at least 10 dBA. Although temporary construction-related noise level increases are generally not considered significant, potentially significant temporary noise impacts could occur at five noise-sensitive locations during construction of a relocated Navy Museum at the SEFC E Parcels. Future land uses would remain compatible with the existing mixed use in the vicinity, so there would be no long-term changes to noise-sensitive areas.

Once the construction of the relocated Navy Museum is completed, the number of vehicle trips to and from the museum would decrease by 590,000 annual trips when compared to No Action Alternative conditions. Considering the urban environment, existing noise levels, and that future land uses would remain compatible with the existing mixed use in the vicinity, there would be no long-term significant changes to current noise-sensitive areas.

Overall, Alternative 1A would not result in permanent significant impacts to noise-sensitive receptors from land acquisition through land exchange and reuse of the SEFC E Parcels with construction and

operation of a relocated Navy Museum. However, Alternative 1A could result in potentially significant temporary noise impacts at noise-sensitive locations during construction at the SEFC E Parcels.

3.7.6.3 Alternative 1B Land Acquisition through Land Exchange with Navy Administrative Development

Noise impacts from land acquisition through land exchange under Alternative 1B are discussed below, followed by the impacts of construction and operation of Navy administrative development on the SEFC E Parcels.

Impacts from Land Acquisition through Land Exchange

Under Alternative 1B, noise impacts from land acquisition through land exchange, which involves the exchange of the SEFC E Parcels for the WNY Southeast Corner, as well as private development and in-kind considerations on the WNY Southeast Corner, are the same as those described for Alternative 1A. Temporary construction noise would not be significant.

Impacts from Reuse of SEFC E Parcels with Construction and Operation of Navy Administrative Development

Under Alternative 1B, the SEFC E Parcels would be used for Navy administrative functions with renovation of two existing buildings and/or construction of two new administrative buildings. Noise impacts from construction of Navy administrative development would be similar to noise impacts described for the No Action Alternative and the relocated Navy Museum under Alternative 1A with similar noise levels to noise-sensitive locations along M Street SE (RES-1, RES-2, SCH-1, SCH-2, and REC-1), generating temporarily elevated noise levels during the construction phase. Although temporary construction-related noise level increases are generally not considered significant, potentially significant temporary noise impacts could occur at these five noise-sensitive locations during construction of a relocated Navy administrative development at the SEFC E Parcels. Upon completion of the Navy administrative development is completed, the number of vehicle trips to and from the SEFC E Parcels would decrease by 200,000 annual trips when compared to No Action Alternative conditions. Considering the urban environment, existing noise levels, and that future land uses would remain compatible with the existing mixed use in the vicinity, there would be no long-term significant changes to current noise-sensitive areas.

Overall, Alternative 1B would not result in permanent significant impacts to noise-sensitive receptors from land acquisition through land exchange and reuse of the SEFC E Parcels with construction and operation of Navy administrative development. However, Alternative 1B could result in potentially significant temporary noise impacts at noise-sensitive locations during construction at the SEFC E Parcels.

3.7.6.4 Alternative 1C Land Acquisition through Land Exchange with No Development on SEFC E Parcels

Impacts from Land Acquisition through Land Exchange

Under Alternative 1C, noise impacts from land acquisition thorough land exchange, which involves the exchange of the SEFC E Parcels for the WNY Southeast Corner, as well as private development and in-kind considerations on the WNY Southeast Corner, are the same as those described for Alternative 1A. Temporary construction noise would not be significant.

Impacts from No Development on SEFC E Parcels

Under Alternative 1C, no additional noise-generating development would occur at the SEFC E Parcels beyond relocating the fence line, making utility connections to maintain existing buildings and leaving the parcels in their current state.

Overall, Alternative 1C would not result in significant impacts to noise-sensitive receptors from land acquisition through land exchange and not developing the SEFC E Parcels.

3.7.6.5 Alternative 2A Direct Land Acquisition with Construction and Operation of Relocated Navy Museum on SEFC E Parcels

Impacts from Direct Land Acquisition

There would be no noise-related impacts associated with the direct land acquisition.

Impacts from Reuse of SEFC E Parcels with Construction and Operation of Relocated Navy Museum

Noise impacts from construction and operations of a relocated Navy Museum under Alternative 2A would be the same as noise impacts described for the relocated Navy Museum under Alternative 1A.

Overall, Alternative 2A would not result in permanent significant impacts to the noise environment from direct land acquisition and reuse of the SEFC E Parcels with construction and operation of a relocated Navy Museum. However, Alternative 2A could result in potentially significant temporary noise impacts at noise-sensitive locations during construction at the SEFC E Parcels.

3.7.6.6 Alternative 2B Direct Land Acquisition with Construction and Operation of Navy Administrative Development on SEFC E Parcels

Impacts from Direct Land Acquisition

There would be no noise-related impacts associated with the direct land acquisition.

Impacts from Reuse of SEFC E Parcels with Construction and Operation of Navy Administrative Development

Noise impacts from construction and operations of Navy administrative development under Alternative 2B would be the same as noise impacts described for Navy administrative development under Alternative 1B.

Overall, Alternative 2B would not result in permanent significant impacts to the noise environment from direct land acquisition and reuse of the SEFC E Parcels with construction and operation of Navy administrative development. However, Alternative 2B could result in potentially significant temporary noise impacts at noise-sensitive locations during construction at the SEFC E Parcels.

3.7.6.7 Alternative 2C Direct Land Acquisition with No Development on SEFC E Parcels

Impacts from Direct Land Acquisition

There would be no noise-related impacts associated with the direct land acquisition.

Impacts from No Development on SEFC E Parcels

Noise impacts from not developing the SEFC E Parcels under Alternative 2C would be the same as noise impacts described for not developing the SEFC E Parcels under Alternative 1C.

Overall, Alternative 2C would not result in significant impacts to the noise environment from direct land acquisition and not developing the SEFC E Parcels.

3.7.7 Summary of Impacts and Conclusions

Based on the analysis of potential impacts presented above, the No Action Alternative and action alternatives would not result in permanent significant impacts to noise-sensitive receptors from operation of constructed facilities. However, the No Action Alternative and Alternatives 1A, 1B, 2A, and 2B could have potentially significant temporary noise impacts at five noise-sensitive locations along M Street (RES-1, RES-2, SCH-1, SCH-2, and REC-1) during construction at the SEFC E Parcels. Alternatives 1A, 1B, and 1C could also have temporary but not significant noise impacts from construction at the WNY Southeast Corner, which is located farther from noise-sensitive locations on M Street. Alternative 2C would have no impact on the noise environment. Noise-sensitive receptors, such as Van Ness Elementary School, were added to the distribution list of the Draft EIS. The Navy is consulting with Van Ness Elementary School to identify potential mitigation measures if needed.

3.8 Air Quality

This discussion of air quality includes criteria pollutants and regulatory standards, hazardous air pollutants (HAPs), General Conformity, permitting, and greenhouse gases (GHGs). Air quality in a given location is defined by the concentration of various pollutants in the atmosphere. Many factors influence a region's air quality, including the type and amount of pollutants emitted into the atmosphere, the size and topography of the affected air basin, and the prevailing meteorological conditions. Most air pollutants originate from human-made sources, including mobile sources (e.g., cars, trucks, and buses), stationary sources (e.g., factories, refineries, and power plants), and indoor sources (e.g., some building materials and cleaning solvents). Natural sources such as wildfires also release air pollutants.

3.8.1 Regulatory Setting

3.8.1.1 Criteria Pollutants and National Ambient Air Quality Standards

Under the federal CAA, the USEPA establishes National Ambient Air Quality Standards (NAAQS) for common air pollutants known as "criteria pollutants." These criteria pollutants include carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ground-level ozone, 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). NAAQS are classified as primary or secondary. Primary standards protect against adverse health effects. Secondary standards protect against welfare effects, such as damage to crops, vegetation, and buildings.

Carbon monoxide, SO_2, Pb, and some particulates enter the atmosphere directly from emissions sources. Ozone, most NO_2, and some particulates form through atmospheric chemical reactions of their precursor pollutants that are influenced by weather, ultraviolet light, and other atmospheric processes. Ozone precursors include nitrogen oxides (NO_x) and VOCs. Nitrogen dioxide precursors include NO_x. Particulate matter precursors include NO_x, sulfur oxides (SO_x), VOCs, and ammonia.

Areas that are and have historically been in compliance with an ambient air quality standard are designated as attainment areas. Areas that violate an ambient 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.

The CAA requires states to develop a general plan to attain and maintain the NAAQS 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.

States also may establish their own ambient air quality standards that are more stringent than those set by federal law. The DOEE is responsible for implementing and enforcing state and federal air quality regulations in Washington, D.C. The DOEE has promulgated SIPs to bring the District into attainment of the NAAQS for ozone, CO, and $PM_{2.5}$ (DOEE, 2022).

3.8.1.2 Hazardous Air Pollutants

In addition to criteria pollutants, the CAA also gives the USEPA authority to regulate HAPs. HAPs have the potential to cause cancer or other adverse health effects in humans. Examples of HAPs include hydrocarbons such as benzene, certain metals including lead and mercury, and mineral fibers such as asbestos. The National Emission Standards for Hazardous Air Pollutants regulate HAP emissions from stationary sources (40 CFR part 63). USEPA regulates HAPs emitted from mobile sources by establishing engine exhaust and fuel standards.

3.8.1.3 General Conformity

The USEPA General Conformity Rule applies to federal actions occurring in nonattainment or maintenance areas whose total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The emissions thresholds that trigger requirements for a conformity determination are called *de minimis* levels. *De minimis* levels (in tons per year [tpy]) vary by pollutant and also depend on the severity of the nonattainment status for the air quality management area in question.

A conformity applicability analysis is the first step of a conformity evaluation and assesses if a federal action must be supported by a conformity determination. This is typically done by quantifying applicable direct and indirect emissions that are projected to result due to implementation of the federal action. Indirect emissions are emissions caused by the federal action that originate in the ROI but which can occur at a later time or in a different location from the action itself and are reasonably foreseeable. The federal agency can control and will maintain control over the indirect action due to a continuing program responsibility of the federal agency. Reasonably foreseeable emissions are projected future direct and indirect emissions that are identified at the time the conformity evaluation is performed. The location of such emissions is known, and the emissions are quantifiable, as described and documented by the federal agency based on its own information and after reviewing any information presented to the federal agency. If the results of the applicability analysis indicate that the total emissions would not exceed the *de minimis* emissions thresholds, then the conformity evaluation process is completed. *De minimis* threshold emissions are presented in Table 3.8-1.

Table 3.8-1 General Conformity *de minimis* levels

Pollutant	*Area Type*	*Tpy*
Ozone (VOC or NO_x)	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
Ozone (NO_x)	Marginal and moderate nonattainment inside an ozone transport region	100
	Maintenance	100
Ozone (VOC)	Marginal and moderate nonattainment inside an ozone transport region	50
	Maintenance within an ozone transport region	50
	Maintenance outside an ozone transport region	100
Carbon monoxide, SO_2 and NO_2	All nonattainment & maintenance	100
PM_{10}	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
$PM_{2.5}$ Direct emissions, SO_2, NO_x (unless determined not to be a significant precursor), VOC or ammonia (if determined to be significant precursors)	All nonattainment & maintenance	100
Pb	All nonattainment & maintenance	25

Notes: NO_2 = nitrogen dioxide; NO_x = nitrogen oxides; Pb = lead; PM_{10} = suspended particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 microns on diameter; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound.

The District is designated as a marginal nonattainment area for ozone and an area inside an ozone transport region, a maintenance area for CO, and unclassified/attainment for all other criteria pollutants (USEPA, 2022d). Therefore, a conformity applicability analysis is required of proposed ozone precursor emissions (VOCs and NOx) and primary emissions of CO. The applicable conformity *de minimis* emission thresholds for the area are 100 tons per year of CO and NO_x and 50 tons per year of VOCs.

3.8.1.4 Air Permitting

The CAA established the New Source Review (NSR) and Title V permitting programs for stationary air pollution sources. A permit is required when a stationary source has the potential to emit any pollutant regulated under the CAA in amounts equal to or exceeding specified thresholds. NSR is a preconstruction permitting program for major and minor air emission sources. Major NSR includes the Prevention of Significant Deterioration (PSD) permitting program for construction projects at major stationary sources located in NAAQS attainment areas. Minor NSR applies to construction projects that do not need major source permitting. The NSR process ensures that proposed emissions would conform to the SIP. Additional permitting requirements could apply to increases in stationary source GHG emissions for sources that already trigger NSR for criteria pollutant emissions.

The Title V program is an operating permit program applicable to all major air pollution sources and a limited number of minor sources. The Title V permitting program ensures that all air quality requirements applicable to an air pollution source are included under a single operating permit.

3.8.1.5 Greenhouse Gases

GHGs are air pollutants that trap heat in the atmosphere. GHG emissions occur from natural processes and human activities. Examples of GHGs from human activities include carbon dioxide (CO_2), methane, nitrous oxide, and fluorinated gases. The natural balance of GHGs in the atmosphere regulates the earth's temperature. Scientific evidence indicates a correlation between the worldwide rise of GHG emissions by humankind and increasing global temperatures over the past century. The climate change associated with this global warming is predicted to result in negative environmental and social consequences across the globe (U.S. Global Change Research Program, 2018).

Each GHG has a global warming potential, which is its ability to trap heat in the atmosphere. To account for global warming potential, GHG emissions are reported as a carbon dioxide equivalent (CO_2e). CO_2e emissions are commonly expressed in units of metric tons (MT). One MT equals 1,000 kilograms or 1.1 short tons (2,205 pounds).

The Navy takes proactive measures to reduce GHG emissions by decreasing the use of fossil fuels and increasing the use of alternative energy sources in accordance with the goals set by EOs, the Energy Policy Act of 2005, and Navy and DoD policies. In addition, the DoD conducts research on potential impacts from climate change and develops measures for installations to adapt to these threats (DoD Strategic Environmental Research and Development Program, 2020).

CEQ submitted draft guidance entitled *Draft National Environmental Policy Act [NEPA] Guidance on Consideration of Greenhouse Gas [GHG] Emissions* (June 21, 2019) (CEQ, 2019), which was rescinded by EO 13990 in January 2021. This Order directs CEQ to update its final guidance entitled *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews* (81 Federal Register 51866, August 5, 2016). This guidance suggests that agencies should use estimated GHG emissions in NEPA analyses to assess potential effects on climate change.

3.8.2 Affected Environment

The SEFC E Parcels are located within the National Capital Interstate Air Quality Control Region. This region includes the District of Columbia; Montgomery and Prince Georges counties in the state of Maryland; and Arlington, Fairfax, Loudoun, and Prince William counties in the state of Virginia. The District is designated as a marginal nonattainment area for ozone, a maintenance area for CO and unclassified/attainment for all other criteria pollutants. The SEFC E Parcels are also within the ozone transport region, which includes Connecticut; Delaware; Maine; Maryland; Massachusetts; New Hampshire; New Jersey; New York; Pennsylvania; Rhode Island; Vermont; Washington, D.C.; and portions of the Northern Virginia suburbs.

The most recent emissions inventory (year 2017) for the District and the counties of Arlington, Prince George, and Montgomery that surround the District are listed in Table 3.8-2 (USEPA, 2022e). The main sources of emissions within the region include on-road vehicles, non-road equipment, natural gas combustion, construction dust, and solvent usages.

The WNY operates under a Title V Operating Permit (Permit No. 007) that includes air quality requirements for fuel-burning equipment; external combustion sources (e.g., boilers and heaters); internal combustion engines (e.g., diesel emergency power generators); surface coating operations (e.g., painting for maintenance of marine vessels, aircraft, and facilities); gasoline-dispensing storage tanks; solvent degreasing for maintenance operations; abrasive blasting related to marine vessels and aircraft

maintenance; and woodworking shops for facility maintenance, packing, and shipping (Government of the District of Columbia, Department of Health, Environmental Health Administration, 2004). Applicable sources of air emissions associated with the Proposed Action would be added into the WNY Title V Operating Permit.

Table 3.8-2 Regional Emissions – Year 2017

Region	*Annual Emissions (tons/year)*							
	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*SO_x*	*VOCs*	*Pb*	*CO_2e (MT)*
Arlington County	14,256	2,606	1,325	432	175	2,968	468	1,106,955
Prince George County	72,589	10,523	7,738	2,715	741	16,760	829	5,991,178
Montgomery County	87,113	10,949	14,816	3,514	452	18,095	361	5,584,642
Washington, D.C.	27,782	4,801	3,768	1,042	86	5,949	28	2,495,205

Notes: CO = carbon monoxide; CO_2e = carbon dioxide equivalents; MT = metric tons; NO_x = nitrogen oxides; Pb = lead; PM_{10} = suspended particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter; SO_x = sulfur oxides; VOC = volatile organic compound.

Source: (USEPA, 2022e).

Table 3.8-3 summarizes the air emissions generated by operations at WNY in 2020 (WNY, 2021). Annual emissions in 2020 were substantially lower than the allowable levels identified in the WNY Title V Operating Permit.

Table 3.8-3 WNY Annual Emissions – Year 2020

Source Type	*Annual Emissions (tons/year)*						
	CO	*NO_x*	*PM*	*SO_x*	*VOCs*	*Total HAPs*	*CO_2e (MT)*
Boilers	7.12	8.49	0.65	0.10	0.47	0.16	9,321
Engines	0.83	2.00	0.06	0.18	0.14	0.00	128
Total Facility	**7.95**	**10.50**	**0.71**	**0.28**	**0.60**	**0.16**	**9,449**
Title V Permit Allowable Emissions	**99**	**49**	**99**	**99**	**49**	**NA**	**NA**

Notes: CO = carbon monoxide; CO_2e = carbon dioxide equivalents; HAP = hazardous air pollutant; MT = metric tons; NO_x = nitrogen oxides; PM = particulate matter; SO_x = sulfur oxides; VOC = volatile organic compound.

Source: (WNY, 2021).

3.8.3 Environmental Consequences

Effects on air quality are based on estimated emissions associated with the No Action Alternative and action alternatives. The ROI for assessing air quality impacts is the National Capital Interstate Air Quality Control Region, which encompasses the District.

This analysis evaluated potential NEPA air quality impacts with respect to relevant environmental information, including regulations, guidelines, and scientific documentation. In the case of criteria pollutants for which the ROI is in attainment of a NAAQS, the analysis used the USEPA PSD major source emissions threshold of 250 tpy of a criteria pollutant as an indicator of the significance of projected air quality impacts. This criterion was used because the PSD permitting process applies to areas that attain the NAAQS. If the net emissions increase for the Proposed Action or alternatives is below 250 tpy for an attainment pollutant, the air quality impact for that pollutant would not be significant. For criteria

pollutants for which the project region does not attain or is in maintenance of a NAAQS, the analysis compared the net increase in annual emissions from the Proposed Action and alternatives to the applicable pollutant conformity *de minimis* thresholds (see Table 3.8-1). Therefore, for the ROI within the National Capital Interstate Air Quality Control Region, the applicable NEPA analysis thresholds are:

- 50 tpy of VOCs
- 100 tpy of CO and NO_x
- 250 tpy of SO_x, PM_{10}, and $PM_{2.5}$

If the proposed emissions would exceed one of the above significance thresholds, further analysis was conducted to determine whether impacts would be significant. In such cases, if proposed emissions (1) would not contribute to an exceedance of an ambient air quality standard or (2) would conform to the approved SIP, then impacts would not be significant.

GHG emissions resulting from Alternatives 1 and 2 are quantified in this EIS to disclose the local net effects of the actions and for comparison across alternatives.

Under the No Action Alternative, the developer has approved plans to develop the SEFC E Parcels (GSA, 2020). Therefore, the analysis provided estimates of potential emissions that would occur from this development and subtracted these emissions from Alternative 1 to determine the net change in air quality impacts. The No Action Alternative in essence is the future NEPA baseline for the analysis.

Analysis Methodology

The Proposed Action would result in air quality impacts from construction and operational activities. The U.S. Air Force Air Conformity Applicability Model (ACAM) version 5.0.17b was used to estimate air emissions that would be generated by proposed construction and operational activities (Solutio Environmental, Inc., 2020). ACAM uses widely accepted emission calculation methods combined with default data that can be used if site-specific information is not available. In addition, emission factors from the USEPA MOVES3 model were applied to annual vehicle trips associated with Alternatives 1 and 2 to estimate emissions from operational vehicular traffic. Activity data developed for each alternative were used as inputs for ACAM. Appendix E includes ACAM reports and spreadsheets that detail the calculations of criteria pollutant emissions and GHGs.

Construction

Air quality impacts associated with proposed construction would occur from (1) combustive emissions generated by fossil fuel-powered equipment, trucks, and worker commuter vehicles, (2) fugitive dust emissions (PM_{10}/$PM_{2.5}$) from demolition and the operation of equipment on exposed soil, and (3) VOC emissions from the application of architectural coatings. The analysis estimated construction emissions for Alternatives 1 and 2 based on the development metrics presented in Section 2.3, *Alternatives Carried Forward for Analysis,* and associated emission source parameters identified by the ACAM.

The specific construction and development schedules for the alternatives are currently unknown. Therefore, to perform a reasonably conservative evaluation, the analysis assumed that construction of each alternative would commence in year 2024 and would finish by no later than the end of year 2027. This approach maximizes annual emissions, as it evaluated (1) a compressed construction schedule and (2) years when the average on-road and non-road fleets would have higher emissions compared to future fleets that would turn over to newer and lower-emitting equipment and vehicles. The analysis

assumed that construction of Alternatives 1C and 2C only would include installation of a fence around the SEFC E Parcels acquired by the Navy.

Inclusion of BMPs into proposed construction activities would reduce construction emissions. Section 2.6 presents construction BMPs proposed for air quality. The analysis included the effects of watering exposed soil surfaces, which would reduce fugitive dust emissions generated from the use of construction equipment on exposed soil by at least 50 percent from uncontrolled levels (Countess Environmental, 2006). Construction also would comply with the fugitive dust control requirements of DOEE Rule 20-605, *Control of Fugitive Dust*. In addition, to minimize the potential release of asbestos to the environment from renovation and/or demolition, the Navy would comply with the requirements of DOEE Rule 20-800, *Control of Asbestos*.

Operations

The analysis assumed that each alternative would operate at full capacity beginning in year 2028. This is a conservative assumption, as it is probable that it would take several more years for all components of Alternatives 1 and 2 to reach full operations. Operation of Alternatives 1A, 1B, 2A, and 2B and the No Action Alternative would generate air pollutant emissions from the following sources:

- On-road vehicle traffic generated by each land use. The analysis relied on vehicle trip rates developed for the EIS traffic study to estimate emissions from vehicular traffic generated from the full buildout of each alternative. Estimates of the operation of the Navy Museum or the administrative facilities on the SEFC E Parcels assumed generation of 151,970 or 541,840 annual vehicle trips, respectively. Operation of the proposed private development in the WNY Southeast Corner under Alternatives 1A through 1C would generate 1,614,340 annual vehicle trips. Lastly, operation of the SEFC E Parcels under the No Action Alternative would generate 739,830 annual vehicle trips.
- Emergency diesel-powered electric generators.
- Natural gas usage for space and water heating in buildings.

The analysis assumed that operations of Alternatives 1C and 2C would not generate any substantial Navy operational emissions.

Inclusion of BMPs would reduce operations emissions. Proposed Navy buildings under Alternatives 1A, 1B, 2A, and 2B would be designed to achieve Leadership in Energy and Environmental Design (LEED) silver certification (See Section 2.6, *Best Management Practices Included in the Proposed Action*), which would minimize energy usage and resulting criteria pollutant and GHG emissions. The analysis did not quantify emission reductions due to the implementation of this operational BMP.

3.8.3.1 No Action Alternative

Table 3.8-4 presents estimates of annual and total air emissions that would be generated from construction under the No Action Alternative. These data show that annual emissions from the No Action Alternative would be below the applicable annual significance thresholds for all pollutants. Therefore, construction under the No Action Alternative would not result in significant air quality impacts.

Table 3.8-5 presents estimates of annual air emissions that would occur from operations within the SEFC E Parcels as part of the No Action Alternative. Vehicle trips generated by the office and residential land

uses would be the overwhelming contributor to all pollutant emissions except NO_x. The combustion of natural gas for space and water heating would be the largest contributor to NO_x emissions. These data show that annual emissions under the No Action Alternative would be below the applicable annual significance thresholds for all pollutants. Therefore, operation activities under the No Action Alternative would not result in significant air quality impacts.

Table 3.8-4 Annual Construction Emissions for the No Action Alternative (tons/year)

Year	*Annual Emissions (tons/year)*						
	CO	***NO_x***	***PM_{10}***	***$PM_{2.5}$***	***SO_x***	***VOCs***	***CO_2e (MT)***
2024	4.86	3.87	4.42	0.15	0.01	0.63	1,169
2025	5.12	3.76	0.14	0.14	0.01	1.11	1,014
2026	4.39	3.15	0.12	0.12	0.01	8.31	838
Total Construction Emissions	**14.37**	**10.78**	**4.68**	**0.41**	**0.03**	**10.05**	**3,021**
Significance Thresholds	**100**	**100**	**250**	**250**	**250**	**50**	**NA**

Notes: CO = carbon monoxide; CO_2e = carbon dioxide equivalents; MT = metric tons; NA = not applicable; NO_x = nitrogen oxides; PM_{10} = suspended particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter; SO_x = sulfur oxides; VOC = volatile organic compound.

Table 3.8-5 Annual Operations Emissions for the No Action Alternative (tons/year) – Full Buildout

Land Use Type	*Annual Emissions (tons/year)*						
	CO	***NO_x***	***PM_{10}***	***$PM_{2.5}$***	***SO_x***	***VOCs***	***CO_2e (MT)***
Office Building	10.69	1.85	0.38	0.19	0.02	1.01	3,330
Residential	7.50	3.47	0.40	0.30	0.04	0.66	4,405
Total Annual Emissions	**18.19**	**5.32**	**0.78**	**0.49**	**0.06**	**1.67**	**7,735**
Significance Thresholds	**100**	**100**	**250**	**250**	**250**	**50**	**NA**

Notes: CO = carbon monoxide; CO_2e = carbon dioxide equivalents; MT = metric tons; NA = not applicable; NO_x = nitrogen oxides; PM_{10} = suspended particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter; SO_x = sulfur oxides; VOC = volatile organic compound.

3.8.3.2 Alternative 1A Land Acquisition through Land Exchange with Construction and Operation of Relocated Navy Museum on SEFC E Parcels (Preferred Alternative)

Under Alternative 1A, impacts to air quality from land acquisition through land exchange are discussed below together with impacts from construction and operation of a relocated Navy Museum on the SEFC E Parcels.

Table 3.8-6 presents estimates of annual and total air emissions that would occur from construction of Alternative 1A. These data show that annual emissions would be below the applicable annual significance thresholds for all pollutants. Subtracting annual construction emissions estimated for the No Action Alternative from annual construction emissions estimated from Alternative 1A would result in even smaller incremental increases in emissions. Therefore, construction under Alternative 1A would not result in significant air quality impacts.

Table 3.8-6 Annual Construction Emissions for Alternative 1A (tons/year)

Scenario/Year	*Annual Emissions (tons/year)*						
	CO	***NO_x***	***PM_{10}***	***$PM_{2.5}$***	***SO_x***	***VOCs***	***CO_2e (MT)***
Navy Museum in SEFC E Parcels							
2024	5.44	3.94	2.24	0.15	0.01	0.69	1,138
2025	5.62	3.90	0.17	0.14	0.01	1.43	1,102
2026	4.75	3.34	0.13	0.13	0.01	1.36	903
Subtotal	**15.81**	**11.18**	**2.54**	**0.42**	**0.03**	**3.48**	**3,143**
Private Development in WNY SE Corner							
2024	6.58	4.76	5.71	0.18	0.02	0.84	1,397
2025	7.25	5.09	0.19	0.19	0.02	4.36	1,416
2026	6.21	4.46	0.16	0.16	0.01	9.88	1,204
2027	4.68	3.36	0.13	0.13	0.01	6.30	894
Subtotal	**24.72**	**17.67**	**6.19**	**0.66**	**0.06**	**21.38**	**4,911**
In-Kind Development							
2024	2.34	1.80	0.63	0.07	0.01	0.29	496
2025	2.04	1.55	0.06	0.06	0.01	1.20	413
Subtotal	**4.37**	**3.35**	**0.69**	**0.13**	**0.02**	**1.49**	**909**
Total Year 2024	**14.36**	**10.49**	**8.58**	**0.40**	**0.04**	**1.82**	**3,032**
Total Year 2025	**14.90**	**10.54**	**0.42**	**0.39**	**0.04**	**6.99**	**2,931**
Total Year 2026	**10.96**	**7.80**	**0.30**	**0.29**	**0.02**	**11.24**	**2,106**
Total Year 2027	**4.68**	**3.36**	**0.13**	**0.13**	**0.01**	**6.30**	**894**
Total Construction Emissions	**44.90**	**32.20**	**9.42**	**1.21**	**0.11**	**26.35**	**8,963**
NAA Total Construction Emissions	**14.37**	**10.78**	**4.68**	**0.41**	**0.03**	**10.05**	**3,021**
NAA Construction - Annual Minimum	**4.39**	**3.15**	**0.12**	**0.12**	**0.01**	**0.63**	**838**
Alternative 1A Maximum Net Change [(1)]	**10.51**	**7.39**	**8.46**	**0.28**	**0.03**	**10.61**	**2,194**
Significance Thresholds	**100**	**100**	**250**	**250**	**250**	**50**	**NA**

Notes: CO = carbon monoxide; CO_2e = carbon dioxide equivalents; MT = metric tons; NA = not applicable; NAA = No Action Alternative; NO_x = nitrogen oxides; PM_{10} = suspended particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter; SO_x = sulfur oxides; VOC = volatile organic compound.

1. Equal to the maximum annual construction emissions from Alternative 1A minus the No Action Alternative minimum annual construction emissions.

Table 3.8-7 presents estimates of annual air emissions that would occur from operations of the full buildout of Alternative 1A. Vehicle trips generated by the Navy Museum and private development in the WNY Southeast Corner would be the largest contributor to emissions of CO, PM_{10}, and VOCs. The combustion of natural gas for space and water heating would be the largest contributor to NOx, $PM_{2.5}$, and SO_2. The data in Table 3.8-7 show that the annual net change in emissions for Alternative 1A (Alternative 1A minus the No Action Alternative) would be below the applicable annual significance thresholds for all pollutants. Therefore, operations under Alternative 1A would not result in significant air quality impacts.

Table 3.8-7 Annual Operations Emissions for Alternative 1A (tons/year) – Full Buildout

Source Type	*Annual Emissions (tons/year)*						
	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*SO_x*	*VOCs*	*CO_2e (MT)*
Navy Museum - SEFC E Parcels							
Space and Water Heating	1.82	2.16	0.16	0.16	0.01	0.12	2,368
Emergency Generators	0.05	0.07	0.02	0.02	0.01	0.02	7
Commuter Vehicles	6.22	0.18	0.17	0.04	0.01	0.61	1,076
Subtotal	**8.09**	**2.41**	**0.35**	**0.22**	**0.03**	**0.75**	**3,452**
Private Development in WNY SE Corner							
Space and Water Heating	7.80	9.29	0.71	0.71	0.06	0.51	10,165
Emergency Generators	0.10	0.15	0.03	0.03	0.03	0.04	16
Commuter Vehicles	26.77	0.77	0.72	0.18	0.04	2.61	4,634
Subtotal	**34.67**	**10.21**	**1.46**	**0.92**	**0.13**	**3.16**	**14,815**
In-Kind Development							
Emergency Generators	0.02	0.02	0.01	0.01	0.00	0.01	3
Subtotal	**0.02**	**0.02**	**0.01**	**0.01**	**0.00**	**0.01**	**3**
Alternative 1A Total Operations	**42.78**	**12.64**	**1.82**	**1.15**	**0.16**	**3.92**	**18,269**
NAA Total Operations	**18.19**	**5.32**	**0.78**	**0.49**	**0.06**	**1.67**	**7,735**
Alternative 1A Net Change (1)	**24.59**	**7.32**	**1.04**	**0.66**	**0.10**	**2.25**	**10,535**
Significance Thresholds	**100**	**100**	**250**	**250**	**250**	**50**	**NA**

Notes: CO = carbon monoxide; CO_2e = carbon dioxide equivalents; MT = metric tons; NAA = No Action Alternative; NA = not applicable; NO_x = nitrogen oxides; PM_{10} = suspended particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter; SO_x = sulfur oxides; VOC = volatile organic compound.

1. Equal to the Alternative 1A minus the No Action Alternative total annual emissions.

General Conformity

Tables 3.8-6 and 3.8-7 present estimates of annual conformity-related emissions that would occur from construction and operation of Alternative 1A (the Preferred Alternative). These data show that the annual emissions from Alternative 1A would be below the applicable conformity *de minimis* thresholds for all pollutants. Therefore, Alternative 1A would not be subject to the requirements of the General Conformity Rule. Appendix E includes a Record of Non-Applicability for the alternative.

Greenhouse Gases

Implementation of Alternative 1A would emit GHGs due to the combustion of fossil fuels. Proposed construction would result in a maximum annual net increase of 2,194 MT of CO_2e. The annual net change in emissions from full buildout operations under Alternative 1A would amount to 10,535 MT of CO_2e. Natural gas-fired space and water heating would contribute about twice as much to annual CO_2e emissions compared to vehicle trips generated from operation of the Navy Museum and private development in the WNY Southeast Corner.

3.8.3.3 Alternative 1B Land Acquisition through Land Exchange with Navy Administrative Development

Under Alternative 1B, impacts to air quality from land acquisition through land exchange are discussed below together with impacts from Navy administrative development on the SEFC E Parcels. Table 3.8-8 presents estimates of annual and total air emissions that would occur from construction of Alternative 1B. These data show that annual emissions during this period would be below the applicable annual significance thresholds for all pollutants. Subtracting annual construction emissions estimated for the No Action Alternative from annual construction emissions due to Alternative 1B would result in even smaller incremental increases in emissions due to construction of Alternative 1B. Therefore, construction from Alternative 1B would not result in significant air quality impacts.

Table 3.8-8 Annual Construction Emissions for Alternative 1B (tons/year)

Year	*Annual Emissions (tons/year)*						
	CO	***NO_x***	***PM_{10}***	***$PM_{2.5}$***	***SO_x***	***VOCs***	***CO_2e (MT)***
Administration Offices in SEFC E Parcels							
2024	5.31	3.83	2.38	0.14	0.01	0.67	1,102
2025	4.85	3.48	0.13	0.13	0.01	1.48	954
2026	2.55	1.84	0.07	0.07	0.01	0.83	481
Subtotal	**12.71**	**9.15**	**2.58**	**0.34**	**0.03**	**2.98**	**2,536**
Private Development in WNY SE Corner							
2024	6.58	4.76	5.71	0.18	0.02	0.84	1,397
2025	7.25	5.09	0.19	0.19	0.02	4.36	1,416
2026	6.21	4.46	0.16	0.16	0.01	9.88	1,204
2027	4.68	3.36	0.13	0.13	0.01	6.30	894
Subtotal	**24.72**	**17.67**	**6.19**	**0.66**	**0.06**	**21.38**	**4,911**
In-Kind Development							
2024	2.34	1.80	0.63	0.07	0.01	0.29	496
2025	2.04	1.55	0.06	0.06	0.01	1.20	413
Subtotal	**4.37**	**3.35**	**0.69**	**0.13**	**0.02**	**1.49**	**909**
Total Year 2024	**14.23**	**10.39**	**8.72**	**0.39**	**0.04**	**1.80**	**2,995**
Total Year 2025	**14.13**	**10.12**	**0.38**	**0.38**	**0.04**	**7.04**	**2,783**
Total Year 2026	**8.76**	**6.30**	**0.23**	**0.23**	**0.02**	**10.71**	**1,685**
Total Year 2027	**4.68**	**3.36**	**0.13**	**0.13**	**0.01**	**6.30**	**895**
Total Construction Emissions	**41.80**	**30.17**	**9.46**	**1.13**	**0.11**	**25.85**	**8,356**
NAA Total Construction Emissions	**14.37**	**10.78**	**4.68**	**0.41**	**0.03**	**10.05**	**3,021**
NAA Construction - Annual Minimum	**4.39**	**3.15**	**0.12**	**0.12**	**0.01**	**0.63**	**838**
Alternative 1B Maximum Net Change (1)	**9.84**	**7.24**	**8.60**	**0.27**	**0.03**	**10.08**	**2,157**
Significance Thresholds	**100**	**100**	**250**	**250**	**250**	**50**	**NA**

Notes: CO = carbon monoxide; CO_2e = carbon dioxide equivalents; MT = metric tons; NAA = No Action Alternative; NA = not applicable; NO_x = nitrogen oxides; PM_{10} = suspended particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter; SO_x = sulfur oxides; VOC = volatile organic compound.

1. Equal to the maximum annual construction emissions from Alternative 1B minus the No Action Alternative minimum annual construction emissions.

Table 3.8-9 presents estimates of annual air emissions that would occur from operations of the full buildout of Alternative 1B. Vehicle trips generated by the Navy administrative facility and private development in the WNY Southeast Corner would be the largest contributor to emissions of CO, $PM_{10,}$ and VOCs. For the Navy administration facilities, it was assumed that 20 percent of the workers would relocate from buildings at the WNY Southeast Corner and the rest would comprise new vehicle trips. The combustion of natural gas for space and water heating would be the largest contributor to $NO_{x,}$ $PM_{2.5}$, and SO_2 emissions. The data in Table 3.8-9 show that the annual net change in emissions for Alternative 1B would be below the applicable annual significance thresholds for all pollutants. Therefore, operation under Alternative 1B would not result in significant air quality impacts.

Table 3.8-9 Annual Operations Emissions for Alternative 1B (tons/year) – Full Buildout

Source Type	*Annual Emissions (tons/year)*						
	CO	***NO_x***	***PM_{10}***	***$PM_{2.5}$***	***SO_x***	***VOCs***	***CO_2e (MT)***
Administration Offices in SEFC E Parcels							
Space and Water Heating	2.79	3.32	0.25	0.25	0.02	0.18	3,638
Emergency Generators	0.05	0.07	0.02	0.02	0.01	0.02	7
Commuter Vehicles	13.30	0.38	0.36	0.09	0.02	1.30	2,303
Subtotal	**16.14**	**3.77**	**0.63**	**0.36**	**0.05**	**1.50**	**5,948**
Private Development in WNY SE Corner							
Space and Water Heating	7.80	9.29	0.71	0.71	0.06	0.51	10,165
Emergency Generators	0.10	0.15	0.03	0.03	0.03	0.04	16
Commuter Vehicles	26.77	0.77	0.72	0.18	0.04	2.61	4,634
Subtotal	**34.67**	**10.21**	**1.46**	**0.92**	**0.13**	**3.16**	**14,815**
In-Kind Development							
Emergency Generators	0.02	0.02	0.01	0.01	0.00	0.01	3
Subtotal	**0.02**	**0.02**	**0.01**	**0.01**	**0.00**	**0.01**	**3**
Alternative 1B Total Operations	**50.83**	**14.00**	**2.10**	**1.29**	**0.18**	**4.67**	**20,765**
No Action Alternative Total Operations	**18.19**	**5.32**	**0.71**	**0.49**	**0.06**	**1.67**	**7,735**
Alternative 1B Net Change [(1)]	**32.64**	**8.68**	**1.32**	**0.80**	**0.12**	**3.00**	**13,031**
Significance Thresholds	**100**	**100**	**250**	**250**	**250**	**50**	**NA**

Notes: CO = carbon monoxide; CO_2e = carbon dioxide equivalents; MT = metric tons; NA = not applicable; NO_x = nitrogen oxides; PM_{10} = suspended particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter; SO_x = sulfur oxides; VOC = volatile organic compound.

1. Equal to the Alternative 1B minus the No Action Alternative total annual emissions.

Greenhouse Gases

Implementation of Alternative 1B would emit GHGs due to the combustion of fossil fuels. Proposed construction would result in a maximum annual net increase of 2,157 MT of CO_2e. The annual net change in emissions from operation under Alternative 1B would amount to 13,031 MT of CO_2e. Natural gas-fired space and water heating would contribute about twice as much to annual CO_2e emissions compared to vehicle trips generated from operation of the Navy administrative facilities and private development in the WNY Southeast Corner.

3.8.3.4 Alternative 1C Land Acquisition through Land Exchange with No Development on SEFC E Parcels

Under Alternative 1C, impacts to air quality from land acquisition through land exchange are discussed below together with impacts from no development on the SEFC E Parcels. Construction of Alternative 1C would require minor activities to install a perimeter fence around the SEFC E Parcels, in addition to construction of the proposed private development on the WNY Southeast Corner and in-kind-considerations at the WNY. Table 3.8-10 presents estimates of annual and total air emissions that would occur from construction of Alternative 1C. These data show that annual emissions during this period would be below the applicable annual significance thresholds for all pollutants. Subtracting annual construction emissions estimated for the No Action Alternative from annual construction emissions from Alternative 1C would result in even smaller incremental increases in emissions associated with construction of Alternative 1C. Therefore, construction from Alternative 1C would not result in significant air quality impacts.

Table 3.8-10 Annual Construction Emissions for Alternative 1C (tons/year)

Year	*Annual Emissions (tons/year)*						
	CO	*NO_x*	*PM_{10}*	*$PM_{2.5}$*	*SO_x*	*VOCs*	*CO_2e (MT)*
Install Perimeter Fence - SEFC E Parcels							
2024	0.18	0.11	0.01	0.00	0.00	0.02	34
Subtotal	**0.18**	**0.11**	**0.01**	**0.00**	**0.00**	**0.02**	**34**
Private Development in WNY SE Corner							
2024	6.58	4.76	5.71	0.18	0.02	0.84	1,397
2025	7.25	5.09	0.19	0.19	0.02	4.36	1,416
2026	6.21	4.46	0.16	0.16	0.01	9.88	1,204
2027	4.68	3.36	0.13	0.13	0.01	6.30	894
Subtotal	**24.72**	**17.67**	**6.19**	**0.66**	**0.06**	**21.38**	**4,911**
In-Kind Development							
2024	2.34	1.80	0.63	0.07	0.01	0.29	496
2025	2.04	1.55	0.06	0.06	0.01	1.20	413
Subtotal	**4.37**	**3.35**	**0.69**	**0.13**	**0.02**	**1.49**	**909**
Total Year 2024	**9.10**	**6.67**	**6.35**	**0.25**	**0.03**	**1.15**	**1,927**
Total Year 2025	**9.28**	**6.64**	**0.25**	**0.25**	**0.03**	**5.56**	**1,829**
Total Year 2026	**6.21**	**4.46**	**0.16**	**0.16**	**0.01**	**9.8**	**1,204**
Total Year 2027	**4.68**	**3.36**	**0.13**	**0.13**	**0.01**	**6.30**	**894**
Total Construction Emissions	**29.27**	**21.13**	**6.89**	**0.79**	**0.08**	**22.89**	**5,854**
NAA Total Construction Emissions	**14.37**	**10.78**	**4.68**	**0.41**	**0.03**	**10.05**	**3,021**
NAA Construction - Annual Minimum	**4.39**	**3.15**	**0.12**	**0.12**	**0.01**	**0.63**	**838**
Alternative 1C Maximum Net Change [(1)]	**4.89**	**3.52**	**6.23**	**0.13**	**0.02**	**9.25**	**1,089**
Significance Thresholds	**100**	**100**	**250**	**250**	**250**	**50**	**NA**

Notes: CO = carbon monoxide; CO_2e = carbon dioxide equivalents; MT = metric tons; NAA = No Action Alternative; NA = not applicable; NO_x = nitrogen oxides; PM_{10} = suspended particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter; SO_x = sulfur oxides; VOC = volatile organic compound.
1. Equal to the maximum annual construction emissions from Alternative 1C minus the No Action Alternative minimum annual construction emissions.

Table 3.8-11 presents estimates of annual air emissions that would occur from operations of the full buildout of Alternative 1C. Vehicle trips generated by the administrative facilities and private development in the WNY Southeast Corner would be the largest contributor to emissions of CO, PM_{10}, and VOCs. The combustion of natural gas for space and water heating would be the largest contributor of NO_x, $PM_{2.5,}$ and SO_2 emissions. The data in Table 3.8-11 show that the annual net change in emissions for Alternative 1C would be below the applicable annual significance thresholds for all pollutants. Therefore, operation under Alternative 1C would not result in significant air quality impacts.

Table 3.8-11 Annual Operations Emissions for Alternative 1C (tons/year) – Full Buildout

Source Type	*Annual Emissions (tons/year)*						
	CO	***NO_x***	***PM_{10}***	***$PM_{2.5}$***	***SO_x***	***VOCs***	***CO_2e (MT)***
Private Development in WNY SE Corner							
Space and Water Heating	7.80	9.29	0.71	0.71	0.06	0.51	10,165
Emergency Generators	0.10	0.15	0.03	0.03	0.03	0.04	16
Commuter Vehicles	26.77	0.77	0.72	0.18	0.04	2.61	4,634
Subtotal	**34.67**	**10.21**	**1.46**	**0.96**	**0.13**	**3.17**	**14,817**
In-Kind Development							
Emergency Generators	0.02	0.02	0.01	0.01	0.00	0.01	3
Subtotal	**0.02**	**0.02**	**0.01**	**0.01**	**0.00**	**0.01**	**3**
Alternative 1C Total Operations	**34.69**	**10.23**	**1.47**	**0.93**	**0.13**	**3.17**	**14,817**
No Action Alternative Total Operations	**18.19**	**5.32**	**0.78**	**0.49**	**0.06**	**1.67**	**7,735**
Alternative 1C Net Change [(1)]	**16.50**	**4.91**	**0.69**	**0.44**	**0.07**	**1.50**	**7,083**
Significance Thresholds	100	100	250	250	250	50	NA

Notes: CO = carbon monoxide; CO_2e = carbon dioxide equivalents; MT = metric tons; NA = not applicable; NO_x = nitrogen oxides; PM_{10} = suspended particulate matter less than or equal to 10 micrometers in diameter; $PM_{2.5}$ = fine particulate matter less than or equal to 2.5 micrometers in diameter; SO_x = sulfur oxides; VOC = volatile organic compound.

1. Equal to the Alternative 1C minus the No Action Alternative total annual emissions.

3.8.3.5 Alternative 2A Direct Land Acquisition with Construction and Operation of Relocated Navy Museum on SEFC E Parcels

Under Alternative 2A, impacts to air quality are evaluated for the reuse option on the SEFC E Parcels with the Navy Museum. Table 3.8-6 shows that air emissions generated from construction of the Navy Museum in the SEFC E Parcels would be substantially below the applicable annual significance thresholds for all pollutants. Review of Table 3.8-7 shows that the Navy Museum would emit fewer emissions during operations compared to the No Action Alternative. These negative net changes in operations emissions for Alternative 2A would be below the applicable annual significance thresholds for all pollutants. Therefore, construction and operation of Alternative 2A would not result in significant air quality impacts.

3.8.3.6 Alternative 2B Direct Land Acquisition with Construction and Operation of Navy Administrative Development on SEFC E Parcels

Under Alternative 2B, impacts to air quality are evaluated for the reuse option on the SEFC E Parcels with the Navy administrative development. Table 3.8-8 shows that air emissions generated from construction of the Navy administrative facilities in the SEFC E Parcels would be well below the

applicable annual significance thresholds for all pollutants. Table 3.8-9 shows that the Navy administrative facilities would emit slightly fewer emissions during operations compared to the No Action Alternative. These negative net changes in operations emissions for Alternative 2B would be below the applicable annual significance thresholds for all pollutants. Therefore, construction and operation of Alternative 2B would not result in significant air quality impacts.

3.8.3.7 Alternative 2C Direct Land Acquisition with No Development on SEFC E Parcels

Under Alternative 2CB, impacts to air quality are evaluated for the reuse option on the SEFC E Parcels with the no development. As shown in Table 3.8-10, installation of a perimeter fence around the SEFC E Parcels would generate minor amounts of emissions that would be well below the applicable annual significance thresholds for all pollutants. Operation of Alternative 2C would not result in changes to air emissions. Therefore, construction and operation of Alternative 2C would not result in significant air quality impacts.

3.8.4 Summary of Impacts and Conclusions

Based on the analysis of potential impacts presented above, there would be no significant air quality impacts on the surrounding environment resulting from implementation of the No Action Alternative or under Alternatives 1A, 1B, or 1C or 2A, 2B, or 2C.

3.9 Socioeconomics

This section discusses population, employment and income, schools, housing occupancy status, economic activity, tax revenue, and related data providing key insights into the socioeconomic conditions that might be affected by the proposed action.

3.9.1 Regulatory Setting

Socioeconomic data shown in this section are presented at the U.S. Census Bureau Tract (census tract), city, and national levels to characterize baseline socioeconomic conditions in the context of local, regional, and national trends. Census tracts are statistical subdivisions of a county roughly the size of a neighborhood (between 1,200 and 8,000 people) that are used by the U.S. Census Bureau to analyze populations over time. Data have been collected from previously published documents issued by federal, state, and local agencies and from local and national databases (e.g., U.S. Census Bureau and District of Columbia Government).

Regulations that guide the socioeconomic analysis include CEQ regulations for implementing the procedural provisions of NEPA (40 CFR parts 1500–1508) and specifically include 40 CFR section 1508.8 and 40 CFR section 1508.14.

The CEQ regulations implementing NEPA state that when economic or social effects and natural or physical environmental effects are interrelated, the EIS should discuss these effects on the human environment (40 CFR section 1508.14). The CEQ regulations further state that the “human environment shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment.” In addition, 40 CFR section 1508.8 states that agencies need to assess not only direct effects, but also “aesthetic, historic, cultural, economic, social, or health” effects. Following these regulations, the socioeconomic analysis in this EIS evaluates how elements of the human environment such as population, employment, housing, economic activity, and local government revenue might be affected by the Proposed Action.

3.9.2 Affected Environment

The WNY and the SEFC E Parcels fall within Census Tract 72.01. This census tract constitutes the demographic study area for this analysis. Census Tract 72 was divided into Census Tracts 72.01, 72.02, and 72.03 after the 2020 decennial census, so some references to time periods prior to 2020 will use information for Census Tract 72. The data presented here are provided through the U.S. Census Bureau decennial censuses and 5-year estimates from the American Community Survey (U.S. Census Bureau, 2020b). Wherever possible, the most recent data available are presented so that the affected environment reflects current conditions within the study area. A map showing the study area in relation to Washington, D.C. is shown in Figure 3.9-1.

3.9.2.1 Population

Table 3.9-1 shows the U.S. Census Bureau (2000; 2010; 2020a) population data and average annual population growth rates for Census Tract 72, the District of Columbia, and the United States in 2000, 2010, and 2020. Census Tract 72 has seen rapid growth over the past 20 years, especially the last 10 years.

Table 3.9-1 Population Totals and Growth Rates, 2000 - 2020

Area	*2000*	*2010*	*2020*	*Annual Growth Rate 2000 to 2010*	*Annual Growth Rate 2010 to 2020*	*Annual Growth Rate 2000 to 2020*
Census Tract 72 (WNY)	1,825	2,794	11,036	5.31%	29.50%	25.24%
Washington, D.C.	572,059	601,723	689,545	0.52%	1.46%	1.03%
United States	281,421,906	308,745,538	331,449,281	0.97%	0.74%	0.89%

Note: After the 2020 decennial census, Census Tract 72 was divided into three new census tracts, including 72.01 (which is the study area for the analysis), 72.02, and 72.03.

Sources: (U.S. Census Bureau, 2000; 2010; 2020a).

3.9.2.2 Employment and Income

According to the U.S. Bureau of Labor Statistics (2022a; 2022b), the unemployment rate in Washington, D.C. (6.1 percent) was higher than the unemployment rate for the United States as a whole (3.8 percent) in February 2022. Table 3.9-2 shows monthly employment data for Washington, D.C. and the United States in February 2022.

Table 3.9-2 Monthly Employment Statistics for January of 2022

Area	*Civilian Labor Force*	*Employed*	*Unemployed*	*Unemployment Rate*
Washington, D.C.	384,806	361,433	23,373	6.1%
United States	163,991,000	157,722,000	6,270,000	3.8%

Sources: (U.S. Bureau of Labor Statistics, 2022a; 2022b).

In 2020, the largest industry group, by number of employees in both Census Tract 72.01 and Washington, D.C. as a whole, includes both professional, scientific, and management employees, and administrative and waste management services employees (U.S. Census Bureau, 2020b). Table 3.9-3 lists the level of employment in each industry for Census Tract 72.01 and Washington, D.C. The types of employment in the ROI helps to determine the magnitude of impacts if certain industries are affected.

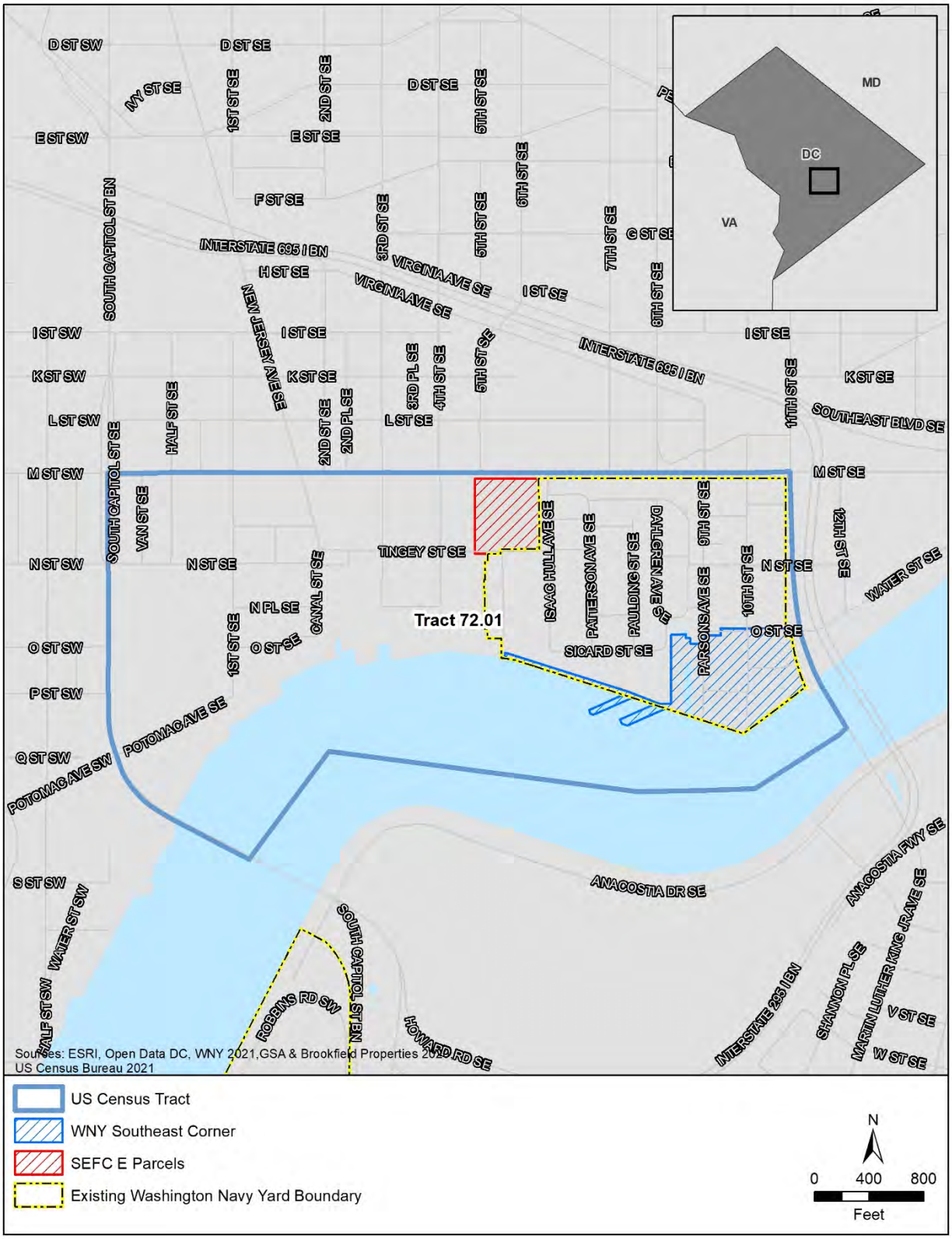


Figure 3.9-1 Socioeconomics Study Area

Table 3.9-3 Civilian Employment by Industry in Census Tract 72.01, Washington D.C., and the United States in 2020

Industry	*Census Tract 72.01 Employment*	*Percent of Census Tract 72.01 Workforce*	*Washington, D.C. Employment*	*Percent of Washington, D.C. Workforce*
Agriculture, forestry, fishing and hunting, and mining	0	0.0%	587	0.2%
Construction	0	0.0%	10,770	2.8%
Manufacturing	20	1.6%	4,295	1.1%
Wholesale trade	72	5.7%	2,143	0.6%
Retail trade	0	0.0%	17,562	4.6%
Transportation and warehousing, and utilities	0	0.0%	12,424	3.3%
Information	22	1.7%	13,889	3.6%
Finance and insurance, and real estate and rental and leasing	90	7.1%	24,341	6.4%
Professional, scientific, and management, and administrative and waste management services	434	34.2%	91,778	24.0%
Educational services, and health care and social assistance	224	17.7%	69,485	18.2%
Arts, entertainment, and recreation, and accommodation and food services	86	6.8%	34,507	9.0%
Other services, except public administration	63	5.0%	36,298	9.5%
Public administration	258	20.3%	64,029	16.8%

Source: (U.S. Census Bureau, 2020b).

Incomes in Census Tract 72.01 are significantly higher than national incomes and are also higher than incomes in Washington, D.C. (Table 3.9-4).

Table 3.9-4 Income Data: Census Tract 72.01, Washington, D.C., and the United States 2020

Area	*Median Household Income*	*Mean Household Income*	*Median Earnings for Workers*	*Per Capita Income*
Census Tract 72.01 (WNY)	$124,013	$141,623	$96,316	$110,008
Washington, D.C.	$90,842	$133,587	$59,677	$58,659
United States	$64,994	$91,547	$36,280	$36,280

Note: WNY = Washington Navy Yard.
Source: (U.S. Census Bureau, 2020b).

3.9.2.3 Schools

Schools are a critical public service that can be directly impacted by changes in population which may bring more school-aged children to the ROI. According to the National Center for Education Statistics (National Center for Education Statistics, 2020; 2021), there are a total of 235 public schools and 53 private schools serving pre-K through 12th grade students in Washington, D.C. (Table 3.9-5).

Table 3.9-5 Public and Private Schools in Washington D.C. (Pre K through Grade 12)

School Type	*Number of Schools*	*Number of Students*	*Number of Teachers*	*Student Teacher Ratio*
Public (2020-2021)	235	89,023	7,678	11.6
Private (2019-2020)	53	12,035	1,260	9.6
Total	288	101,058	8,938	11.3

Sources: (National Center for Education Statistics, 2020; 2021).

3.9.2.4 Housing

Housing availability and affordability have the potential to be impacted by increases in population or increases in the number of housing units. There are total of 1,182 total housing units in Census Tract 72.01, of which 68 are vacant (Table 3.9-6). Median values of owner-occupied housing units in Census Tract 72.01 are lower than in Washington, D.C. as a whole; however, median rent in Census Tract 72.01 is higher. Additionally, median home values and rent prices are significantly higher in Census Tract 72.01 and Washington, D.C. than those in the United States. As shown in Table 3.9-1 the ROI has seen significant population growth over the last ten years and the area has seen several development projects adding new housing. A review of online apartment listings in the ROI showed a wide range of rental starting prices, from a low of $1,810 for a studio apartment to a high of $6,100 for a three-bedroom apartment (Zillow, 2022). Two-bedroom apartments ranged from a low of $2,684 to a high of $4,216.

Table 3.9-6 Housing Data: Census Tract 72.01, Washington, D.C., and the United States 2020

Area	*Total Housing Units*	*Vacant Housing Units*	*Rental Vacancy Rate*	*Median Value of Owner-Occupied Housing Units*	*Median Gross Rent*
Census Tract 72.01 (WNY)	1,182	68	6.2	$473,400	$2,522
Washington, D.C.	319,192	30,885	6.7	$618,100	$1,607
United States	138,432,751	16,078,532	5.8	$229,800	$1,096

Note: WNY = Washington Navy Yard.
Source: (U.S. Census Bureau, 2020b).

3.9.2.5 Economic Activity

Table 3.9-7 lists the gross domestic product for Washington, D.C. in 2020, by industry. The largest contributing industry by percentage is government and government enterprises (33.4 percent). The next largest industry is the professional and business services which makes up 24.1 percent of Washington, D.C.'s contribution to gross domestic product.

Table 3.9-7 Gross Domestic Product for Washington, D.C. in 2020

Industry	*Total (2022 Dollars)*	*Percentage of Total*
Agriculture, forestry, fishing, and hunting	$1,000,000	0.0%
Mining, quarrying, and oil and gas extraction	$0	0.0%
Utilities	$1,388,400,000	1.0%
Construction	$1,933,300,000	1.3%
Manufacturing	$254,500,000	0.2%
Wholesale trade	$1,557,500,000	1.1%
Retail trade	$1,671,600,000	1.2%
Transportation and warehousing	$501,700,000	0.3%
Information	$9,368,100,000	6.5%
Finance, insurance, real estate, rental, and leasing	$19,213,200,000	13.3%
Professional and business services	$34,805,600,000	24.1%
Educational services, health care, and social assistance	$11,296,500,000	7.8%
Arts, entertainment, recreation, accommodation, and food services	$3,867,600,000	2.7%
Other services (except government and government enterprises)	$10,398,300,000	7.2%
Government and government enterprises	$48,297,500,000	33.4%
All Industry Total	***$144,554,800,000***	

Source: (Bureau of Economic Analysis, 2020).

3.9.2.6 Tax Revenue

Local tax revenue may be positively impacted by increases in spending in the ROI and increases in property values. Since the federal government is exempt from paying local property taxes, removing privately-owned land from the tax base and expanding federal ownership would have the potential to impact property tax revenue. Washington, D.C. is not located within a state, which means that it carries out functions of both a state and a city. Taxes that would normally be collected by the state are administered by the Washington, D.C. government. Washington, D.C. earns the bulk of its revenue through the collection of property taxes, sales and excise taxes, and income taxes (Table 3.9-8).

Table 3.9-8 General Fund Revenue Sources for Washington, D.C. in FY 2020

Revenue Source	*Revenue Received*	*Percentage of Total*
Property Tax	$2,954,093,000	33.6%
Sales and Excise Tax	$1,316,574,000	15.0%
Income Tax	$3,104,933,000	35.3%
Gross Receipts	$371,123,000	4.2%
Other Tax	$489,988,000	5.6%
Non-Tax	$522,895,000	5.9%
Lottery	$38,060,000	0.4%
Revenue Total	***$8,797,665,000***	***100.0%***

Source: (District of Columbia Government, 2021).

3.9.3 Environmental Consequences

Analysis of impacts to socioeconomics focuses on the effects of the alternatives on population, employment and income, schools, housing, economic activity, and tax revenue.

3.9.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. The Navy would not acquire the SEFC E Parcels or redevelop the parcels. No Navy relocations would occur on the WNY. Under this alternative, the developer would construct the planned mixed-use development on the SEFC E Parcels. The private development is estimated to include 328,000 square feet of office space and 538,000 square feet of residential space.

Construction of the development would support local construction industry jobs, stimulating employment and income. The construction industry in the Washington, D.C. area is large enough to support the project and there would not be a large need for non-local workers. Therefore, impacts to population, housing, and schools during the construction period would be minor. Local spending on construction materials and wages would stimulate economic activity and generate tax revenues through sales and income taxes which would be a beneficial impact.

As described in Section 2.3.1, *No Action Alternative*, during operation of the development, the added residential space is estimated to include approximately 540 new residential units, which would lead to a potential increase in population of approximately 1,240 people. This represents an 11.2 percent increase over the 2020 population of Census Tract 72 and a 0.2 percent increase in the population of Washington, D.C. (see Table 3.9-1). The 540 new residential units would be a 45.7 percent increase over the number of housing units in Census Tract 72.01 in 2020 and a 0.2 percent increase in housing units for Washington, D.C. The increased population would be driven by the new available housing and would therefore not create a housing shortage.

In 2020, the number of school-age children in Washington, D.C. was approximately 14.7 percent of the total population (see Tables 3.9-1 and 3.9-5). If a similar number of the 1,240 new residents were school-aged this would be a total of approximately 182 new school children, which would be a 0.2 percentage increase in the number of students in Washington, D.C.

The additional office space for an estimated 985 workers would not create the employment, but the proposed space would be available to accommodate potential future employment growth. This growth may help to stimulate and encourage employers to move to the area, which would generate local economic activity and income. The improvements to existing buildings and construction of new buildings would result in higher assessed property values, which would lead to higher property tax revenues in the long term. Higher property tax revenues would help pay for additional school demand driven by the population increase.

Overall, impacts from implementation of the No Action Alternative would be beneficial as the beneficial impacts of additional economic activity and tax revenues would offset the expense of increased demand for public services.

3.9.3.2 Alternative 1A Land Acquisition through Land Exchange with Construction and Operation of Relocated Navy Museum on SEFC E Parcels (Preferred Alternative)

The impacts of land acquisition through land exchange under Alternative 1A are discussed below, followed by the impacts of construction and operation of a relocated Navy Museum on the SEFC E Parcels.

Impacts from Land Acquisition through Land Exchange

The following addresses socioeconomic impacts from land acquisition through land exchange under Alternative 1A, which involves the exchange of the SEFC E Parcels for the WNY Southeast Corner, as well as private development and in-kind considerations on the WNY Southeast Corner.

As a result of the proposed land exchange, there would be a net decrease in the acreage of land owned by the Navy at the WNY and an increase in the developable land surrounding the installation. The net removal of land from federal ownership would increase the amount and value of land subject to property tax, which would increase revenues for Washington, D.C. into the future. This would be a positive long-term impact on tax revenues although the 9-acre net gain in taxable land is only a small fraction of the more than 39,000 acres of land in Washington, D.C. Consequently, the fiscal impacts as a percentage of total revenues would be long term, but minor.

As described in Section 2.3.2.1, private development on the WNY Southeast Corner would potentially include more than two million square feet of new and renovated building space including an estimated 1,300 residential units, as well as space for 1,776 office and retail workers. Additionally, as described in Section 2.3.2.2, due to the potential imbalance of value between the SEFC E Parcels and the WNY Southeast Corner, the developer may provide other in-kind considerations to the Navy including renovation, rehabilitation, and repair of facilities, and an integrated stormwater management system. The following discussion focuses on impacts to socioeconomic conditions from future private development on the WNY Southeast Corner and in-kind considerations at the WNY to be provided by the developer.

During construction of the development projects under Alternative 1A, impacts would be similar to those of the construction projects in the No Action Alternative although the magnitude of the impacts would be greater because the land area and the size of the developments would be larger. The construction industry in the Washington, D.C. area employs over 10,000 people (see Table 3.9-3) and would support most of the jobs; large numbers of non-local workers would not likely be required. Local spending on construction materials and wages would stimulate economic activity and generate tax revenues through sales and income taxes, which would be a beneficial impact.

Once construction is complete, the residential units are estimated to support 2,990 people, which would be a 27.1 percent increase in the population of Census Tract 72 and a 0.4 percent increase in population for Washington, D.C. If the ratio of the number of school children to the overall population is similar in the new residents, there could be approximately 437 school-aged children amongst the new residents, which would be approximately 0.4 percent of the number of students in Washington, D.C. in 2020 (see Tables 3.9-1 and 3.9-5).

The additional office space for an estimated 1,776 workers would not create the employment, but the proposed space would be available to accommodate potential future employment growth and may help to stimulate and encourage employers to move to the area, which would generate local economic activity and income.

New retail businesses would provide amenities to local residents and attract spending from visitors coming from outside the ROI. Additionally, the rehabilitation of Piers 1 and 2 and the repair of the Anacostia Riverwalk Trail would provide amenities to local residents and attract visitors that would spend money in the retail businesses. The stimulation of this economic activity would further benefit the local community by creating jobs and generating local tax revenues.

The improvements to existing buildings and construction of new buildings would lead to higher assessed property values for the improved properties and the addition of newly assessed property. This would result in higher property tax revenues in the long term. Higher property tax revenues would help pay for additional school demand driven by the population increase.

Impacts from Reuse of SEFC E Parcels with Construction and Operation of Relocated Navy Museum

Construction of the relocated Navy Museum under Alternative 1A would support local construction jobs and wages over an approximately 5-year period. The construction industry in the Washington, D.C. area employs over 10,000 people (see Table 3.9-3) and would support most of the jobs. Large numbers of non-local workers would not likely be required. Therefore, construction of the Navy Museum would not be expected to have impacts on population, housing, and schools. Spending on construction materials in the area would stimulate economic activity and generate sales tax revenue. These would be short-term positive impacts. Additional noise or traffic congestion related to construction activities may have short-term negligible negative impacts on local businesses or residents during the 5-year construction period.

Once the Navy Museum is completed, visitation is anticipated to increase from the current 100,000 annual visitors to up to 1.1 million annual visitors. The increased visitors to the area would stimulate local businesses and economic activity, likely driving job growth and wages locally. These would be long-term positive impacts.

The additional permanent employees required for the Navy Museum would be a long-term beneficial impact on employment and wages. The large labor pool in the Washington, D.C. area would likely provide many local candidates for the positions and the small number of new employees that may be required to move to the area would have a negligible impact on the densely populated surrounding area.

3.9.3.3 Alternative 1B Land Acquisition through Land Exchange with Construction and Operation of Navy Administrative Development on SEFC E Parcels

The impacts of land acquisition through land exchange under Alternative 1B are discussed below, followed by the impacts of construction and operation of Navy administrative development on the SEFC E Parcels.

Impacts from Land Acquisition through Land Exchange

Under Alternative 1B, socioeconomic impacts from land acquisition through land exchange, which involves the exchange of the SEFC E Parcels for the WNY Southeast Corner, as well as private development and in-kind considerations on the WNY Southeast Corner, are the same as those described for Alternative 1A.

Impacts from Reuse of SEFC E Parcels with Construction and Operation of Navy Administrative Development

Under Alternative 1B, impacts during construction of Navy administrative development are assumed to be similar in scope to the impacts of construction of the Navy Museum under Alternative 1A. Therefore, there would be short-term positive impacts on employment, wages, economic activity, and tax revenues, and potentially negligible short-term negative impacts to local businesses and residents due to noise and traffic.

Operation of the administrative office space under Alternative 1B would not create new permanent employment, but the relocation of 4,275 staff positions into the ROI would increase local employment and income which would increase local housing demand and further stimulate economic activity around the WNY. The increased number of personnel at the WNY would increase visitation to the area and increase demand for retail and commercial businesses in the ROI therefore, there would be long-term beneficial impacts to socioeconomics.

3.9.3.4 Alternative 1C Land Acquisition through Land Exchange with No Development on SEFC E Parcels

Impacts from Land Acquisition through Land Exchange

Impacts from the land acquisition thorough land exchange under Alternative 1C, which involves the exchange of the SEFC E Parcels for the WNY Southeast Corner, as well as private development and in-kind considerations on the WNY Southeast Corner, are the same as those described for Alternative 1A.

Impacts from No Development on SEFC E Parcels

With no development on the SEFC E Parcels under Alternative 1C, there would be no short-term or long-term impacts other than those described for land acquisition through land exchange and development of the WNY Southeast Corner.

3.9.3.5 Alternative 2A Direct Land Acquisition with Construction and Operation of Relocated Navy Museum on SEFC E Parcels

The impacts of direct land acquisition under Alternative 2A are discussed below, followed by the impacts of construction and operation of a relocated Navy Museum on the SEFC E Parcels.

As a result of the direct land acquisition of the SEFC E Parcels under Alternative 2A, there would be a net increase in the acreage of land owned by the Navy at the WNY and a decrease in the developable land surrounding the installation. The net removal of land value subject to property tax would decrease revenues for Washington, D.C. into the future. This would be a minor negative long-term impact on tax revenues.

Impacts from the construction and operation of a Navy Museum under Alternative 2A would be the same as the impacts described for Alternative 1A.

3.9.3.6 Alternative 2B Direct Land Acquisition with Construction and Operation of Navy Administrative Development on SEFC E Parcels

Under Alternative 2B, socioeconomic impacts from direct land acquisition of the SEFC E Parcels are the same as those described for Alternative 2A.

Impacts from reuse of SEFC E Parcels with the construction and operation of Navy administrative development under Alternative 2B would be the same as the impacts described for Alternative 1B.

3.9.3.7 Alternative 2C Direct Land Acquisition with No Development

Under Alternative 2C, socioeconomic impacts from direct land acquisition of the SEFC E Parcels are the same as those described under Alternative 2A. There would be minor negative economic impact with the increase in federal land without the added benefit of development from the Navy acquiring the SEFC E Parcels and leaving the parcels in their current state with no development.

3.9.4 Summary of Impacts and Conclusions

Based on the analysis of potential impacts presented above, the No Action Alternative and Alternatives 1A, 1B, 1C, 2A, and 2B would all have beneficial economic impacts as a result of development that would increase employment income, economic activity, and tax revenue. The benefits would likely offset the expense of increased demands for public services.

Alternatives 2A and 2B would have a minor negative economic impact as a result of direct land acquisition that would increase federal land and remove some property from taxable status resulting in reduced property tax revenues. The negative impact would likely be offset by the previously mentioned benefits of development. Alternative 2C would have a minor negative economic impact with the increase in federal land but without adding the benefits of development. Implementation of any of the alternatives would not result in significant impacts to socioeconomics.

3.10 Environmental Justice

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, 2022f). This section evaluates the potential for implementation of the Proposed Action to have disproportionately high and adverse human health or environmental impacts on low-income populations or minority populations. The analysis of protection of children seeks to identify potential environmental health and safety impacts that may disproportionately affect children.

3.10.1 Regulatory Setting

Three EOs dealing directly with environmental justice and protection of children inform this analysis. The environmental justice EO (12898) directs federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations. EO 14008 amends EO 12898 to create, within the Executive Office of the President, a White House Environmental Justice Interagency Council (Interagency Council) and calls for the Interagency Council to provide recommendations for further updating EO 12898. The protection of children EO (13045) directs federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children.

3.10.2 Affected Environment

The affected environment for environmental justice and protection of children is defined using demographic data that identifies low-income populations, minority populations, or locations where children would likely be present, relative to locations that would be affected by the Proposed Action. The area that makes up the ROI consists of the census tract where the WNY and SEFC E Parcels are located (Census Tract 72.01) as well as census tracts within 0.5 mile of the SEFC E Parcels or the WNY Southeast Corner (Census Tracts 65, 70, 71, 72.02, 72.03, 74.01, 75.03, and 76.01) (see Figures 3.10-1 through 3.10-3). Block groups are a statistical division of census tracts that typically have between 600 and 3,000 people. These are the smallest geographical units for which the U.S. Census Bureau publishes survey data. The U.S. Census Bureau provides estimates of the population that are minority or below the poverty level. The percentages in each block group within the ROI were compared to established benchmarks or local reference area averages (whichever criteria are more stringent) to determine whether respective census block groups should be considered minority or low-income areas. Additionally, schools, childcare centers, libraries, and parks in the ROI were identified as locations where children may be vulnerable to certain types of impacts.

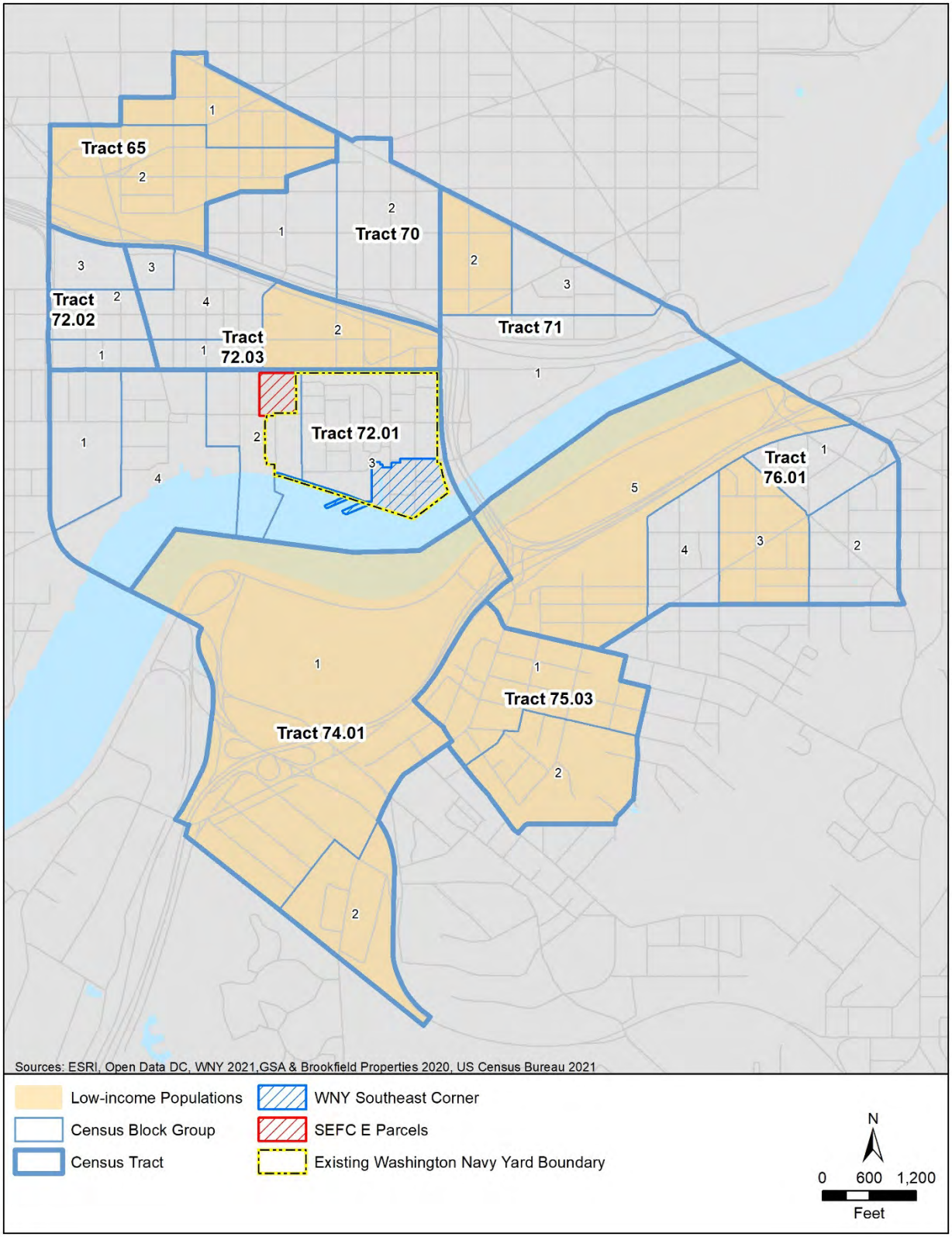


Figure 3.10-1 Low Income Areas

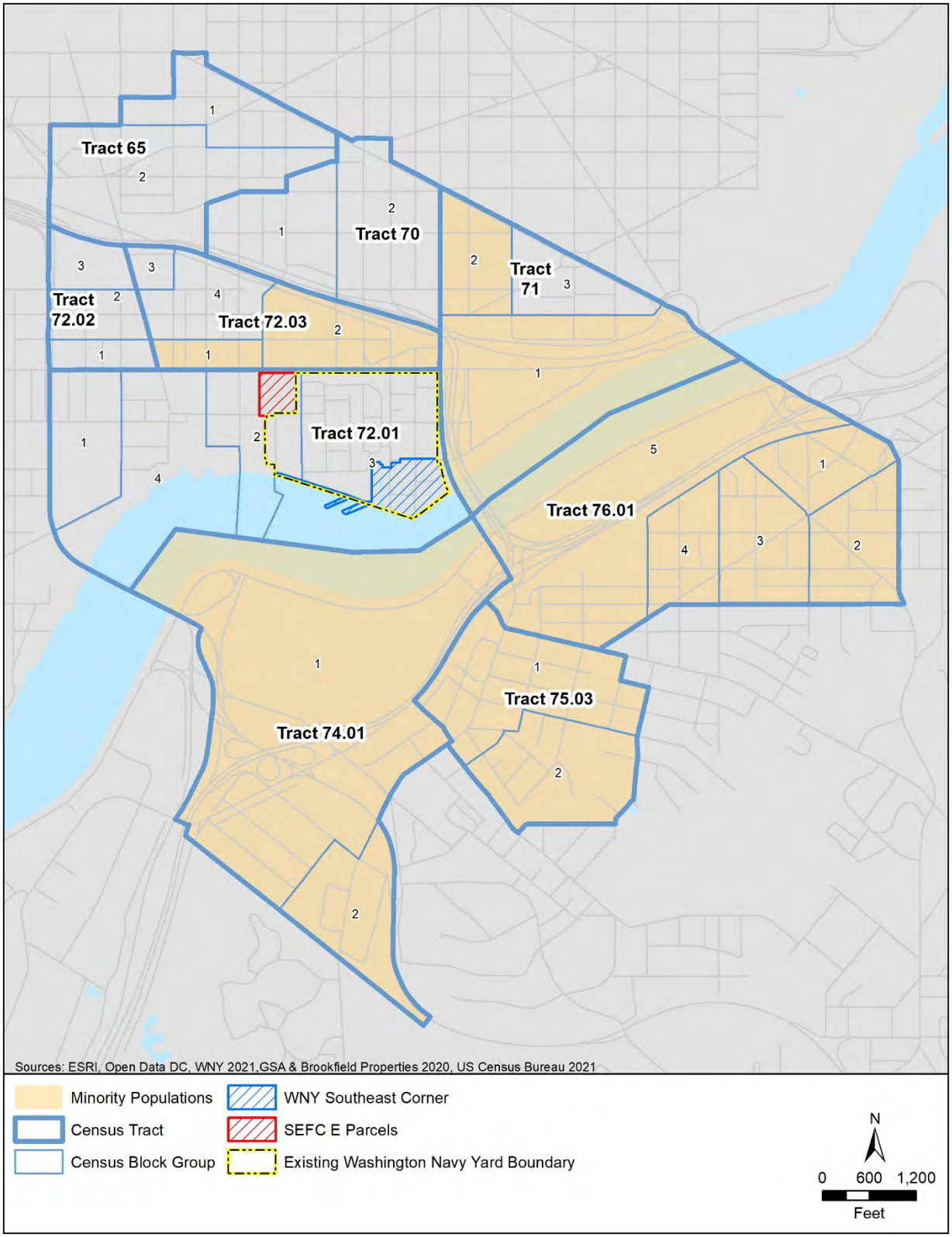


Figure 3.10-2 Minority Population Areas

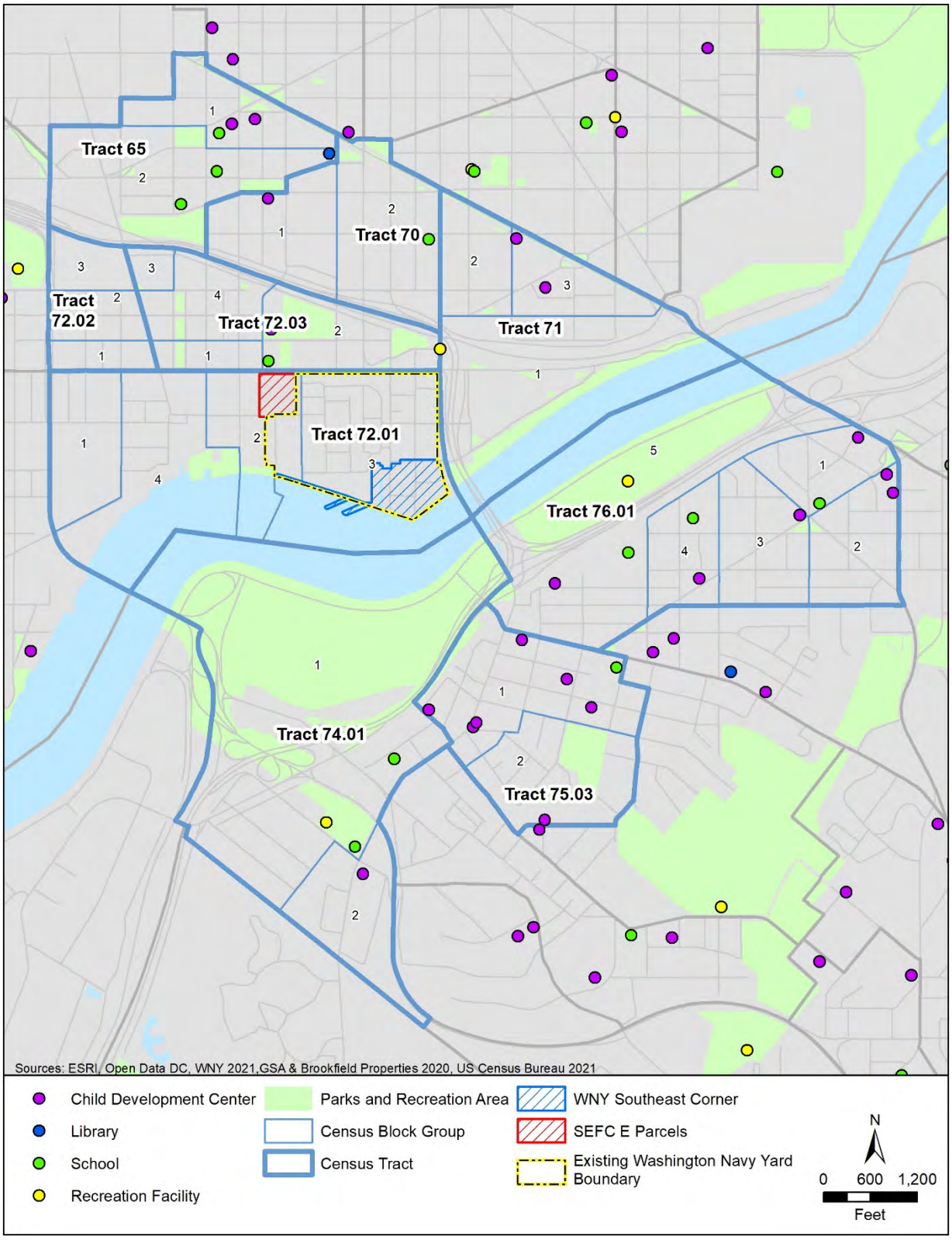


Figure 3.10-3 Areas with High Concentrations of Children

3.10.2.1 Low-income Population Areas

Low-income populations were identified using methods described by the Environmental Justice Interagency Working Group and NEPA Committee (Environmental Justice Working Group, 2016) and guidelines issued by CEQ (1997a). Using the low-income threshold criteria analysis outlined by the working group, a census block group is considered to be a low-income area if the percentage of households with incomes below the poverty line is greater than the reference area. For this analysis, the reference area is Washington, D.C.

Table 3.10-1 shows the percentage of households with incomes below the poverty level for each block group. Figure 3.10-1 highlights those block groups that are considered environmental justice low-income areas. Of the 27 block groups in the ROI, 10 are considered low-income.

Table 3.10-1 Low-income Populations in the ROI in 2020

Area	*Households*	*Percent of Households Below the Poverty Level*	*Environmental Justice Low-income Area?*
Washington, D.C. (Reference Area)	***288,307***	***13.7%***	***NA***
All Block Groups in the ROI	***11,423***	***15.1%***	***Yes***
Census Tract 65, Block Group 1	449	18.7%	Yes
Census Tract 65, Block Group 2	876	15.2%	Yes
Census Tract 70, Block Group 1	732	3.4%	No
Census Tract 70, Block Group 2	361	3.0%	No
Census Tract 71, Block Group 1	279	12.5%	No
Census Tract 71, Block Group 2	506	39.1%	Yes
Census Tract 71, Block Group 3	462	3.0%	No
Census Tract 72.01, Block Group 1	377	3.7%	No
Census Tract 72.01, Block Group 2 (SEFC E Parcels)	531	1.7%	No
Census Tract 72.01, Block Group 3 (WNY)	5	0.0%	No
Census Tract 72.01, Block Group 4	201	0.0%	No
Census Tract 72.02, Block Group 1	464	4.3%	No
Census Tract 72.02, Block Group 2	774	1.4%	No
Census Tract 72.02, Block Group 3	595	5.9%	No
Census Tract 72.03, Block Group 1	272	12.5%	No
Census Tract 72.03, Block Group 2	108	49.1%	Yes
Census Tract 72.03, Block Group 3	330	0.0%	No
Census Tract 72.03, Block Group 4	551	0.0%	No
Census Tract 74.01, Block Group 1	163	52.1%	Yes
Census Tract 74.01, Block Group 2	547	53.9%	Yes
Census Tract 75.03, Block Group 1	284	18.0%	Yes
Census Tract 75.03, Block Group 2	522	37.9%	Yes
Census Tract 76.01, Block Group 1	221	13.1%	No
Census Tract 76.01, Block Group 2	232	12.9%	No
Census Tract 76.01, Block Group 3	739	33.0%	Yes
Census Tract 76.01, Block Group 4	517	7.2%	No
Census Tract 76.01, Block Group 5	325	23.4%	Yes

Notes: NA = Not Applicable; ROI = Region of Influence; SEFC = Southeast Federal Center; WNY=Washington Navy Yard
Source: (U.S. Census Bureau, 2020a).

3.10.2.2 Minority Population Areas

According to the Environmental Justice Interagency Working Group and NEPA Committee (Environmental Justice Working Group, 2016) and guidelines issued by CEQ (1997a), a census block group may be considered to be a minority area if 50 percent or more of its population is American Indian or Alaskan Native, Asian or Pacific Islander, Black, or Hispanic, or if the percentage of the minority population is meaningfully greater than the minority population percentage in the general population or reference area. For this analysis, the reference area is Washington, D.C., which is 63.3 percent non-white. Table 3.10-2 shows the percentage of each block group in the ROI that is non-white. Thirteen of the 27 block groups in the ROI are more than 50 percent non-white. The block group where WNY is located (Census Tract 72.01, Block Group 3) is not considered a minority area.

Table 3.10-2 Minority Populations in the ROI in 2020

Area	*Population*	*Percent of Population that is Non-white*	*Environmental Justice Minority Area?*
Washington, D.C. (Reference Area)	***701,974***	***63.3%***	***Yes***
All Block Groups in the ROI	***26,092***	***57.9%***	***Yes***
Census Tract 65, Block Group 1	1,146	24.4%	No
Census Tract 65, Block Group 2	1,793	25.6%	No
Census Tract 70, Block Group 1	1,507	28.2%	No
Census Tract 70, Block Group 2	1,287	24.6%	No
Census Tract 71, Block Group 1	488	69.5%	Yes
Census Tract 71, Block Group 2	2,324	88.6%	Yes
Census Tract 71, Block Group 3	823	40.3%	No
Census Tract 72.01, Block Group 1	489	44.8%	No
Census Tract 72.01, Block Group 2 (SEFC E Parcels)	677	37.1%	No
Census Tract 72.01, Block Group 3 (WNY)	10	0.0%	No
Census Tract 72.01, Block Group 4	297	12.5%	No
Census Tract 72.02, Block Group 1	858	21.6%	No
Census Tract 72.02, Block Group 2	1,186	15.2%	No
Census Tract 72.02, Block Group 3	1,136	19.9%	No
Census Tract 72.03, Block Group 1	402	75.1%	Yes
Census Tract 72.03, Block Group 2	127	67.7%	Yes
Census Tract 72.03, Block Group 3	595	9.9%	No
Census Tract 72.03, Block Group 4	1,390	39.9%	No
Census Tract 74.01, Block Group 1	353	100.0%	Yes
Census Tract 74.01, Block Group 2	1,172	95.4%	Yes
Census Tract 75.03, Block Group 1	1,220	90.7%	Yes
Census Tract 75.03, Block Group 2	1,496	92.7%	Yes
Census Tract 76.01, Block Group 1	638	95.8%	Yes
Census Tract 76.01, Block Group 2	638	95.6%	Yes
Census Tract 76.01, Block Group 3	1,886	94.3%	Yes
Census Tract 76.01, Block Group 4	1,251	89.3%	Yes
Census Tract 76.01, Block Group 5	903	78.7%	Yes

Notes: ROI = Region of Influence; SEFC = Southeast Federal Center; WNY = Washington Navy Yard.
Source: (U.S. Census Bureau, 2020a).

3.10.2.3 Areas with High Concentrations of Children

Areas with high concentrations of children, including schools, childcare centers, libraries, and parks are shown in relation to the WNY in Figure 3.10-3.

3.10.3 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 other resource sections of this chapter.

3.10.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. The Navy would not acquire the SEFC E Parcels or redevelop the parcels. No Navy relocations as a result of a land exchange would occur on the WNY. Under this alternative, the developer would construct the planned mixed-use development on the SEFC E Parcels. This planned private development includes the renovation of two historic buildings and construction of two new buildings for approximately 328,000 square feet of office space and 538,000 square feet of residential space. As described in Section 2.3.1, *No Action* Alternative, upon completion of construction, it is estimated that approximately 1,240 residents would live at the SEFC E Parcels. Based on the size of the planned office building, it is estimated that approximately 985 employees would work in the SEFC E Parcels. Impacts described in all resource sections are further analyzed for their potential to impact minority or low-income populations and children.

Transportation

As described in Section 3.2, traffic congestion under the No Action Alternative would primarily impact the M Street SE corridor, the intersection of M Street and 11th Street, and the I-695 on- and off- ramps at 11th Street. However, there would not be significant impacts to traffic based on degraded LOS or serious sustained queue spillback within the ROI. The M Street SE corridor runs adjacent to the north side of the WNY and the intersection of M Street and 11th Street and the I-695 on- and off- ramps at 11th Street are located at the northeast corner of the WNY. The area north of M Street across from the SEFC E Parcels is Census Tract 72.03, Block Group 2, which is a low-income and minority area, and the area east of the intersection of M Street and 11th Street and the I-695 on- and off- ramps at 11th Street is Census Tract 71, Block Group 1, which is a minority area. However, areas to the south of M Street, including the block groups where the SEFC E Parcels and the WNY are located, are not low-income or minority areas and would face impacts that are equal to or greater than those in the low-income and minority areas. Therefore, traffic impacts that would affect low-income and minority populations would not be disproportionate. Areas in Census Tract 71, Block Group 1, to the east of the intersection of M Street and 11th Street and the I-695 on- and off- ramps at 11th Street are not residential. Therefore, transportation impacts under the No Action Alternative would not cause disproportionately high and adverse health or environmental effects on any minority or low-income populations.

Van Ness Elementary School is located adjacent to the M Street SE corridor directly across from the SEFC E Parcels. Increased traffic would have the potential to marginally increase safety risks for children at the school; however, the M Street SE corridor is already a busy roadway and safety measures are in place to minimize traffic risks to children (both the school and the playground are fully fenced along the road). Therefore, the No Action Alternative would have no environmental health and safety risks associated with transportation that would disproportionately affect children.

Cultural Resources

As described in Section 3.3, under the *No Action Alternative*, development actions would be protected under the 2007 PA and associated Historic Covenant, and all future development actions under the PA would be done in accordance with the consultation completed between the GSA, D.C. SHPO, and ACHP (GSA, ACHP, & D.C. SHPO, 2007). The consultation closely evaluated and determined potential effects, and included measures to minimize and mitigate those effects. The potential for adverse effects on as-yet undiscovered archaeological resources would be reduced through a required Discovery Plan. The historic nature of the buildings and the setting of the Washington Navy Yard Annex Historic District and Washington Navy Yard Central Yard Historic District and NHL are not related to any particular minority group and would not disproportionately impact low-income or minority populations. The No Action Alternative would have no impacts to cultural resources that would result in environmental health and safety risks to children.

Land Use/Zoning

As described in Section 3.4, under the No Action Alternative, the Proposed Action would not occur and there would be no change to land use or zoning. The current developer's plans for high-rise buildings on the SEFC E Parcels could adversely affect AT posture and missions of the WNY; however, there would not be a disproportionate impact on low-income or minority populations. Land use and zoning changes under the No Action Alternative would not have adverse impacts on environmental health and safety risks that would disproportionately affect children.

Hazardous Materials and Wastes

As described in Section 3.5, contaminants found in soil in the SEFC E Parcels included petroleum hydrocarbons, PAHs, PCBs, and metals such as lead, arsenic, and chromium. Metals have also been detected in the groundwater. Direct contact to contaminated soil poses risks to human health. Excavations during construction have the potential to disturb contaminated soils which would increase exposure risks when those soils are released into the air through dust or into water through site runoff. Appropriate measures would be implemented to ensure that the contaminated soils do not migrate off site, and protective measures would be taken to minimize exposures to contaminated dust and soil. LUCs and long-term management plans that are in place for contaminated sites would reduce the risk of impacts related to hazardous materials and wastes. Potentially impacted sites fall within Census Tract 72.01, Block Group 2, which is not a low-income or minority area. Additionally, in the long term, adhering to USEPAs Final Decision and Final Remedy would reduce the toxicity, mobility, and volume of hazardous constituents in SEFC soils through the removal of contaminated soil from the site. Therefore, hazardous materials and wastes under the No Action Alternative would not cause disproportionately high and adverse health or environmental effects on minority or low-income populations.

Children are generally at risk of disproportionate impacts from contaminated soil, air, or water as they are ingesting more food, fluids, and air in proportion to their body weight than adults. During construction, appropriate measures would be implemented to ensure that the contaminated soils do not migrate off site, and protective measures would be taken to minimize exposures to contaminated dust and soil. During operation, the removal of contaminated soil and LUCs and long-term management would reduce the risk for potential exposures to hazardous materials and wastes. However, hazardous materials and wastes under the No Action Alternative would not result in health and safety risks that would disproportionately affect children.

Water Resources

As described in Section 3.6, potential impacts to water resources would be managed through approved development plans that include permits and measures to manage construction stormwater, sedimentation, and flood risk potential. However, the risk of flood events at the SEFC E Parcels would remain. It is assumed that development on the SEFC E Parcels would raise the site's base elevation, which could exacerbate flood risks at adjacent properties. Adjacent properties on three sides (east, south, and west) of the SEFC E Parcels are not low-income or minority areas, but properties to the north of the parcels are in a low-income and minority area. Low-income populations may be at higher risk from flooding events because they may lack adequate resources to prepare for the events, evacuate from the events, or recover from the events. Given that the development has been approved, the development plans must include adequate measures for complying with applicable District regulations regarding flood risks. Additionally, as shown in Figure 3.6.1, only a small area north of the SEFC E Parcels is in the 500-year floodplain and no areas north of the SEFC E Parcels are in the 100-year floodplain. Of the adjacent properties, those to the north of the SEFC E Parcels are farthest from the Anacostia River and would have the lowest overall risk of flooding. Therefore, the risk of flooding events in low-income and minority areas under the No Action Alternative would remain the same as existing conditions, would not result in disproportionately high and adverse health or environmental effects on minority and low-income populations, and would not cause environmental health and safety risks that disproportionately affect children.

Noise

As described in Section 3.7, construction activities under the No Action Alternative would have adverse noise impacts in the vicinity of the SEFC E Parcels. The SEFC E Parcels and the primarily impacted areas fall within Census Tract 72.01, Block Group 2, which is not a low-income or minority area; however, significant impacts may occur in the area north of the SEFC E Parcels (Census Tract 72.03, Block Group 2) which is a low-income and minority area. Any potential impacts are not expected to disproportionately impact low-income or minority populations because impacts would occur to an equal or greater extent in areas that are not minority or low-income. Therefore, noise impacts from the No Action Alternative would not cause disproportionately high and adverse health or environmental effects on any minority or low-income populations.

There are several areas where children are likely to be present in the vicinity of the SEFC E Parcel construction activities, including residential areas, schools, childcare facilities, and parks. Van Ness Elementary School is directly across the street from the SEFC E Parcels. Although temporary construction-related noise level increases are generally not considered significant, potentially significant, temporary noise impacts could occur at noise-sensitive locations during construction at the SEFC E Parcels. As there would be no long-term or future permanent noise impacts at the SEFC E Parcels, the No Action Alternative would not cause environmental health and safety risks that may disproportionately affect children.

Air Quality

As described in Section 3.8, the annual net change in emissions for the No Action Alternative would be below the applicable annual significance thresholds for all pollutants and the annual emissions from the No Action Alternative would be below the applicable conformity *de minimis* thresholds for all pollutants. Air quality impacts from construction and operation activities would not be significant. Additionally, air quality emissions during construction would be centered around the SEFC E Parcels, which are not in a

low-income or minority area. Therefore, the No Action Alternative would not have a disproportionate impact on low-income or minority populations.

Air emissions would not be significant and would be concentrated at the construction site of the SEFC E Parcels where children's access would be limited. Therefore, air emissions from the No Action Alternative would not result in health or safety risks that would disproportionately affect children.

Socioeconomics

As described in Section 3.9, most impacts related to socioeconomics under the No Action Alternative would be beneficial, including to local employment, wages, economic activity, and tax revenues. Redevelopment of historically low-income or minority areas has the potential to increase demand for housing in those areas, which could increase housing prices and costs. This can have the effect of making it too expensive for low-income populations to remain in their historical neighborhood. In this instance, the largest increases in property values would be as a direct result of the development occurring in Census Tract 72.01, Block Group 2, which already has high housing prices and is not a low-income or minority area. The development would be similar to other development that has recently occurred in the area, so would not be expected to significantly alter the value of surrounding properties. The District's Inclusionary Zoning Program may require that a developer set aside 8 to 10 percent of a residential floor area for affordable units in most new residential development projects of 10 or more units; and in rehabilitation projects that are creating 10 or more units in an existing building or addition. The developer will be subject to applicable zoning requirements so the applicability of this requirement would be determined at the time the developer decides to move forward with any development (D.C. Department of Housing and Community Development, 2022). Therefore, any potential impacts are not expected to disproportionately impact low-income or minority populations. The potential impacts to businesses from the No Action Alternative would have no environmental health or safety risks that would disproportionately affect children and any potentially hazardous construction sites would be fenced off to prevent access to children and other members of the public.

Utilities and Infrastructure

As described in Section 3.11, minor short-term disruptions may occur when connections are made during construction, but there are no capacity concerns. Primary impacts related to utilities and infrastructure would occur within or adjacent to the WNY and would fall within Census Tract 72.01, Block Groups 2 and 3, which are not low-income or minority areas; therefore, any potential impacts from the No Action Alternative are not expected to disproportionately impact low-income or minority populations. The nature of the potential utilities and infrastructure impacts would have no environmental health or safety risks that would disproportionately affect children.

3.10.3.2 Alternative 1A Land Acquisition through Land Exchange with Construction and Operation of Relocated Navy Museum on SEFC E Parcels (Preferred Alternative)

The impacts of land acquisition through land exchange under Alternative 1A are discussed below, followed by the impacts of construction and operation of a relocated Navy Museum on the SEFC E Parcels.

Impacts from Land Acquisition through Land Exchange

The following addresses impacts from land acquisition through land exchange under Alternative 1A, as well as private development and in-kind considerations on the WNY Southeast Corner.

Under Alternative 1A, the Navy would acquire the approximately 6-acre SEFC E Parcels in exchange for transferring approximately 15 acres of underutilized land in the WNY Southeast Corner to the developer. Private development on the WNY Southeast Corner would potentially include more than two million square feet of new and renovated building space including an estimated 1,300 residential units, as well as space for 1,776 office and retail workers. Additionally, due to the potential imbalance of value between the SEFC E Parcels and the WNY Southeast Corner, the developer may provide other in-kind considerations to the Navy including renovation, rehabilitation, and repair of facilities, and an integrated stormwater management system.

Generally, impacts of private development on the WNY Southeast Corner and in-kind considerations under Alternative 1A would be similar to those impacts from the development described for the No Action Alternative, except impacts would be centered around the WNY Southeast Corner. The area is bordered by the WNY to the north and west and the Anacostia River to the south. To the east is Census Tract 71, Block Group 1, which is a minority area; however, the portion of the block group that is adjacent to the WNY Southeast Corner is not residential. Development under Alternative 1A would include more total square footage of construction and renovation and would include in-kind considerations; however, the WNY Southeast Corner does not have adjacent residential areas or adjacent locations with high concentrations of children.

Transportation

Impacts to transportation under Alternative 1A would include the same impacts as described under the No Action Alternative and would also include occasional queue spillback problems at the O Street Gate, at the intersection of M Street SE and 11th Street, and the I-695 on- and off- ramps at 11th Street during the morning and afternoon traffic peaks. The area north of M Street SE across from the SEFC E Parcels is Census Tract 72.03, Block Group 2, which is a low-income and minority area and the area east of the intersection of M Street SE and 11th Street, the I-695 on- and off- ramps at 11th Street, and the O Street Gate is Census Tract 71, Block Group 1, which is a minority area. However, areas to the south of M Street SE, including the block groups where the SEFC E Parcels and the WNY are located, are not low-income or minority areas and would face impacts that are equal to or greater than those in the low-income and minority areas. Therefore, traffic impacts that would affect low-income and minority populations would not be disproportionate. Areas in Census Tract 71, Block Group 1, to the east of the intersection of M Street SE and 11th Street, the I-695 on- and off- ramps at 11th Street, and the O Street Gate are not residential. Therefore, transportation impacts would not cause disproportionately high and adverse health or environmental effects on any minority or low-income populations.

Impacts at Van Ness Elementary School would be the same as those described under the No Action Alternative. There are no schools or childcare centers in the vicinity of the WNY Southeast Corner and development of the WNY Southeast Corner would not affect children. Therefore, Alternative 1A would have no environmental health and safety risks associated with transportation that would disproportionately affect children.

Cultural Resources

As described in Section 3.3, there would potentially be effects to historic properties and the Navy would consult with ACHP, D.C. SHPO, and consulting parties and the treatment of historic properties would be evaluated through the Section 106 process. Potential adverse effects to as-yet undiscovered archaeological resources would be resolved through NHPA Section 106 consultation through the development and implementation of a PA. Renovations to Buildings 70, 68, 301, 302, 308 could result in

adverse effects to them and therefore to the NHL and large new buildings at the WNY Southeast Corner could result in adverse effects to the Washington Navy Yard Eastern Extension Historic District and NHL. Adverse effects to cultural resources would be mitigated through NHPA Section 106 consultation and stipulations in new PA(s) and MOU(s). Additionally, the historic nature of the buildings, Washington Navy Yard Central Yard NHL, and the Washington Navy Yard Eastern Extension Historic District are not related to any particular minority group and would not disproportionately impact low-income or minority populations. There are no adverse effects to cultural resources that would result in environmental health or safety risks to children. Therefore, Alternative 1A would have no impacts to cultural resources that would cause disproportionately high or adverse health or environmental effects on any low-income or minority populations or result in environmental health and safety risks that would disproportionately affect children.

Land Use/Zoning

As described in Section 3.4, parcels transferred to the developer would be subject to the comprehensive plan amendment and zoning processes and approval of the NCPC for mixed-use development. Land use and zoning impacts would not cause disproportionately high and adverse health or environmental effects on any minority or low-income populations. Therefore, Alternative 1A would have no environmental health and safety risks associated with land use and zoning that would disproportionately affect children.

Hazardous Materials and Wastes

As described in Section 3.5, areas of the WNY Southeast Corner contain contaminated soils. Impacts from the contaminated soils would be similar to those described under the No Action Alternative; however, exposure risks during construction would be lower because there are not as many residences nearby and there are not locations with high concentrations of children. Therefore, hazardous materials and wastes impacts would not cause disproportionately high and adverse health or environmental effects on any minority or low-income populations, nor would there be impacts that disproportionately affect children.

Water Resources

As described in Section 3.6, potential impacts to water resources would be related to flood event risks in the WNY Southeast Corner that would be managed similarly to those described for the No Action Alternative. There are no low-income or minority populations or high concentrations of children adjacent to the WNY Southeast Corner. Therefore, land exchange with private development of the WNY Southeast Corner under Alternative 1A would not cause disproportionately high and adverse health or environmental effects on minority and low-income populations from the risk of flooding. Also, land exchange with private development of the WNY Southeast Corner under Alternative 1A would not cause environmental health and safety risks that disproportionately affect children from the risk of flooding.

Noise

As described in Section 3.7.6.2 and Table 3.7-4, the estimated temporary increase in noise during construction at the WNY Southeast Corner would be similar to noise impacts described for the No Action Alternative; however, the impacts would be lower because there are fewer sensitive receptors nearby. Therefore, noise impacts would not cause disproportionately high and adverse health or environmental effects on any minority or low-income populations, and no significant impacts to the health and safety of children.

Air Quality

As described in Section 3.8, air quality impacts under Alternative 1A would not be significant and would be centered around the WNY Southeast Corner, which is not in a low-income or minority area. Therefore, air impacts would not have a disproportionate impact on low-income or minority populations. Air emissions would be concentrated at the construction site in the area of the WNY Southeast Corner where children's access would be limited. Therefore, air emissions from Alternative 1A would not result in environmental health or safety risks that would disproportionately affect children.

Socioeconomics

As described in Section 3.9, socioeconomics impacts under Alternative 1A would primarily have beneficial effects and would be similar to those described for the No Action Alternative except that the magnitude of impacts would be larger because of the larger development but still minor. The potential impacts to businesses would have no environmental health or safety risks that would disproportionately affect children and any potentially hazardous construction sites would be fenced off to prevent access to children and other members of the public. Therefore, socioeconomic impacts are not expected to disproportionately impact low-income or minority populations, nor would there be impacts that disproportionately affect children.

Utilities and Infrastructure

As described in Section 3.11, there may be temporary impacts to utility services. Impacts would be the same as those described for the No Action Alternative. The nature of the potential utilities and infrastructure impacts under Alternative 1A would have no environmental health or safety risks that would disproportionately affect children. Therefore, any potential impacts are not expected to disproportionately impact low-income or minority populations, nor would there be impacts that disproportionately affect children

Impacts from Reuse of SEFC E Parcels with Construction and Operation of Relocated Navy Museum

Short-term construction impacts from development of the SEFC E Parcels under Alternative 1A would generally be the same as those described for the No Action Alternative. Therefore, under Alternative 1A, the risk of flooding adjacent to the SEFC E Parcels would be similar to the risk described for the No Action Alternative. The Navy would implement appropriate measures to alleviate impacts from flood waters through structural means and preserving or repairing natural drainage to the extent possible. The measures and design considerations would also need to ensure that the building would not obstruct runoff from upgradient areas that could contribute to flood risks on site or in adjacent properties. Therefore, Alternative 1A would not result in disproportionate impacts to minority or low-income populations and children.

Similar to the No Action Alternative, during construction of the relocated Navy Museum, potentially significant, temporary noise impacts (such as pile driving) could occur where children are likely to be present due to the location of Van Ness Elementary School directly across M Street from the SEFC E Parcels, but there would be no long-term or future permanent noise impacts at the SEFC E Parcels. Therefore, Alternative 1A would not cause environmental health and safety risks that may disproportionately affect children. Noise-sensitive receptors, such as Van Ness Elementary School, were added to the distribution list of the Draft EIS. The Navy is consulting with Van Ness Elementary School to identify potential mitigation measures if needed.

Temporary adverse impacts that may occur due to construction traffic around the SEFC E Parcels under Alternative 1A may impact low-income and minority areas north of M Street; however, primary construction activities would occur in locations that are not low-income or minority. The nearest impacted adjacent locations to the west of the SEFC E Parcels are not low-income or minority areas, so the impacts that may occur would not be disproportionate. During operation of Alternative 1A, impacts would be the same as those described for the No Action Alternative except that increased traffic would be related to museum visitors rather than residents or office workers.

3.10.3.3 Alternative 1B Land Acquisition through Land Exchange with Navy Administrative Development

The impacts of land acquisition through land exchange under Alternative 1B are discussed below, followed by the impacts of construction and operation of Navy administrative development on the SEFC E Parcels.

Impacts from Land Acquisition through Land Exchange

Impacts from land acquisition through land exchange under Alternative 1B, as well as private development and in-kind considerations on the WNY Southeast Corner, are the same as those described for Alternative 1A.

Impacts from Reuse of SEFC E Parcels with Construction and Operation of Navy Administrative Development

Short-term construction impacts under Alternative 1B would generally be the same as those described for the No Action Alternative. Therefore, under Alternative 1B, the risk of flooding adjacent to the SEFC E Parcels would be similar to the risk described for the No Action Alternative. The Navy would implement appropriate measures to alleviate impacts from flood waters through structural means and preserving or repairing natural drainage to the extent possible. The measures and design considerations would also need to ensure that the building would not obstruct runoff from upgradient areas that could contribute to flood risks on site or in adjacent properties. Therefore, Alternative 1B would not result in disproportionately high and adverse health or environmental effects on minority or low-income populations and children.

Similar to the No Action Alternative, during construction of Navy administrative development, potentially significant, temporary noise impacts (such as pile driving) could occur where children are likely to be present due to the location of Van Ness Elementary School directly across M Street from the SEFC E Parcels, but there would be no long-term or future permanent noise impacts at the SEFC E Parcels. Alternative 1B would not cause environmental health and safety risks that may disproportionately affect children. Noise-sensitive receptors, such as Van Ness Elementary School, were added to the distribution list of the Draft EIS. The Navy is consulting with Van Ness Elementary School to identify potential mitigation measures if needed.

Temporary adverse impacts that may occur due to construction traffic around the SEFC E Parcels under Alternative 1B may impact low-income and minority areas north of M Street; however, primary construction activities would occur in locations that are not low-income or minority. The nearest impacted adjacent locations to the west of the SEFC E Parcels are not low-income or minority areas, so the impacts that may occur would not be disproportionate. Impacts related to traffic would be similar to those under Alternative 1A, but museum visitor traffic under Alternative 1A would peak midday whereas traffic patterns under Alternative 1B would be heavier during peak traffic times in the morning and

afternoon, which would lead to greater impacts. Beneficial socioeconomic impacts related to construction would be lower. Adverse effects to historic properties would be similar to but slightly less than those described for Alternative 1A due to different development on the SEFC E Parcels.

3.10.3.4 Alternative 1C Land Acquisition through Land Exchange with No Development

Impacts from Land Acquisition through Land Exchange

Impacts from the land acquisition thorough land exchange under Alternative 1C, as well as private development and in-kind considerations on the WNY Southeast Corner, are the same as those described for Alternative 1A.

Impacts from No Development on SEFC E Parcels

Impacts under Alternative 1C would be lower than those described under the No Action Alternative. Alternative 1C would not cause disproportionately high and adverse health or environmental effects on any minority or low-income populations, and there are no environmental health and safety risks associated with Alternative 1C that would disproportionately affect children. Other than utility connections for maintenance of existing buildings, with no construction projects in the SEFC E Parcels under Alternative 1C, there would be no short-term or long-term impacts other than those described for the land exchange. Beneficial socioeconomic impacts related to construction would not occur under Alternative 1C.

3.10.3.5 Alternative 2A Direct Land Acquisition with Construction and Operation of Relocated Navy Museum on SEFC E Parcels

The impacts of direct land acquisition under Alternative 2A are discussed below, followed by the impacts of construction and operation of a relocated Navy Museum on the SEFC E Parcels.

Impacts of the direct land acquisition under the Alternative 2A would be the same as those described under Alternative 1A except impacts from development of the WNY Southeast Corner would not occur. Socioeconomic benefits of the development of the WNY Southeast Corner and in-kind considerations would not occur under Alternative 2A. Under Alternative 1A, the net reduction in federal ownership of land was deemed to be a socioeconomic benefit, due to the increased tax base. Under Alternative 2A, the direct land acquisition would result in a net increase in federal land ownership and a reduction in the tax base, which would be a negative socioeconomic impact to tax revenues. However, the reduced property tax revenues would be a negligible portion of overall revenues and would not disproportionately impact low-income or minority populations.

Impacts from reuse of SEFC E Parcels with construction and operation of the Navy Museum under Alternative 2A would be the same as the impacts from construction and operation of the Navy Museum described under Alternative 1A. Noise-sensitive receptors, such as Van Ness Elementary School, were added to the distribution list of the Draft EIS. The Navy is consulting with Van Ness Elementary School to identify potential mitigation measures if needed.

3.10.3.6 Alternative 2B Direct Land Acquisition with Navy Administrative Development

Under Alternative 2B, socioeconomic impacts from direct land acquisition of the SEFC E Parcels are the same as those described for Alternative 2A.

Impacts from reuse of SEFC E Parcels with construction and operation of administrative facilities under Alternative 2B would be the same as the impacts of construction and operation of administrative facilities described under Alternative 1B. Noise-sensitive receptors, such as Van Ness Elementary School, were added to the distribution list of the Draft EIS. The Navy is consulting with Van Ness Elementary School to identify potential mitigation measures if needed.

3.10.3.7 Alternative 2C Direct Land Acquisition with No Development

Under Alternative 2C, impacts from direct land acquisition of the SEFC E Parcels are the same as those described under Alternative 2A. There would be no disproportionately high and adverse impacts from the Navy acquiring the SEFC E Parcels. Impacts from leaving the parcels in their current state with no development under Alternative 2C would be the same as the impacts described under Alternative 1C. Therefore, Alternative 2C would not cause disproportionately high and adverse health or environmental effects on any minority or low-income populations, and there are no environmental health and safety risks associated with Alternative 2C that would disproportionately affect children. Other than utility connections to maintain existing buildings, with no construction project in the SEFC E Parcels under Alternative 2C, there would be no short-term or long-term impacts other than those described for the direct land acquisition.

3.10.4 Summary of Impacts and Conclusions

Based on the analysis of potential impacts presented above, construction on the SEFC E Parcels under the No Action Alternative and Alternatives 1A, 1B, 2A, and 2B would have a similar flooding risk as the No Action Alternative, and potentially significant, temporary construction noise impacts on Van Ness Elementary School, but there would be no long-term or future permanent noise impacts. These impacts would not result in disproportionately high and adverse effects on minority and low-income populations, and health and safety risks that may disproportionately affect children. Impacts to all other resources would not have disproportionately high and adverse effects on minority and low-income populations or children. Alternatives 1C and 2C would have no impacts to low-income or minority populations or increased health and safety risks to children.

3.11 Utilities and Infrastructure

This section discusses the existing infrastructure for the utilities serving the WNY and SEFC E Parcels. The utilities covered in this assessment include potable water, wastewater, electricity, telecommunications, solid waste, and natural gas. Transportation systems and traffic are addressed separately in Section 3.2. Stormwater is discussed in Section 3.6, *Water Resources*.

3.11.1 Regulatory Setting

EO 13693, *Planning for Federal Sustainability in the Next Decade*, requires federal departments and agencies to enact specific actions and operations outlined within the EO to reduce agency direct GHG emissions by at least 40 percent over the next decade. Improved environmental performance and federal sustainability will be achieved by reducing energy use and cost. Pursuing clean sources of energy will improve energy and water security.

Chief of Naval Operation 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.

AT standards are described in Section 1.3, *Purpose of and Need for the Proposed Action*. These standards require all DoD Components to adopt and adhere to common criteria and minimum construction standards to mitigate antiterrorism vulnerabilities and terrorist threats.

3.11.2 Affected Environment

This section provides a description of the existing conditions for infrastructure at the WNY and SEFC E Parcels. The infrastructure located on the WNY is owned and maintained by NAVFAC (NAVFAC Washington, 2017a), except for the natural gas system.

3.11.2.1 Potable Water

Washington Aqueduct, a division of the Baltimore District, USACE, treats an average of 135 million gallons per day (gpd) of water sourced from the Potomac River at their Dalecarlia and McMillan water treatment plants, and distributes it to the surrounding Washington, D.C. area (USACE, 2022). The combined average treatment capacity of the two plants is 284 million gpd (NAVFAC Washington, 2022). DC Water purchases treated drinking water from Washington Aqueduct and distributes it to their customers, including the WNY and SEFC. A main connects NAVFAC's WNY distribution system to the DC Water system. Another main provides water from the DC Water system to the SEFC (NAVFAC Washington, 2022).

3.11.2.2 Wastewater

In this section, wastewater refers to sanitary sewage from buildings, such as residences, offices, supply and storage, and the existing museum. Most of the wastewater collection system at the WNY flows by gravity to a pump station adjacent to the SEFC E Parcels, near the Isaac Hull Avenue gate. The pump station conveys WNY wastewater to the DC Water wastewater collection system through a forcemain. Wastewater from the SEFC flows into a line that pumps north toward M Street (NAVFAC Washington, 2022). The wastewater is ultimately conveyed to the Blue Plains Wastewater Treatment Plant, which currently treats about 300 million gpd, but has the capacity to treat over 1 billion gpd at peak flow (DC Water, 2022b).

3.11.2.3 Electricity

The WNY receives electrical services from the newly constructed Potomac Electric Power Company (PEPCO) Southwest Waterfront/Buzzard Point Substation. This substation was completed in 2017 to provide capacity to accommodate the electrical needs for existing customers and planned development in the Capitol Riverfront and Southwest Waterfront areas (PEPCO, 2017), including the SEFC. There are four PEPCO feeders that bring service to the WNY (PEPCO, 2004).

Each PEPCO feeder can provide 400 Amp at 13.2 kilovolts or 9 megawatts (MW). The two feeders per bus section can provide 18 MW. Currently, the WNY can use about 9 MW on summer days, indicating the existing system currently has ample spare capacity (Truong, 2022).

3.11.2.4 Telecommunications

Telecommunications services are provided to the WNY and SEFC by Verizon and consist of both underground and above ground lines (GSA, 2004). There are no known concerns with the service (NAVFAC Washington, 2017a).

3.11.2.5 Solid Waste

Domestic refuse placed in designated dumpsters on the WNY is collected daily by a private contractor. Solid wastes are deposited at approved sanitary landfills outside of D.C. (NAVFAC Washington, 2017a). For D.C., large apartment buildings, mixed-use residential/commercial buildings, and commercial properties use private contractors for trash collection services (D.C. Department of Public Works, 2022). The majority of residential or commercial trash, yard waste, and associated materials collected at transfer stations operated by the D.C. Department of Public, are disposed of at the Fairfax County Energy Resource Recovery Facility in Lorton, Virginia. (D.C. Department of Public Works, 2022)

3.11.2.6 Natural Gas

Washington Gas serves 1.2 million customers in Washington, D.C.; Maryland; and Virginia, including the WNY and SEFC. They supply the natural gas to the installation as well as owning and maintaining the system. There are two gas mains servicing the area. Currently, no known issues with the network are documented (NAVFAC Washington, 2017a).

3.11.3 Environmental Consequences

This section evaluates potential impacts to utilities and infrastructure associated with implementation of the alternatives. The types of impacts that could occur from the alternatives include service disruption of utilities during construction and permanent relocation of existing infrastructure, as well as reaching or exceeding utility service capacity because of new project-related demand.

3.11.3.1 No Action Alternative

The No Action Alternative assumes the private developer would proceed with the development of the SEFC E Parcels site. Plans include the construction of approximately 866,000 square feet of mixed-use development (538,000 square feet of residential use and 328,000 square feet of office use, see Table 2.3-1). Upon completion of construction, approximately 1,240 residents would live there, while approximately 985 employees would work there. Overall, this development would increase utility loads on the services that provide utilities to the WNY and SEFC, but there would be no significant impacts to the utility systems owned and maintained by NAVFAC. For each utility, the following sections address impacts that could result from private development of the SEFC E Parcels under the No Action Alternative.

Potable Water

The planned private development at the SEFC E Parcels would require the installation of water lines to service two new buildings. Existing water lines to Buildings 74 and 202 would be upgraded or replaced, resulting in more reliable and efficient water service. During construction, potential impacts could include short-term, temporary disruption of localized water service. This disruption of service could occur while connecting water lines from the two new buildings to the existing system, as well as upgrades or replacement of existing water lines to Buildings 74 and 202. Connections and upgrades to existing water systems are considered routine. With proper planning and coordination by the contractor, no significant impacts would be anticipated.

Potable water demand associated with the planned private development at the SEFC E Parcels is estimated at approximately 182,450 gpd. This estimate is based on approximately 2,225 people (1,240 residents and 985 workers) with an average use of potable water of 82 gpd (U.S. Geological Survey, 2015). The estimated demand of approximately 182,450 gpd of potable water represents 0.06 percent

of daily potable water capacity. Therefore, adequate service capacity for potable water could meet the demand under the No Action Alternative.

Wastewater

The planned private development at the SEFC E Parcels would require the installation of wastewater lines to service two new buildings. Existing wastewater lines to Buildings 74 and 202 would be upgraded or replaced. Old wastewater lines would likely be removed. Potential impacts to the wastewater collection system during construction would be limited to connecting the existing wastewater system to new and upgraded development at the SEFC E Parcels. With proper planning and coordination by the contractor, no significant impacts would be likely for routine connections and upgrades to existing wastewater systems.

Wastewater flow associated with the planned private development at the SEFC E Parcels is estimated at approximately 173,330 gpd (95% of water demand), which represents 0.02 percent of available wastewater treatment capacity. Thus, adequate service capacity for wastewater treatment could meet the demand under the No Action Alternative.

Electricity

The planned private development at the SEFC E Parcels would require the installation of electrical lines to service two new buildings. Existing electrical lines to Buildings 74 and 202 would be upgraded or replaced. Potential impacts to PEPCO electrical systems during construction could include brief and intermittent service interruptions near the SEFC E Parcels connecting to the existing power system. Once connected, reliable electrical service would be provided to new and renovated buildings at the SEFC E Parcels.

The planned private development of approximately 866,000 square feet of new and renovated buildings at the SEFC E Parcels would increase the overall demand on the existing electrical system. Power demand associated with development at the SEFC E Parcels would be met by the PEPCO Southwest Waterfront/Buzzard Point Substation. This relatively new distribution substation was designed to support existing demand along with planned development in the Capitol Riverfront and Southwest Waterfront areas (PEPCO, 2017). As a result, ample power capacity is available to accommodate the needs of the SEFC E Parcels, along with other demands in the area.

Telecommunications

The planned private development at the SEFC E Parcels would require the installation of new telecommunication lines and equipment to service two new and two existing buildings. Construction activities have the potential to result in brief and intermittent service interruptions near the SEFC E Parcels. Once connected, reliable telecommunications service would be provided to the site.

Solid Waste

Solid waste would be generated during and after construction of the planned private development at the SEFC E Parcels. Disposal and recycling of solid waste generated during construction would be the responsibility of the contractor. Construction and demolition debris would be hauled, recycled, and/or disposed of as part of the contract. After construction, solid waste would be collected and disposed at the energy resource recovery facility or approved sanitary landfills outside of D.C.

Natural Gas

It is unknown if natural gas would be used for the planned, private development at the SEFC E Parcels. If used, any connection would be coordinated through Washington Gas. Potential brief disruptions to existing gas distribution could occur in the area during connection. Any natural gas demands for the private development would be anticipated to be accommodated by the service capacity of the system.

3.11.3.2 Alternative 1A Land Acquisition through Land Exchange with Construction and Operation of Relocated Navy Museum on SEFC E Parcels (Preferred Alternative)

Impacts to utilities and infrastructure from land acquisition through land exchange under Alternative 1A are discussed below, together with impacts from construction and operation of a relocated Navy Museum on the SEFC E Parcels.

Land acquisition through land exchange would involve capping and rerouting the existing NAVFAC utility infrastructure in the 15 acres of the WNY Southeast Corner. Also, the new utilities for the redeveloped southeast corner would be connected to local service provider connections outside of the WNY. Approximately 473 staff working in 6 buildings on the WNY Southeast Corner would be relocated to existing WNY facilities. The utility demands associated with these staff would be relocated with the workers to their new spaces. There would be no significant impacts to the NAVFAC utilities on the WNY associated with the land exchange or relocation of existing functions from the WNY Southeast Corner.

Private development on the WNY Southeast Corner would potentially include more than two million square feet of new and renovated building space including 1,300 residential units with 2,990 residents, as well as space for 1,776 office and retail space workers. Additionally, the developer would provide other in-kind considerations to the Navy including renovation, rehabilitation, and repair of facilities, and an integrated stormwater management system.

When compared to the No Action Alternative, private development on the WNY Southeast Corner and a Navy Museum on the SEFC E Parcels would be approximately 1.5 million square feet larger (No Action Alternative development at approximately 866,000 square feet, compared to WNY Southeast Corner development at approximately 2,037,840 square feet and Navy Museum on SEFC E Parcels at approximately 347,600 square feet). Also, private development on the WNY Southeast Corner and a Navy Museum on the SEFC E Parcels would have more people when compared to the No Action Alternative (No Action Alternative estimated number of 985 workers and 1,240 residents, compared to WNY Southeast Corner development estimated number of 2,990 residents and 1,776 office/retail workers and Navy Museum estimated number of 80 employees and 1.1 million visitors). The larger size of private development on the WNY Southeast Corner and a Navy Museum on the SEFC E Parcels combined with more people would require greater demand than the No Action Alternative for utilities.

For each utility, the following sections present impacts from private development on the WNY Southeast Corner, in-kind considerations, and reuse of SEFC E Parcels with a relocated Navy Museum.

Potable Water

In-kind considerations at the WNY would not involve potable water service. Private development on the WNY Southeast Corner would require the installation of water lines to service new buildings. Existing water lines to Buildings 68 and 70 would be upgraded or replaced, resulting in more reliable and efficient water service. During construction, potential impacts could include short-term, temporary disruption of localized water service. This disruption of service could occur while connecting water lines

from the new buildings to the existing system, as well as upgrades or replacement of existing water lines to Buildings 68 and 70.

Construction of the relocated Navy Museum could impact the NAVFAC potable water system when connecting to the existing system after the water line feeding the Navy Museum is constructed. The SEFC E Parcels are in proximity to the NAVFAC connection to the DC Water system. Possible connections to the NAVFAC system exist along the watermains near the DC Water connection. Both mains are sizable and have ample capacity to accept the demand from the proposed museum. Connections and upgrades to existing water systems are considered routine. With proper planning and coordination by the contractor, no significant impacts would be anticipated.

Potable water demand associated with the private development on the WNY Southeast Corner is estimated at 391,140 gpd. This estimate is based on approximately 4,770 people (2,990 residents and 1,776 workers) using an average of 82 gpd of potable water (U.S. Geological Survey, 2015).

Potable water demand associated with the relocated Navy Museum is estimated at 11,000 gpd, based on 1,000,000 visitors per year (average: 2,740 visitors per day at 3 gallons/visitor, plus 100 staff at 30 gallons/staff). The estimated demand of the combined 402,140 gpd of potable water represents 0.14 percent of daily supply capacity, which is roughly twice the demand under the No Action Alternative. The upstream DC Water system has ample service capacity to meet this additional demand for potable water.

Implementation of Alternative 1A would not result in significant impacts on the potable water distribution system or service capacity.

Wastewater

In-kind considerations at the WNY would not involve wastewater service. Private development on the WNY Southeast Corner would require the installation of wastewater lines to service new buildings. Existing wastewater lines to Buildings 68 and 70 would be upgraded or replaced. Potential impacts to the wastewater collection system during construction would be limited to rerouting the existing wastewater system to connect it to the District's wastewater service.

Construction of the relocated Navy Museum could impact the NAVFAC wastewater collection system when connecting to the existing system after the wastewater collection system feeding the museum is constructed. The SEFC E Parcels are in proximity to the pump station that connects the NAVFAC collection system to the DC Water wastewater collection system. The museum could connect to the NAVFAC system directly at the pump station or the existing gravity main, just upstream of the pump station. Both connection points have ample capacity to accept the wastewater flow from the proposed museum. With proper planning and coordination by the contractor, no significant impacts would be anticipated for routine connections and upgrades to existing wastewater systems.

Wastewater flow associated with private development on the WNY Southeast Corner is estimated at approximately 371,580 gpd (95% of water demand). Wastewater flow associated with the relocated Navy Museum is estimated at 10,450 gpd, based on 1,000,000 visitors per year (95% of water demand). This estimated demand for the combined treatment of approximately 382,030 gpd of wastewater represents 0.04 percent of available wastewater treatment capacity, which is more than twice the demand under the No Action Alternative. The downstream DC Water wastewater collection system has ample service capacity to accept this additional demand for wastewater treatment.

Implementation of Alternative 1A would not result in significant impacts to the wastewater collection system or service capacity for wastewater treatment.

Electricity

Private development on the WNY Southeast Corner, along with some of the in-kind considerations at the WNY, would require the installation of electric lines to service new buildings and relocated Entry Control Point. Existing electric lines to Buildings 68, 70, 405, 386 and Piers 1 and 2 would be upgraded or replaced. Potential impacts to PEPCO electrical systems during construction could include brief and intermittent service interruptions near the WNY Southeast Corner when connecting to the existing power system.

Construction of the relocated Navy Museum could impact the NAVFAC electrical system with brief and intermittent service interruptions near the SEFC E Parcels when connecting to the existing power system. Once connected, reliable electrical service would be provided to new and renovated buildings at the WNY Southeast Corner and the relocated Navy Museum.

Private development of approximately 2,037,840 square feet of new and renovated buildings at the WNY Southeast Corner, along with the relocated Navy Museum, would increase the overall demand on the existing electrical system. As the square footage of development for Alternative 1A is roughly double that of the No Action Alternative, the power demand for Alternative 1A is estimated at twice that of the No Action Alternative. There are no currently identified electricity shortfalls in capacity or infrastructure at or surrounding the WNY and SEFC E Parcels. Power demand associated with development at the WNY Southeast Corner and SEFC E Parcels would be met by the PEPCO Southwest Waterfront/Buzzard Point Substation. This relatively new distribution substation was designed to support existing demand along with planned development in the Capitol Riverfront and Southwest Waterfront areas (PEPCO, 2017). Similar to the No Action Alternative, ample power capacity would be available to accommodate the needs of the WNY Southeast Corner and the Navy Museum, as well as other demands in the area.

Implementation of Alternative 1A would not result in significant impacts to the electrical distribution system or service capacity for power.

Telecommunications

The planned private development on the WNY Southeast Corner and one of the in-kind considerations would require the installation of new telecommunication lines and equipment to service three new and two existing buildings, as well as the relocated Entry Control Point. New telecommunication lines and equipment would be installed as part of the construction of the relocated Navy Museum. Construction activities have the potential to result in brief and intermittent service interruptions near the WNY Southeast Corner and the SEFC E Parcels. There are no currently identified telecommunications shortfalls at or surrounding the WNY and SEFC E Parcels. Similar to the No Action Alternative, upon connection, reliable telecommunications service would be provided to the sites. Implementation of Alternative 1A would not result in significant impacts on the telecommunications system or service.

Solid Waste

Solid waste would be generated during and after construction of private development on the WNY Southeast Corner and the relocated Navy Museum. Disposal and recycling of solid waste generated during construction would be the responsibility of the contractor. Construction and demolition debris would be hauled, recycled, and/or disposed of as part of the contract. After construction on the WNY

Southeast Corner, solid waste would be collected and disposed at approved sanitary landfills outside of D.C. Once the museum is constructed and receiving visitors, refuse would be placed in designated dumpsters, collected daily by a private contractor, and deposited at approved sanitary landfills outside of D.C. Solid wastes generated from the private development would be disposed of at the energy resource recovery facility or approved sanitary landfills. Implementation of Alternative 1A would not result in significant impacts to solid waste collection system or service.

Natural Gas

In-kind considerations at the WNY are not anticipated to use natural gas. It is unknown if natural gas would be used for the private development at the WNY Southeast Corner or the relocated Navy Museum at the SEFC E Parcels. If used, any connections would be coordinated through Washington Gas. Potential brief disruptions to existing gas distribution could occur in the areas during connection. There are no currently identified natural gas shortfalls at or surrounding the WNY and SEFC E Parcels. Any natural gas demands for the private development and museum operations would be anticipated to be accommodated by the service capacity of the system. Implementation of the Alternative 1A would not result in significant impacts to the natural gas distribution system or service capacity.

Overall, implementation of Alternative 1A would not result in significant impacts to utility and infrastructure distribution systems and service capacity from land acquisition through land exchange and reuse of the SEFC E Parcels with construction and operation of a relocated Navy Museum.

3.11.3.3 Alternative 1B Land Acquisition through Land Exchange with Construction and Operation of Navy Administrative Development on SEFC E Parcels

Impacts to utilities and infrastructure from land acquisition through land exchange under Alternative 1B are discussed below, together with impacts from construction and operation of Navy administrative development on the SEFC E Parcels.

Impacts to utilities and infrastructure from land acquisition through land exchange, along with relocation of functions from the WNY Southeast Corner to other areas on the WNY, would be the same as described for Alternative 1A.

When compared to the No Action Alternative, private development on the WNY Southeast Corner and Navy administrative development at the SEFC E Parcels would be approximately 1.8 million square feet larger (No Action Alternative development at approximately 866,000 square feet, compared to WNY Southeast Corner development at approximately 2,037,840 square feet and Navy administrative development on SEFC E Parcels at approximately 582,000 square feet). Also, private development on the WNY Southeast Corner and Navy administrative development at the SEFC E Parcels would have more people when compared to the No Action Alternative (No Action Alternative estimated number of 985 workers and 1,240 residents, compared to WNY Southeast Corner estimated number of 2,990 residents and 1,776 office/retail workers and Navy administrative development estimated number of 4,275 employees). The larger size of private development on the WNY Southeast Corner and Navy administrative development at the SEFC E Parcels combined with more people would require greater demand than the No Action Alternative for utilities.

During construction of private development on the WNY Southeast Corner and Navy administrative development on the SEFC E Parcels, potential service disruption impacts to utilities would be similar to impacts previously described for Alternative 1A. For each utility, the following sections focus on the

demand for utilities from private development on the WNY Southeast Corner, in-kind considerations, and reuse of SEFC E Parcels with Navy administrative development.

Potable Water

Potable water demand associated with the private development on the WNY Southeast Corner is estimated at 391,140 gpd. This estimate is based on approximately 4,770 people (2,990 residents and 1,776 workers) using an average of 82 gpd of potable water (U.S. Geological Survey, 2015). Potable water demand associated with Navy administrative development at the SEFC E Parcels is estimated at 128,250 gpd, based on 4,275 staff at 30 gallons/staff). The estimated demand of the combined 519,390 gpd of potable water represents 0.18 percent of daily supply capacity, which is more than twice the demand under the No Action Alternative. The upstream DC Water system has ample service capacity to meet this additional demand for potable water. Implementation of Alternative 1B would not result in significant impacts on the potable water distribution system or service capacity.

Wastewater

Wastewater flow associated with private development on the WNY Southeast Corner is estimated at approximately 371,580 gpd (95% of water demand). Wastewater flow associated with Navy administrative development at the SEFC E Parcels is estimated at 121,840 gpd, based on 4,275 staff (95% of water demand). This estimated demand for the combined treatment of approximately 493,423 gpd of wastewater represents nearly 0.05 percent of available wastewater treatment capacity, which is more than twice the demand under the No Action Alternative. The downstream DC Water wastewater collection system has ample service capacity to accept this additional demand for wastewater treatment. Implementation of Alternative 1B would not result in significant impacts to the wastewater collection system or service capacity for wastewater treatment.

Electricity

Private development on the WNY Southeast Corner, along with Navy administrative development at the SEFC E Parcels, would increase the overall demand on the existing electrical system. As the square footage of development for Alternative 1B is roughly three times that of the No Action Alternative, the power demand for Alternative 1B is estimated at three times that of the No Action Alternative. There are no currently identified electricity shortfalls in capacity or infrastructure at or surrounding the WNY and SEFC E Parcels. Power demand associated with development at the WNY Southeast Corner and SEFC E Parcels would be met by the PEPCO Southwest Waterfront/Buzzard Point Substation. This relatively new distribution substation was designed to support existing demand along with planned development in the Capitol Riverfront and Southwest Waterfront areas (PEPCO, 2017). Similar to the No Action Alternative, ample power capacity is available to accommodate the needs of the WNY Southeast Corner and the Navy Museum, as well as other demands in the area. Implementation of Alternative 1B would not result in significant impacts to the electrical distribution system or service capacity for power.

Telecommunications

Private development on the WNY Southeast Corner, the in-kind consideration of the relocated Entry Control Point, and Navy administrative development at the SEFC E Parcels would require additional telecommunications service. There are no currently identified telecommunications shortfalls at or surrounding the WNY and SEFC E Parcels. Similar to the No Action Alternative, upon connection, reliable telecommunications service would be provided to the sites. Implementation of Alternative 1B would not result in significant impacts on the telecommunications system or service.

Solid Waste

Solid waste would be generated during and after construction of private development on the WNY Southeast Corner and Navy administrative development at the SEFC E Parcels. Construction and demolition debris would be hauled, recycled, and/or disposed of as part of the contract. After construction on the WNY Southeast Corner, solid waste would be collected and disposed at approved sanitary landfills outside of D.C. After construction of Navy administrative development, refuse would be placed in designated dumpsters, collected daily by a private contractor, and deposited at approved sanitary landfills outside of D.C. This would be consistent with existing solid waste management at the WNY. Solid wastes generated from the private development would be disposed of at the energy resource recovery facility or approved sanitary landfills. Implementation of Alternative 1B would not result in significant impacts to solid waste collection system or service.

Natural Gas

It is unknown if natural gas would be used for the private development at the WNY Southeast Corner or Navy administrative development at the SEFC E Parcels. If used, any connections would be coordinated through Washington Gas. There are no currently identified natural gas shortfalls at or surrounding the WNY and SEFC E Parcels. Any natural gas demands for the private development and museum operations are anticipated to be accommodated by the service capacity of the system. Implementation of the Alternative 1B would not result in significant impacts to the natural gas distribution system or service capacity.

3.11.3.4 Alternative 1C Land Acquisition through Land Exchange with No Development on SEFC E Parcels

Impacts to utilities and infrastructure from land acquisition through land exchange under Alternative 1C are discussed below, together with impacts from not developing the SEFC E Parcels.

Impacts to utilities and infrastructure from land acquisition through land exchange, along with relocation of functions from the WNY Southeast Corner to other areas on the WNY, would be the same as described for Alternative 1A. Under Alternative 1C, no additional development would occur at the SEFC E Parcels beyond relocating the fence line. Relocation of the fence line would envelop Buildings 202 and 74. There are no plans to use these facilities, but new utility connections would be made to the WNY utility systems for maintenance purposes.

When compared to the No Action Alternative, private development on the WNY Southeast Corner and no development at the SEFC E Parcels would be approximately 1.2 million square feet larger (No Action Alternative development at approximately 866,000 square feet, compared to WNY Southeast Corner development at approximately 2,037,840 square feet and not developing the SEFC E Parcels). Also, private development on the WNY Southeast Corner and no development at the SEFC E Parcels would have more people when compared to the No Action Alternative (No Action Alternative estimated number of 985 workers and 1,240 residents, compared to WNY Southeast Corner estimated number of 2,990 residents and 1,776 office/retail workers, no people at the SEFC E Parcels). The larger size of private development on the WNY Southeast Corner and no development at the SEFC E Parcels combined with more people would require greater demand than the No Action Alternative for utilities.

During construction of private development on the WNY Southeast Corner and connection to WNY utility systems for maintenance, potential service disruption impacts to utilities would be similar to those previously described for Alternative 1A. Impacts from the demand for utilities under Alternative

1C is less than the impacts from the utility demand described above for Alternative 1A. The impacts from Alternative 1C would be similar for service disruption with less demand in comparison to previously described impacts from Alternative 1A. Therefore, implementation of Alternative 1C would not result in significant impacts to the utility demand or infrastructure.

3.11.3.5 Alternative 2A Direct Land Acquisition with Construction and Operation of Relocated Navy Museum on SEFC E Parcels

Direct land acquisition would have no impact on utilities and infrastructure. When compared to the No Action Alternative, a Navy Museum on the SEFC E Parcels would be approximately 518,400 square feet smaller (No Action Alternative development at approximately 866,000 square feet, compared to Navy Museum on SEFC E Parcels at approximately 347,600 square feet). The Navy Museum on the SEFC E Parcels would have fewer workers and no residents, but more visitors when compared to the No Action Alternative (No Action Alternative estimated number of 985 workers and 1,240 residents, compared to Navy Museum estimated number of 80 employees and 1.1 million visitors). The smaller size of a Navy Museum on the SEFC E Parcels combined with fewer people/more visitors would require less demand than the No Action Alternative for utilities.

Impacts to utilities and infrastructure from construction and operation of a Navy Museum under Alternative 2A would be the same as impacts from construction and operation of a Navy Museum described for Alternative 1A. Implementation of Alternative 2A would not result in significant impacts to utility and infrastructure distribution systems and service capacity from the reuse of the SEFC E Parcels with construction and operation of a relocated Navy Museum.

3.11.3.6 Alternative 2B Direct Land Acquisition with Construction and Operation of Navy Administrative Development on SEFC E Parcels

Direct land acquisition would have no impact on utilities and infrastructure. When compared to the No Action Alternative, a Navy administrative development on the SEFC E Parcels would be approximately 284,000 square feet smaller (No Action Alternative development at approximately 866,000 square feet, compared to Navy administrative development on SEFC E Parcels at approximately 582,000 square feet). Navy administrative development on the SEFC E Parcels would have 2,050 more people when compared to the No Action Alternative (No Action Alternative estimated number of 985 workers and 1,240 residents, compared to Navy administrative development estimated number of 4,275 employees). The smaller size of Navy administrative development on the SEFC E Parcels combined with more workers/no residents would require less demand than the No Action Alternative for utilities.

Impacts to utilities and infrastructure from construction and operation of a Navy administrative development under Alternative 2B would be the same as impacts described for construction and operation of a Navy administrative development described for Alternative 1B. Implementation of Alternative 2A would not result in significant impacts to utility and infrastructure distribution systems and service capacity from the reuse of the SEFC E Parcels with construction and operation of a relocated Navy Museum.

3.11.3.7 Alternative 2C Direct Land Acquisition with No Development on SEFC E Parcels

Direct land acquisition would have no impact on utilities and infrastructure. Impacts to utilities and infrastructure from relocating the fence line and connecting utilities to WNY utility systems for maintenance under Alternative 2C would be minor and short term. Because there would be no

development under Alternative 2C, utility demand for maintenance of Buildings 74 and 202 would be minor. Therefore, implementation of Alternative 2C would not result in significant impacts to the utility and infrastructure distribution systems and service capacity from not developing the SEFC E Parcels.

3.11.4 Summary of Impacts and Conclusions

Based on the analysis of potential impacts presented above, there would be no significant impacts to utilities and infrastructure distribution systems and service capacity from implementation of the No Action Alternative or the action alternatives. Alternatives 1A, 1B and 1C would require a greater demand for utilities than the No Action Alternative. Ample capacity with the service provider systems at the connection points could handle the increased demands associated with private development on the WNY Southeast Corner under Alternatives 1A, 1B, and 1C and Navy development on the SEFC E Parcels and Alternatives 1A, 1B, 2A, and 2B. Alternatives 2A, 2B, and 2C would require a lower utility demand than the No Action Alternative. Alternatives 1A, 1B, and 1C would require existing Navy utility infrastructure in the WNY Southeast Corner be capped and rerouted. There would be potential minor short-term impacts during the disconnection of these utilities. Under Alternatives 1C and 2C, utility connections to maintain Buildings 202 and 74 on the SEFC E Parcels would result in minor short-term impacts while connections are made.

3.12 Summary of Potential Impacts to Resources and Potential Mitigation Measures

A summary of the potential impacts associated with each of the action alternatives and the No Action Alternative are presented in Table 3.12-1. Table 3.12-2 provides a list of potential mitigation measures.

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Table 3.12-1 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1A: Land Acquisition through Land Exchange with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative1B: Land Acquisition through Land Exchange with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 1C: Land Acquisition through Land Exchange with No Development on SEFC E Parcels*	*Alternative 2A: Direct Land Acquisition with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative 2B: Direct Land Acquisition with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 2C: Direct Land Acquisition with No Development on SEFC E Parcels*
Transportation	• No significant impacts to traffic. Minor additional traffic impacts during the morning and afternoon peaks. • Near-failing conditions at the I-695 on-ramp at 11th Street in the morning and the off-ramp at 11th Street in the afternoon. • O Street Gate would continue to operate under existing conditions.	• No significant impacts to traffic. Minor additional traffic impacts during the morning and afternoon peaks. • Near-failing conditions at the I-695 on-ramp at 11th Street in the morning and the off-ramp at 11th Street in the afternoon. • O Street Gate with occasional queue spillback.	• Significant impacts to traffic due to serious new queue spillback in the morning, afternoon, and weekend peaks. • Near-failing conditions at the I-695 on-ramp at 11th Street in the morning and the off-ramp at 11th Street in the afternoon. • O Street Gate with serious queue spillback.	• No significant impacts to traffic. Minor additional traffic impacts during the morning and afternoon peaks. • Near-failing conditions at the I-695 on-ramp at 11th Street in the morning and the off-ramp at 11th Street in the afternoon. • O Street Gate with occasional queue spillback.	• No significant impacts to traffic. Minor additional traffic impacts during the morning and afternoon peaks. • Conditions at the I-695 on- and off- ramps would remain similar to existing conditions. • O Street Gate with occasional queue spillback.	• No significant impacts to traffic. Minor additional traffic impacts during the morning and afternoon peaks. • Near-failing conditions at the I-695 on-ramp at 11th Street in the morning and the off-ramp at 11th Street in the afternoon. • O Street Gate with occasional queue spillback.	• No significant impacts to traffic with no development on the WNY Southeast Corner or SEFC E Parcels. • Traffic would increase based on ambient growth with private development. • O Street Gate would continue to operate under existing conditions.
Cultural Resources	• Potential for adverse effects to undiscovered archaeological resources as described in the 2004 Final EIS for Development of the Southeast Federal Center (GSA, 2004). • Effects to historic properties from development of the SEFC E Parcels would be as described in the 2004 Final EIS for Development of the Southeast Federal Center (GSA, 2004.)	• Potential for adverse effects to undiscovered archaeological resources. • Could result in adverse effects to the WNY Central Yard NHL. • Visual elements would be inconsistent with the historic character of the WNY Eastern Extension Historic District and WNY Central Yard NHL and would present an adverse effect. • Potential adverse effects on nearby historic properties (e.g., Anacostia Park and L-Enfant Plan).	• Potential for adverse effects to undiscovered archaeological resources. • Same as Alternative 1A.	• Potential for adverse effects to undiscovered archaeological resources. • Same as Alternative 1A.	• Potential for adverse effects to undiscovered archaeological resources in the SEFC E Parcels. • No impact because no private development on WNY Southeast Corner.	• Potential for adverse effects to undiscovered archaeological resources in the SEFC E Parcels. • No impact because no private development on WNY Southeast Corner.	• No effect to undiscovered archaeological resources as a result of no change from existing conditions. • No impact because no private development on WNY Southeast Corner.

Table 3.12-1 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1A: Land Acquisition through Land Exchange with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative1B: Land Acquisition through Land Exchange with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 1C: Land Acquisition through Land Exchange with No Development on SEFC E Parcels*	*Alternative 2A: Direct Land Acquisition with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative 2B: Direct Land Acquisition with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 2C: Direct Land Acquisition with No Development on SEFC E Parcels*
	• Effects to historic properties from private development of the SEFC as described in the 2004 Final Environmental Impact Statement for Development of the Southeast Federal Center (GSA, 2004), including potential adverse effects to the visual setting of the WNY Annex Historic District and WNY Central Yard Historic District/NHL. • NEPA impacts would be significant but would be resolved by agreements with the developer and consulting parties.	• For the SEFC E Parcels, adverse effects to WNY Annex Historic District and WNY Central Yard Historic District/NHL. • Potential adverse effects to Buildings 74, 118, and 202 and the Navy Yard Boundary Wall. • Potential adverse effects on nearby historic properties (e.g., Anacostia Park and L-Enfant Plan). • NEPA impacts would be significant but would be resolved by agreements with the Navy, the developer, and consulting parties.	• Adverse effects to historic properties would be similar to but slightly less than those described for Alternative 1A due to different development on the SEFC E Parcels. • NEPA impacts would be significant but would be resolved by agreements with the Navy, the developer, and consulting parties.	• No adverse effect to historic properties because of no development on the SEFC E Parcels except for construction of a fence. • NEPA impacts would be significant but would be resolved by agreements with the Navy, the developer, and consulting parties.	• For the SEFC E Parcels, adverse effects to WNY Annex Historic District and WNY Central Yard Historic District/NHL. • Potential adverse effects to Buildings 74, 118, and 202 and the Navy Yard Boundary Wall. • Potential adverse effect on nearby historic properties (e.g., Anacostia Park and L-Enfant Plan). • NEPA impacts would be significant but would be resolved by agreements with the Navy and consulting parties.	• Adverse effects to historic properties would be similar but slightly less than those described for Alternative 2A due to different development on the SEFC E Parcels. • NEPA impacts would be significant but would be resolved by agreements with the Navy and consulting parties.	• No adverse effects to historic properties because of no new development on the SEFC E Parcels. • No significant impacts under NEPA since there would be no change to existing conditions.
Land Use/Zoning	• No change in land use or zoning from planned, private development at the SEFC E Parcels that is in accordance with *The Yards Master Plan*. • Compromises the overall AT posture for the WNY because mission-critical activities in the northwest area of WNY would be vulnerable to visual surveillance and acoustic and electronic eavesdropping.	• No significant impacts to land use and zoning from a shift in high-density, mixed-use development away from the SEFC E Parcels to the WNY Southeast Corner. • Private development on the WNY Southeast Corner would require zoning changes. • Improves the overall AT posture for the WNY by the Navy acquisition of the SEFC E Parcels and future use that is compatible with the AT posture for the WNY.	• No significant impacts to land use and zoning from a shift in high-density, mixed-use development away from the SEFC E Parcels to the WNY Southeast Corner. • Private development on the WNY Southeast Corner would require zoning changes. • Improves the overall AT posture for the WNY by the Navy acquisition of the SEFC E Parcels and future use that is compatible with the AT posture for the WNY.	• No significant impacts to land use and zoning from a shift in high-density, mixed-use development away from the SEFC E Parcels to the WNY Southeast Corner. • Private development on the WNY Southeast Corner would require zoning changes. • Improves the overall AT posture for the WNY by the Navy acquisition of the SEFC E Parcels.	• Impacts to land use and zoning from reduction of land designated and zoned for residential and commercial land use in support of a growing mixed-use community is not consistent with the *Comprehensive Plan for the National Capital*. • Improves the overall AT posture for the WNY by the Navy acquisition of the SEFC E Parcels and future use that is compatible with the AT posture for the WNY.	• Impacts to land use and zoning from reduction of land designated and zoned for residential and commercial land use in support of a growing mixed-use community is not consistent with the *Comprehensive Plan for the National Capital.* • Improves the overall AT posture for the WNY by the Navy acquisition of the SEFC E Parcels and future use that is compatible with the AT posture for the WNY.	• Impacts to land use and zoning from reduction of land designated and zoned for residential and commercial land use in support of a growing mixed-use community is not consistent with the *Comprehensive Plan for the National Capital.* • Improves the overall AT posture for the WNY by the Navy acquisition of the SEFC E Parcels.

Table 3.12-1 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1A: Land Acquisition through Land Exchange with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative1B: Land Acquisition through Land Exchange with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 1C: Land Acquisition through Land Exchange with No Development on SEFC E Parcels*	*Alternative 2A: Direct Land Acquisition with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative 2B: Direct Land Acquisition with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 2C: Direct Land Acquisition with No Development on SEFC E Parcels*
	• Potentially significant land use impacts on the WNY mission and the safety of personnel, facilities, and infrastructure from private development on the SEFC E Parcels. • Private development of the SEFC E Parcels would be incompatible with the WNY mission. • Significant land use impacts at the WNY. • No significant zoning impacts.	• Relocated Navy Museum on SEFC E Parcels is compatible with existing and planned land uses, and consistent with *Memorials and Museums Master Plan, Washington Navy Yard Installation Master Plan, and Lower Anacostia Waterfront/Near Southwest Area Element* and is a use compatible with AT posture for the WNY. • No significant impacts to land use or zoning.	• Navy administrative development on SEFC E Parcels is compatible with existing and planned land uses and compatible with the overall planning framework for the WNY. • No significant impacts to land use or zoning.	• Not developing the SEFC E Parcels is inconsistent with the *Comprehensive Plan for the National Capital* and the *Washington Navy Yard Installation Master Plan*, and incompatible with existing and planned uses along the M Street SE corridor. • Shifting planned residential and commercial land use from the SEFC E Parcels to the WNY Southeast Corner would not result in significant land use impacts. • No significant impacts to land use or zoning.	• Relocated Navy Museum on SEFC E Parcels is compatible with existing and planned land uses and consistent with *Memorials and Museums Master Plan, Washington Navy Yard Installation Master Plan,* and *Lower Anacostia Waterfront/Near Southwest Area Element.* • No significant impacts to land use or zoning.	• Navy administrative development on SEFC E Parcels is compatible with existing and planned land uses and compatible with the overall planning framework for the WNY. • No significant impacts to land use or zoning.	• No development on SEFC E Parcels is inconsistent with the *Comprehensive Plan for the National Capital* and the *Washington Navy Yard Installation Master Plan, and* incompatible with existing and planned uses along the M Street SE corridor. • Reducing planned residential and commercial land use in the SEFC E Parcels, in comparison to the No Action Alternative, would not be considered significant. • No significant impacts to land use or zoning.

Table 3.12-1 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1A: Land Acquisition through Land Exchange with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative1B: Land Acquisition through Land Exchange with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 1C: Land Acquisition through Land Exchange with No Development on SEFC E Parcels*	*Alternative 2A: Direct Land Acquisition with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative 2B: Direct Land Acquisition with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 2C: Direct Land Acquisition with No Development on SEFC E Parcels*
Hazardous Materials and Wastes	• All hazardous wastes would be handled and disposed of in accordance with all federal and local regulations. • No impact because private development would not impact the Hazardous Waste Storage Site.	• All hazardous wastes would be handled and disposed of in accordance with all federal and local regulations. • For the WNY Southeast Corner, the Navy would remain responsible for the contaminated sites, including adherence to long-term management requirements for sites that are located within areas that would be transferred. The developer would be responsible for coordinating termination with the regulators of the LUCs (if applicable) to construct residential buildings requiring conversion of the land use to "residential" or "unrestricted" and remediating the site to meet the soil standard for "residential" or "unrestricted" use.	• All hazardous wastes would be handled and disposed of in accordance with all federal and local regulations. • For the WNY Southeast Corner, impacts would be the same as under Alternative 1A.	• All hazardous wastes would be handled and disposed of in accordance with all federal and local regulations. • For the WNY Southeast Corner, impacts would be the same as under Alternative 1A.	• All hazardous wastes would be handled and disposed of in accordance with all federal and local regulations. • For the WNY Southeast Corner, the Navy would remain responsible for the contaminated sites, including adherence to long-term management requirements for sites.	• All hazardous wastes would be handled and disposed of in accordance with all federal and local regulations. • Same as Alternative 2A.	• All hazardous materials or generation of hazardous wastes would remain the same as existing conditions. • Same as Alternative 2A.
	• No impact because private development would not impact the Hazardous Waste Storage Site.	• No significant impacts to hazardous materials and wastes. An acceptable location for the Navy Hazardous Waste Storage Site would be identified prior to the land transfer, and the Navy would conduct appropriate NEPA analysis upon identification of a new site.	• Same as Alternative 1A.	• Same as Alternative 1A.	• No impact because the Hazardous Waste Storage Site would not need to be relocated.	• No impact because the Hazardous Waste Storage Site would not need to be relocated.	• No impact because the Hazardous Waste Storage Site would not need to be relocated.

Table 3.12-1 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1A: Land Acquisition through Land Exchange with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative1B: Land Acquisition through Land Exchange with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 1C: Land Acquisition through Land Exchange with No Development on SEFC E Parcels*	*Alternative 2A: Direct Land Acquisition with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative 2B: Direct Land Acquisition with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 2C: Direct Land Acquisition with No Development on SEFC E Parcels*
	• Any special hazards present in Buildings 74 and 202 on the SEFC E Parcels would be identified and remediated by the developer as a part of any building rehabilitation/reuse and would be a beneficial impact. • In accordance with the GSA EIS and ROD, the private developer would be required to remove contaminated soil during excavation of the foundation/garage or basement of any new structures. This would be beneficial by reducing the toxicity, mobility, and volume of hazardous constituents in the SEFC E Parcels soils.	• Any special hazards present in Buildings 74 and 202 would be identified and remediated by the Navy as a part of any building rehabilitation/reuse and would be a beneficial impact. • The Navy would be required to remove contaminated soil during excavation of the foundation/garage or basement of any new structures. This would be beneficial by reducing the toxicity, mobility, and volume of hazardous constituents in the SEFC E Parcels soils.	• Same as Alternative 1A. • Same as Alternative 1A.	• Any special hazards present in Buildings 74 and 202 would not be identified and remediated as a part of any building rehabilitation/reuse. • For the SEFC E Parcels, there would be no development, there would be no removal of contaminated soils. The toxicity, mobility, and volume of hazardous constituents in the SEFC E Parcels soils would remain the same.	• Any special hazards present in Buildings 74 and 202 would be identified and remediated by the Navy as a part of any building rehabilitation/reuse and would be a beneficial impact. • The Navy would be required to remove contaminated soil during excavation of the foundation/garage or basement of any new structures. This would be beneficial by reducing the toxicity, mobility, and volume of hazardous constituents in the SEFC E Parcels soils.	• Same as Alternative 2A. • Same as Alternative 2A.	• Any special hazards present in Buildings 74 and 202 would not be identified and remediated as a part of any building rehabilitation/reuse. • For the SEFC E Parcels, there would be no development, there would be no removal of contaminated soils. The toxicity, mobility, and volume of hazardous constituents in the SEFC E Parcels soils would remain the same.
Water Resources	• Potential impacts to water resources would not be significant with implementation of appropriate stormwater infrastructure.	• Potential impacts to water resources during construction and operation at the WNY Southeast Corner and SEFC E Parcels would not be significant with implementation of appropriate stormwater infrastructure and BMPs and compliance with permit conditions.	• Same as Alternative 1A.	• Potential impacts to water resources during construction and operation at the WNY Southeast Corner would not be significant with implementation of appropriate stormwater infrastructure and BMPs and compliance with permit conditions. Construction at the SEFC E Parcels would only include relocating the fence line and making utility connections to existing buildings for maintenance.	• The WNY Southeast Corner would remain in its current state. Potential impacts to water resources during construction and operation at the SEFC E Parcels would not be significant with implementation of appropriate stormwater infrastructure and BMPs and compliance with permit conditions.	• The WNY Southeast Corner would remain in its current state. Potential impacts to water resources during construction and operation at the SEFC E Parcels would not be significant with implementation of appropriate stormwater infrastructure and BMPs and compliance with permit conditions.	• The WNY Southeast Corner would remain in its current state. Construction at the SEFC E Parcels would only include relocating the fence line and making utility connections to existing buildings for maintenance. Potential impacts to water resources during construction and operation would not be significant.

Table 3.12-1 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1A: Land Acquisition through Land Exchange with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative1B: Land Acquisition through Land Exchange with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 1C: Land Acquisition through Land Exchange with No Development on SEFC E Parcels*	*Alternative 2A: Direct Land Acquisition with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative 2B: Direct Land Acquisition with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 2C: Direct Land Acquisition with No Development on SEFC E Parcels*
	• Flood risks would remain.	• Flood risks would remain.	• Flood risks would remain.	• Flood risks would remain.	• Flood risks would remain.	• Flood risks would remain.	• Flood risk would remain the same as existing conditions
Noise	• No private development would occur on the WNY Southeast Corner. • Temporary increase in noise by at least 10 dB at five noise-sensitive locations along M Street SE during construction (including potential pile driving) of planned private development on the SEFC E Parcels. • No long-term noise impacts from operation of facilities at the SEFC E Parcels. • Potentially significant temporary noise impacts at noise-sensitive locations during construction at the SEFC E Parcels. • No permanent noise impacts at the SEFC E Parcels.	• Temporary increase in noise up to 9 dB at noise-sensitive locations during construction (including any potential pile driving) of private development on the WNY Southeast Corner. • No long-term or permanent noise impacts at the WNY Southeast Corner. • Temporary increase in noise by at least 10 dB at five noise-sensitive locations along M Street SE during construction (including potential pile driving) of relocated Navy Museum on the SEFC E Parcels. • No long-term noise impacts from operation of facilities at the SEFC E Parcels. • Potentially significant temporary noise impacts at noise-sensitive locations during construction at the SEFC E Parcels. • No permanent noise impacts at the SEFC E Parcels.	• Temporary increase in noise up to 9 dB at noise-sensitive locations during construction (including any potential pile driving) of private development on the WNY Southeast Corner. • No long-term or permanent noise impacts at the WNY Southeast Corner. • Temporary increase in noise by at least 10 dB at five noise-sensitive locations along M Street SE during construction (including potential pile driving) of Navy administrative development on the SEFC E Parcels. • No long-term noise impacts from operation of facilities at the SEFC E Parcels. • Potentially significant temporary noise impacts at noise-sensitive locations during construction at the SEFC E Parcels. • No permanent noise impacts at the SEFC E Parcels.	• Temporary increase in noise up to 9 dB at noise-sensitive locations during construction (including any potential pile driving) of private development on the WNY Southeast Corner. • No long-term or permanent noise impacts at the WNY Southeast Corner. • No additional noise-generating development at the SEFC E Parcels beyond relocating the fence line and connecting utilities to existing buildings for maintenance. • No long-term noise impacts from maintenance of facilities at the SEFC E Parcels. • No significant impacts within the ROI.	• No noise-related impacts associated with direct land acquisition (no development on the WNY Southeast Corner). • Temporary increase in noise by at least 10 dB at five noise-sensitive locations along M Street SE during construction (including potential pile driving) of relocated Navy Museum on the SEFC E Parcels. • No long-term noise impacts from operation of facilities at the SEFC E Parcels. • Potentially significant temporary noise impacts at noise-sensitive locations during construction at the SEFC E Parcels. • No permanent noise impacts at the SEFC E Parcels.	• No noise-related impacts associated with direct land acquisition (no development on the WNY Southeast Corner). • Temporary increase in noise by at least 10 dB at five noise-sensitive locations along M Street SE during construction (including potential pile driving) of Navy administrative development on the SEFC E Parcels. • No long-term noise impacts from operation of facilities at the SEFC E Parcels. • Potentially significant temporary noise impacts at noise-sensitive locations during construction at the SEFC E Parcels. • No permanent noise impacts at the SEFC E Parcels.	• No noise-related impacts associated with direct land acquisition (no development on the WNY Southeast Corner). • No additional noise-generating development at the SEFC E Parcels beyond relocating the fence line and connecting utilities to existing buildings for maintenance. • No long-term noise impacts from maintenance of facilities at the SEFC E Parcels. • No significant impacts within the ROI.

Table 3.12-1 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1A: Land Acquisition through Land Exchange with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative1B: Land Acquisition through Land Exchange with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 1C: Land Acquisition through Land Exchange with No Development on SEFC E Parcels*	*Alternative 2A: Direct Land Acquisition with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative 2B: Direct Land Acquisition with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 2C: Direct Land Acquisition with No Development on SEFC E Parcels*
Air Quality	• Construction and operation emissions would be below applicable significance thresholds, therefore; air quality impacts would not be significant.	• Construction and operation emissions associated with development at the WNY Southeast Corner and the SEFC E Parcels would be below applicable significance thresholds, therefore; air quality impacts would not be significant.	• Construction and operation emissions associated with development at the WNY Southeast Corner and the SEFC E Parcels would be below applicable significance thresholds, therefore; air quality impacts would not be significant.	• Construction and operation emissions associated with development at the WNY Southeast Corner would be below applicable significance thresholds, therefore; air quality impacts would not be significant. Limited construction would occur on the SEFC E Parcels except for a fence, therefore; air quality impacts would not be significant.	• The WNY Southeast Corner would remain in its current state. Construction and operation emissions associated with development at the SEFC E Parcels would be below applicable significance thresholds, therefore; air quality impacts would not be significant.	• The WNY Southeast Corner would remain in its current state. Construction and operation emissions associated with development at the SEFC E Parcels would be below applicable significance thresholds, therefore; air quality impacts would not be significant.	• Air quality impacts would not be significant because the WNY Southeast Corner would remain in its current state and there would be limited construction on the SEFC E Parcels except for a fence.
Socioeconomics	• Amount of federal land would remain constant. No land exchange or private development of WNY Southeast Corner. • Long-term, minor increase in property tax revenues. • No land exchange or private development on WNY Southeast Corner. • Beneficial economic impacts from construction and operation of private development on the SEFC E Parcels.	• Beneficial economic impacts from net increase in developable and taxable private land due to land exchange. • Long-term, minor increase in property tax revenues. • Beneficial economic impacts from construction and operation of private development on WNY Southeast Corner and in-kind considerations. • Beneficial economic impacts from construction and operation of the Navy Museum on the SEFC E Parcels.	• Beneficial economic impacts from net increase in developable and taxable private land due to land exchange. • Long-term, minor increase in property tax revenues. • Beneficial economic impacts from construction and operation of private development on WNY Southeast Corner and in-kind considerations. • Beneficial economic impacts from construction and operation of Navy administrative development on the SEFC E Parcels.	• Beneficial economic impacts from net increase in developable and taxable private land due to land exchange. • Long-term, minor increase in property tax revenues. • Beneficial economic impacts from construction and operation of private development on WNY Southeast Corner and in-kind considerations. • No short-term or long-term economic impacts with no development of SEFC E Parcels.	• Minor negative economic impacts from net decrease in developable and taxable private land due to Navy acquisition of SEFC E Parcels. • Long-term, minor decrease in property tax revenues. • No land exchange or private development on WNY Southeast Corner. • Beneficial economic impacts from construction and operation of the Navy Museum on the SEFC E Parcels.	• Minor negative economic impacts from net decrease in developable and taxable private land due to Navy acquisition of SEFC E Parcels • Long-term, minor decrease in property tax revenues. • No land exchange or private development on WNY Southeast Corner. • Beneficial economic impacts from construction and operation of Navy administrative development on the SEFC E Parcels.	• Minor negative economic impacts from net decrease in taxable private land due to Navy acquisition of SEFC E Parcels. • Long-term, minor decrease in property tax revenues. • No land exchange or private development on WNY Southeast Corner. • No short-term or long-term economic impacts with no development of SEFC E Parcels.

Table 3.12-1 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1A: Land Acquisition through Land Exchange with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative1B: Land Acquisition through Land Exchange with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 1C: Land Acquisition through Land Exchange with No Development on SEFC E Parcels*	*Alternative 2A: Direct Land Acquisition with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative 2B: Direct Land Acquisition with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 2C: Direct Land Acquisition with No Development on SEFC E Parcels*
Environmental Justice	• No development or impacts on WNY Southeast Corner. • No disproportionately high and adverse effects on minority and low-income populations and no significant impacts to the health and safety of children from private development on SEFC E Parcels. • Construction of private development on SEFC E Parcels could cause potentially significant, temporary noise impacts on Van Ness Elementary School affecting the health and safety of children.	• No disproportionately high and adverse effects on low-income or minority populations and no significant impacts to the health and safety of children from private development on WNY Southeast Corner or in-kind considerations. • No disproportionately high and adverse effects on minority and low-income populations and no significant impacts to the health and safety of children from relocated Navy Museum on SEFC E Parcels. • Construction on the SEFC E Parcels could cause potentially significant, temporary noise impacts on Van Ness Elementary School affecting the health and safety of children.	• No disproportionately high and adverse effects on low-income or minority populations and no significant impacts to the health and safety of children from private development on WNY Southeast Corner or in-kind considerations. • No disproportionately high and adverse effects on minority and low-income populations and no significant impacts to the health and safety of children from Navy administrative development on SEFC E Parcels. • Construction on the SEFC E Parcels could cause potentially significant, temporary noise impacts on Van Ness Elementary School affecting the health and safety of children.	• No disproportionately high and adverse effects on low-income or minority populations and no significant impacts to the health and safety of children from private development on WNY Southeast Corner or in-kind considerations. • No disproportionately high and adverse effects on low-income or minority populations and no significant impacts to the health and safety of children from no development on SEFC E Parcels.	• No disproportionately high and adverse effects on low-income or minority populations and no significant impacts to the health and safety of children from direct land acquisition and no development on WNY Southeast Corner. • No disproportionately high and adverse effects on minority and low-income populations and no significant impacts to the health and safety of children from relocated Navy Museum on SEFC E Parcels. • Construction on the SEFC E Parcels could cause potentially significant, temporary noise impacts on Van Ness Elementary School affecting the health and safety of children.	• No disproportionately high and adverse effects on low-income or minority populations and no significant impacts to the health and safety of children from direct land acquisition and no development on WNY Southeast Corner. • No disproportionately high and adverse effects on minority and low-income populations and no significant impacts to the health and safety of children from Navy administrative development on SEFC E Parcels. • Construction on the SEFC E Parcels could cause potentially significant, temporary noise impacts on Van Ness Elementary School affecting the health and safety of children.	• No disproportionately high and adverse effects on low-income or minority populations and no significant impacts to the health and safety of children from direct land acquisition and no development on WNY Southeast Corner. • No disproportionately high and adverse effects on low-income or minority populations and no significant impacts to the health and safety of children from direct land acquisition and no development on SEFC E Parcels.
Utilities and Infrastructure	• Ample capacity with service provider systems at connection points could handle increased demands associated with private development on the SEFC E Parcels (no development on the WNY Southeast Corner).	• Utility demand greater than No Action Alternative. • Ample capacity with service provider systems at connection points could handle increased demands associated with private development in the WNY Southeast Corner the Navy Museum at the SEFC E Parcels.	• Utility demand greater than No Action Alternative. • Ample capacity with service provider systems at connection points could handle increased demands associated with private development in the WNY Southeast Corner Navy administrative development at the SEFC E Parcels.	• Utility demand greater than No Action Alternative. • Ample capacity with service provider systems at connection points could handle increased demands associated with private development in the WNY Southeast Corner and utility demand for maintenance of Buildings 74 and 202 at SEFC E Parcels.	• Utility demand less than No Action Alternative. • Ample capacity in the Navy and service provider systems at connection points could handle increased demands associated with the Navy Museum (no development on the WNY Southeast Corner).	• Utility demand less than No Action Alternative. • Ample capacity in the Navy and service provider systems could handle increased demands associated with Navy administrative development (no development on the WNY Southeast Corner).	• Utility demand less than No Action Alternative. • Ample capacity to handle utility demand maintenance of Buildings 74 and 202 at SEFC E Parcels (no development on the WNY Southeast Corner).

Table 3.12-1 Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*Alternative 1A: Land Acquisition through Land Exchange with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative1B: Land Acquisition through Land Exchange with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 1C: Land Acquisition through Land Exchange with No Development on SEFC E Parcels*	*Alternative 2A: Direct Land Acquisition with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative 2B: Direct Land Acquisition with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 2C: Direct Land Acquisition with No Development on SEFC E Parcels*
	• No significant impacts from connections and upgrades to existing utility infrastructure at the SEFC E Parcels (no development on the WNY Southeast Corner).	• Existing Navy utility infrastructure in the WNY Southeast Corner would be capped and rerouted. • Construction of relocated Navy Museum on SEFC E Parcels would require utility connections to existing services. • Acquisition and maintenance of Buildings 202 and 74 would require utility connections. • Minor short-term impacts during utility disconnections and new connections.	• Existing Navy utility infrastructure in the WNY Southeast Corner would be capped and rerouted. • Construction of Navy administrative facilities on SEFC E Parcels would require utility connections to existing services. • Acquisition and maintenance of Buildings 202 and 74 would require utility connections. • Minor short-term impacts during utility disconnections and new connections.	• Existing Navy utility infrastructure in the WNY Southeast Corner would be capped and rerouted. • Acquisition and maintenance of Buildings 202 and 74 would require utility connections. • Minor short-term impacts during utility disconnections and new connections.	• Construction of the relocated Navy Museum on SEFC E Parcels would require utility connections to existing services (no development on the WNY Southeast Corner). • Minor short-term impacts during utility disconnections and new connections.	• Construction of Navy administrative facilities on SEFC E Parcels would require utility connections to existing services (no development on the WNY Southeast Corner). • Minor short-term impacts during utility disconnections and new connections.	• Acquisition and maintenance of Buildings 202 and 74 would require utility connections (no development on the WNY Southeast Corner). • Minor short-term impacts during utility disconnections and new connections.
	• No significant impacts associated with utilities distribution systems and service capacity and infrastructure during construction or operation of private development on the SEFC E Parcels.	• No significant impacts associated with utilities and infrastructure distribution systems and service capacity during construction or operation of relocated Navy Museum on SEFC E Parcels.	• No significant impacts associated with utilities and infrastructure distribution systems and service capacity during construction or operation of Navy administrative facilities on SEFC E Parcels.	• No significant impacts associated with utilities and infrastructure distribution systems and service capacity during construction of fencing or utility connections.	• No significant impacts associated with utilities and infrastructure distribution systems and service capacity during construction or operation of relocated Navy Museum on SEFC E Parcels.	• No significant impacts associated with utilities and infrastructure distribution systems and service capacity during construction or operation of Navy administrative facilities on SEFC E Parcels.	• No significant impacts associated with utilities and infrastructure distribution systems and service capacity during construction or operation.

Notes: AT = antiterrorism; BMP = best management practice; dB = decibel; D.C. SHPO = State District of Columbia Historic Preservation Officer; GSA = General Services Administration; LUC = Land Use Control; MOU = Memorandum of Understanding; NEPA = National Environmental Policy Act; NHL = National Historic Landmark; PA = Programmatic Agreement; SEFC = Southeast Federal Center.

Table 3.12-2 Potential Mitigation Measures

Resource Area	*No Action Alternative*	*Alternative 1A: Land Acquisition through Land Exchange with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative1B: Land Acquisition through Land Exchange with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 1C: Land Acquisition through Land Exchange with No Development on SEFC E Parcels*	*Alternative 2A: Direct Land Acquisition with Reuse of the SEFC E Parcels with Relocated Navy Museum*	*Alternative 2B: Direct Land Acquisition with Reuse of SEFC E Parcels with Navy Administrative Development*	*Alternative 2C: Direct Land Acquisition with No Development on SEFC E Parcels*
Transportation	Developer would coordinate design plans with D.C. Department of Transportation and other planning agencies to mitigate traffic impacts.	Mitigation measures such as lane adjustments would improve LOS. The Navy and the developer would consider improvements to the O Street Gate.	Mitigation measures such as lane adjustments would improve LOS. The Navy and the developer would consider improvements to the O Street Gate.	Mitigation measures such as lane adjustments would improve LOS. The Navy and the developer would consider improvements to the O Street Gate.	No mitigation would be necessary.	The Navy would consider mitigation measures such as improvements to the O Street Gate, programs to encourage use of other modes of transportation, or minimizing new parking to achieve parking ratio goals.	No mitigation would be necessary.
Cultural Resources	Effects from private development of SEFC E Parcels would be resolved through adherence to the 2007 PA and Historic Covenant between the GSA, ACHP, and D.C. SHPO.	Effects would be resolved through National Historic Preservation Act Section 106 consultation and stipulations in new PA(s), historic covenant(s), and MOU(s).	Effects would be resolved through National Historic Preservation Act Section 106 consultation and stipulations in new PA(s), historic covenant(s), and MOU(s).	Effects would be resolved through National Historic Preservation Act Section 106 consultation and stipulations in new PA(s), historic covenant(s), and MOU(s).	Effects would be resolved through National Historic Preservation Act Section 106 consultation and stipulations in new PA(s) and MOU(s).	Effects would be resolved through National Historic Preservation Act Section 106 consultation and stipulations in new PA(s) and MOU(s).	No mitigation with no change to existing conditions.
Hazardous Materials and Wastes	No mitigation would be necessary.	The Navy would relocate the Hazardous Waste Storage Site to comply with RCRA and conduct appropriate analysis under NEPA.	Same as Alternative 1A.	Same as Alternative 1A.	No mitigation would be necessary.	No mitigation would be necessary.	No change to existing conditions so no mitigation would be necessary.
Water	Flood risks would be reduced with implementation of flood management measures during the design phase.	Same as the No Action Alternative.	Same as the No Action Alternative.	Same as the No Action Alternative.	Same as the No Action Alternative.	Same as the No Action Alternative.	No change to existing conditions so no mitigation would be necessary.

Notes: ACHP = Advisory Council on Historic Preservation; D.C. SHPO = District of Columbia State Historic Preservation Officer; GSA = General Services Administration; LOS = Level of Service; MOU = Memorandum of Understanding; NEPA = National Historic Preservation Act; PA = Programmatic Agreement; RCRA = Resource Conservation and Recovery Act; SEFC = Southeast Federal Center.

4 Cumulative Effects

This section (1) defines cumulative effects, (2) describes past, present, and reasonably foreseeable future actions relevant to cumulative effects, (3) analyzes the incremental interaction the Proposed Action may have with other actions, and (4) evaluates cumulative effects potentially resulting from these interactions.

4.1 Definition of Cumulative Effects

As defined by CEQ regulations, cumulative effects are effects on the environment that result from the incremental effects 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 (40 CFR section 1508.1).

Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time (40 CFR part 1508.1). The CEQ and 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* (CEQ, 1997b) states that cumulative impact analyses should "…determine the magnitude and significance of the environmental consequences of the Proposed Action in the context of cumulative impacts of other past, present, and future actions...identify significant cumulative impacts…[and]…focus on truly meaningful impacts."

Cumulative effects 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 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 Effects Analysis

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the timeframe in which the effects could be expected to occur. For this EIS, the study area is the geographic extent of the cumulative effects analysis. In general, the study area will include those areas previously identified in Chapter 3 for the respective resource areas. The timeframe for cumulative impacts centers on the timing of the Proposed Action.

Another factor influencing the scope of cumulative effects analysis involves identifying other actions to consider. Beyond determining that the geographic scope and timeframe for the actions that may interact with 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 EISs and EAs, management plans, land use plans, and other planning related studies.

4.3 Past, Present, and Reasonably Foreseeable Actions

This section identifies the relevant past, present, and reasonably foreseeable future actions 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 action. Specifically, using the first fundamental question included in Section 4.1, *Definition of Cumulative Effects*, it was determined whether a relationship exists such that the affected resource areas of the Proposed Action (included in this EIS) might interact with the affected resource area 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. Actions included in this cumulative effects analysis are summarized in Table 4.3-1 and shown on Figure 4.3-1. Resource areas potentially affected by the Proposed Action Alternatives and the Cumulative Actions are shown in Table 4.3-2.

Table 4.3-1 Cumulative Action Evaluation

Action Number	*Action Name*	*Action Proponent*	*Project Description*	*Action Location*	*Estimated Time Frame*
Past Actions					
1	The Yards, Phase 1: Bower Condos	Private Developer	138 residential units and 11,500 square feet retail[(1)]	1300 4th Street SE, Parcel O1	Completed 2019
2	The Yards, Phase 1: Guild Apartments	Private Developer	191 residential units and 6,800 square feet retail[(1)]	1346 4th Street SE, Parcel O2	Completed 2019
3	Callisto, Barracks Row	Private Developer	32 hotel rooms[(2)]	816 Potomac Avenue SE	Completed 2020
4	The Europa, Barracks Row	Private Developer	49 residential units[(3)]	818 Potomac Avenue SE	Completed 2021
5	Thompson Washington, D.C.	Private Developer	225 hotel rooms, 6,500 square feet retail, and 7,000 square feet meeting space[(4)]	221 Tingey Street SE	Completed 2020
6	The Yards, Phase 2: Chemonics Building	Private Developer	285,000 square feet office, 15,000 square feet retail[(5)]	1275 New Jersey Ave SE, Parcel G	Completed 2022

Table 4.3-1 Cumulative Action Evaluation

Action Number	*Action Name*	*Action Proponent*	*Project Description*	*Action Location*	*Estimated Time Frame*
Present and Reasonably Foreseeable Future Actions					
7	Child Development Center at WNY	Naval Support Activity Washington	31,000 square feet facility to accommodate 235 children and provide childcare/development for infants, pre-toddlers, toddlers, preschool aged children of military and civilian personnel at Naval District Washington	WNY	Estimated 2-year construction period 2025-2027
8	11th Street Pedestrian Bridge Park	Non-profit Developer	4-acre park to be built on the original piers of the 1960s road bridge crossing the Anacostia River between Wards 6 and 8, transforming aged infrastructure into the city's first elevated park.	Old 11th Street Bridge over Anacostia River	Estimated 3-year construction period from 2023-2025
9	Maritime Plaza I & II	Private Developer	Two office buildings each at 175,000 square feet and a 250-unit hotel.	1201 M Street SE	Estimated 3-year construction period from 2028 to 2030
10	716 L Street SE	Private Developer	18 residential units	716 L Street SE	Currently under construction
11	Humane Rescue Alliance Headquarters	Non-profit Developer	80,000 square feet headquarters building	1050 M Street SE	Estimated 3-year construction period 2025-2028
12	1333 M Street SE	Private Developer	Mixed-Use Development with 900 residential units and 45,000 square feet retail. A pedestrian promenade is planned and a traffic circle at Water and M streets.	1333 M Street SE	Anticipated 2-year construction period 2023-2025
13	The Yards Parcel H	Private Developer	1,260 apartments, 1.8M square feet office space, 150,000 square feet retail, and 43,000 square feet park space.		Currently under construction

Notes: N/A - Not Applicable; WNY = Washington Navy Yard

Sources: 1. (GSA, 2020)
2. (Capitol River Front, 2022a)
3. (Capitol River Front, 2022b)
4. (Capitol River Front, 2022c)
5. (Capitol River Front, 2022d)

Cumulative Actions 1 – 6 are past actions completed before 2022. Reasonably foreseeable future actions include 7 which is a Navy action in the WNY Northeast Corner. Cumulative Actions 8 and 11 are actions that would be completed by non-profit organizations, while Cumulative Actions 9, 10, 12, and 13 would be completed by private developers.

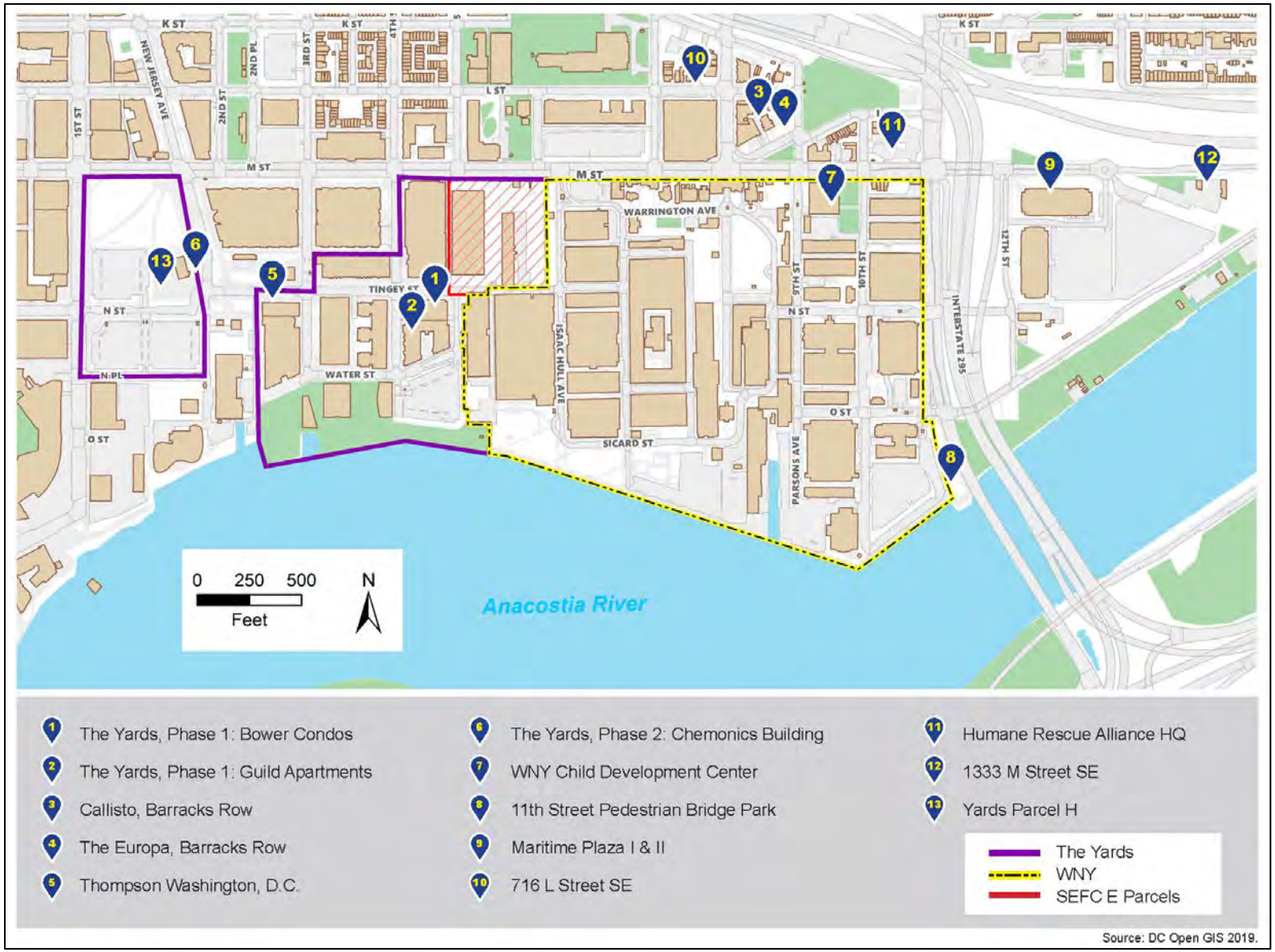

Figure 4.3-1 Location of Cumulative Actions

Table 4.3-2 Cumulative Actions and their Relevance to the Proposed Action Alternatives and Resource Areas

Action Number	Cumulative Action Title	Time Frame			Resource Areas Assessed for Cumulative Impacts									
		Past	Present	Reasonably Foreseeable	Transportation	Cultural Resources	Land Use/ Zoning	Hazardous Materials & Waste	Water Resources	Noise	Air Quality	Socioeconomics	Environmental Justice	Utilities & Infrastructure
1	The Yards, Phase 1: Bower Condos	✓				✓	✓					✓	✓	
2	The Yards, Phase 1: Guild Apartments	✓				✓	✓					✓	✓	
3	Callisto, Barracks Row	✓				✓	✓					✓	✓	
4	The Europa, Barracks Row	✓				✓	✓					✓	✓	
5	Thompson Washington, D.C.	✓				✓	✓					✓	✓	
6	The Yards, Phase 2: Chemonics Building	✓				✓	✓					✓	✓	
7	Child Development Center at WNY			✓	✓	✓	✓			✓	✓	✓	✓	✓
8	11th Street Pedestrian Bridge Park			✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
9	Maritime Plaza I & II			✓	✓	✓	✓			✓	✓	✓	✓	✓
10	716 L Street SE		✓		✓	✓	✓			✓	✓	✓	✓	✓
11	Humane Rescue Alliance HQ			✓	✓	✓	✓			✓	✓	✓	✓	✓
12	1333 M Street SE			✓	✓	✓	✓			✓	✓	✓	✓	✓
13	The Yards Parcel H		✓		✓	✓	✓			✓	✓	✓	✓	✓

Notes: WNY = Washington Navy Yard.
Potential impacts for Alternatives 2A, 2B, and 2C would be the same as described for Alternatives 1A, 1B, and 1C.

4.4 Cumulative Effect Analysis

4.4.1 Methodology

Where feasible, cumulative effects 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. In addition, where an analysis of potential environmental effects for future actions has not been completed, assumptions were made regarding cumulative effects related to this EIS where possible. In addition, where an analysis of potential environmental effects for future actions has not been completed, assumptions were made regarding cumulative effects related to this EIS where possible. 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 effects.

4.4.2 Transportation

4.4.2.1 Description of Geographic Study Area

The ROI for this resource area includes the area surrounding the WNY including parcels west of the WNY (e.g., The Yards and the SEFC E Parcels), east on both sides of I-695, north of M Street SE, and south to the Anacostia River. To analyze future cumulative conditions, present-day traffic demands were adjusted to account for growth in regional travel demand in the ROI.

4.4.2.2 Relevant Past, Present, and Future Actions

The past, present, or reasonably foreseeable actions that might interact with cultural resources are identified in Table 4.3-2. They include the multiple present and future residential and commercial development projects (Projects 7 through 13) in the area. These projects of various scale could introduce traffic to the WNY area.

4.4.2.3 Cumulative Effect Analysis

To analyze future cumulative conditions, present-day traffic demands were adjusted to account for growth in regional travel demand in the ROI. The DDOT Comprehensive Transportation Review Scoping Form states that growth rates should be based on DDOT historical data from 10 or more years, if available. Appropriate growth factor values were discussed at the scoping meeting and review of the Comprehensive Transportation Review Scoping Form with Navy and DDOT. DDOT historical traffic data show a relatively flat demand in the WNY area and a growth rate of 0.1 per year compounded was selected.

Alternative 1A Land Acquisition through Land Exchange with Navy Museum

Under this alternative, the Navy would acquire the SEFC E Parcels through a land exchange and relocate the Navy Museum. Chapter 3 describes the museum analysis methods and assumptions. The cumulative analysis combines the traffic growth factors, the trips associated with relocating the Navy Museum to the SEFC E Parcels, trips from private development on the WNY Southeast Corner, and other planned projects in the area. The Alternative 1A trip generation and distribution methods for the museum trips and the WNY Southeast Corner were described in Section 3.2, *Transportation*, under Alternative 1A. Alternative 1A would not result in significant traffic impacts. However, Projects 7 through 12 in combination with Alternative 1A would likely generate cumulative traffic effects due to their proximity to 11th Street, which is already near its capacity.

Alternative 1B Land Acquisition through Land Exchange with Navy Administrative Development

Under this alternative, the Navy would acquire the SEFC E Parcels through a land exchange and develop administrative facilities. Chapter 3 describes the administrative development analysis methods and assumptions. The cumulative Alternative 1B analysis combines the traffic growth factors, trips from the new SEFC E Parcels (administrative development), trips from the new private development on the WNY Southeast Corner, and other planned projects in the area trip effects. The trip generation and distribution methods for the administrative development and the WNY Southeast Corner trips were described in Section 3.2, *Transportation*. If no mitigation is implemented, Alternative 1B would produce serious queue spillback problems at 11th Street, resulting in significant traffic impacts. Projects 7 through 12 in combination with Alternative 1B would generate additional cumulative traffic effects due to their proximity to 11th Street, which is already near its capacity.

Alternative 1C Land Acquisition through Land Exchange with No Development

Under this alternative, the Navy would acquire the SEFC E Parcels through a land exchange but leave the parcels in the current state. The fence line would be moved to enclose the parcels within the fence line and utilities would be connected for maintenance of existing buildings. No change in traffic and transportation at the SEFC E Parcels would occur from this Navy development. The private developer would still construct the WNY Southeast Corner rather than the approved development on the SEFC E Parcels. The developer would coordinate with DDOT and implement recommended mitigation measures to accommodate traffic generated over the 10-year development period. Traffic generation for the WNY Southeast Corner was estimated as part of Alternative 1A. Alternative 1C would not result in significant traffic impacts. However, Projects 7 through 12 in combination with Alternative 1C would result in cumulative traffic effects due to their proximity to 11th Street, which is already near its capacity.

Alternative 2A Land Acquisition through Direct Land Acquisition with Navy Museum

Under Alternative 2A, the Navy would acquire the SEFC E Parcels and relocate the Navy Museum. The development in the WNY Southeast Corner would not occur. Chapter 3 describes the museum analysis methods and assumptions. Under this alternative, the cumulative effect analysis combines the traffic growth factors, trips from the relocated museum, and trips from other planned projects in the area. Alternative 2A would not result in significant traffic impacts. However, Projects 7 through 12 in combination with Alternative 2A would likely result in cumulative traffic effects due to their proximity to 11th Street, which is already near its capacity.

Alternative 2B Land Acquisition through Direct Land Acquisition with Navy Administrative Development

Under this alternative, the Navy would acquire the SEFC E Parcels and develop administrative facilities. Chapter 3 describes the administrative facilities analysis methods and assumptions. The cumulative Alternative 2B analysis combines the traffic growth factors, trips from the new SEFC E Parcels (administrative facilities) effects, and trips from the other planned projects in the area. The development in the WNY Southeast Corner would not occur. Alternative 2B would not result in significant traffic impacts. However, Projects 7 through 12 in combination with Alternative 2B would likely result in cumulative traffic effects due to their proximity to 11th Street, which is already near its capacity.

Alternative 2C Land Acquisition through Direct Land Acquisition with No Development

Under Alternative 2C, the Navy would acquire the SEFC E Parcels but there would be no Navy development except to enclose the property within the fence line and connect utilities for maintenance of existing buildings. With no new Navy development, cumulative transportation effects would not occur; therefore, there would be no cumulative traffic effects.

Summary

Except for Alternative 1B, the action alternatives would not result in significant traffic impacts within the ROI. Alternative 1B would result in significant impacts. None of the alternatives (including Alternative 1B) generate significant impacts if the local agency was able to implement certain lane mitigations.

However, transportation effects from past, present, and future actions (summarized within Table 4.3-2) may be cumulative because traffic demands along 11th Street are straining the limits of its capacity, with or without the Proposed Action. Existing (March 2022) conditions already include near-failing conditions along 11th Street. Projects 7 through 12 surround 11th Street in a way that would start to produce some failing conditions. The system appears able to absorb trips generated by the Proposed Action without reaching any tipping points, but additional cumulative effects or actions would likely start to produce some failing conditions that may be more difficult to mitigate.

4.4.3 Cultural Resources

4.4.3.1 Description of Geographic Study Area

The ROI for this resource area includes the area surrounding the WNY, including The Yards and the SEFC E Parcels to the west, both sides of I-695 to the east, the area north of M Street Southeast to the north, and the Anacostia River to the south. Under NEPA, the ROI is considered equivalent to the Area of Potential Effects, as defined by NHPA Section 106 implementing regulations 36 CFR § 800.16(d).

4.4.3.2 Relevant Past, Present, and Future Actions

The past, present, or reasonably foreseeable actions that might interact with cultural resources are identified in Table 4.3-2. They include the multiple past, present, and future residential and commercial development projects (Projects 1 through 13) in the area. These projects of various scale have introduced and could introduce visual elements that are inconsistent with the character of the many historic buildings and districts of Washington D.C. Not only do the modern buildings exhibit out of character architectural styles, but in many cases their large size presents changes to the visual landscape.

4.4.3.3 Cumulative Effect Analysis

Cultural resource effects that would occur with implementation of the alternatives would include potential impacts to the Washington Navy Yard Central Yard NHL, the Washington Navy Yard Eastern Extension Historic District, the Washington Navy Yard Annex Historic District, and other nearby historic properties (e.g., Anacostia Park, L'Enfant Plan).

Other Relevant Past, Present, and Future Actions

Past actions and reasonably foreseeable future actions have impacted, and likely would impact, the visual setting in the geographic study area for cumulative effects. Past actions (Projects 1 through 6) all consist of either residential development, or a mixture of residential and commercial development, all

of which have introduced buildings of size and architectural style that are inconsistent with the character of the many historic buildings and districts of Washington D.C. Present and reasonably foreseeable future actions (Projects 7 through 13) also consist of either residential development, or a mixture of residential and commercial development, and would also have a cumulative adverse effect on the visual setting and feeling of the many historic buildings and districts of the area. The developer would work with D.C. SHPO to integrate the new 11th Street Bridge Park (Project 8) into its WNY Southeast Corner development design. Construction of the Child Development Center (Project 7) may involve renovation or demolition of two historic buildings. This project would not be funded until 2025 and would be covered under separate NEPA and Section 106 consultation, which has not yet begun. This project could be performed so that the design and construction of the new center would take into account the architectural style of the WNY, which would result in no adverse effect on the viewshed of the Washington Navy Yard Central Yard NHL, as well as the other historic properties at the WNY.

Summary

Cumulative effects to cultural resources from past, present, and future actions within the ROI would not be significant because project elements of the Proposed Action will be guided by the terms of a PA(s) and Historic Covenant(s), ensuring that historic properties (there are no other significant cultural resources in the ROI) are preserved and incorporated into the overall design of the Proposed Action and related actions and that any adverse effects are resolved pursuant to NHPA Section 106. The area's long history centered on the industrial, commercial, maritime, and residential context will be used to provide inspiration for new uses and design elements. Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts within the ROI.

4.4.4 Land Use/Zoning

4.4.4.1 Description of Geographic Study Area

The direct ROI for land use and zoning is the portion of southeast Washington, D.C. between I-695 and the Anacostia River to the north and south, John Philip Sousa Bridge to the east, and South Capitol Street SE to the west. The indirect ROI corresponds to the 3-square mile area known as the Lower Anacostia Waterfront/Near Southwest Planning Area.

4.4.4.2 Relevant Past, Present, and Future Actions

Table 4.3-2 lists the reasonably foreseeable actions that might cumulatively affect land use and zoning within the ROI. The actions include construction and development projects to implement higher-density mixed uses consistent with the *Comprehensive Plan for the National Capital District Element*s. They are compatible with existing land use and zoning.

4.4.4.3 Cumulative Effect Analysis

Cumulative land use effects from past, present, and future actions within the ROI would not be significant because they are consistent with the Future Land Use Map and zoning designations for the Lower Anacostia Waterfront/Near Southwest Planning Area and support the long-term vision for a revised waterfront and transformed community. Implementation of the projects in Table 4.3-2 will continue the area's transformation from an industrial, transportation, and government area into new mixed-use neighborhoods, workplaces, civic spaces, parks, and restored natural areas. The proposed development on the WNY Southeast Corner of mixed-use (residential, office, commercial, retail)

buildings on the transferred property and commercial/retail on leased property would be land uses considered compatible with the WNY and consistent with the Installation Master Plan. The actions are consistent with ongoing efforts to revitalize lands along the Anacostia River. The proposed reuse options that include development for the SEFC E Parcels would be compatible with existing and planned land uses; the no development reuse option would not. Nevertheless, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts within the ROI.

4.4.5 Hazardous Materials and Wastes

4.4.5.1 Description of Geographic Study Area

The ROI for this resource area includes the area surrounding the WNY, including parcels west of the WNY (e.g., The Yards and SEFC E Parcels), east on both sides of I-695, north of M Street SE, and south to the Anacostia River.

4.4.5.2 Relevant Past, Present, and Future Actions

As shown in Table 4.3-2, none of the identified cumulative actions were identified to be relevant to the Proposed Action alternatives and hazardous materials and wastes. Construction contractors would implement BMPs for safe storage of hazardous materials and the prevention of and response to spills related to the operation of construction equipment, to minimize risks. Contractors would also be required to follow all federal and local requirements to properly store, transport, and handle their hazardous materials so that there would be a minimal risk to human health or the environment. All hazardous wastes would be handled and disposed of in accordance with federal and local regulations. Therefore, a cumulative effect analysis for this resource was not performed.

4.4.6 Water Resources

4.4.6.1 Description of Geographic Study Area

The ROI for this resource area is the area surrounding the WNY, including parcels west of the WNY (e.g., The Yards and SEFC E Parcels), east on both sides of I-695, north of M Street SE, and south to the Anacostia River. Alternatives 1 and 2 would discharge stormwater runoff directly to the Anacostia River. Therefore, adjacent portions of the Anacostia River are included in the ROI.

4.4.6.2 Relevant Past, Present, and Future Actions

Relevant past, present, and reasonably foreseeable future actions that could interact with Alternatives 1 or 2 to cumulatively affect water resources are those with the potential to:

- Contribute to or exacerbate existing flood hazards
- Substantially degrade the quality of surface or receiving waters
- Reduce the supply or alter beneficial uses of groundwater

USACE (2017) noted that flooding at the WNY primarily results from a combination of coastal flooding with storm surge. Of the past, present, and reasonably foreseeable actions listed in Tables 4.3-1 and 4.3-2, only those located along the shore of the Anacostia River (i.e., the 11th Street Pedestrian Bridge Park, Project 8) would have potential for contributing to cumulative effects related to flood hazards. Numerous past, present, and future development projects would have requirements for managing

stormwater runoff. However, given that the general area is heavily urbanized, these development projects would unlikely alter the volumes or characteristics of the stormwater discharges sufficiently to cumulatively affect flood risks. Further, some of these projects could require upgrades to the existing stormwater collection infrastructure that could result in improvements to the efficiency of collecting and disposing of stormwater runoff.

Groundwater associated with the WNY and adjacent SEFC E Parcels has no designated beneficial uses. Thus, it would be unlikely that any of the present and future actions would include requirements for extracting or discharge to groundwater with the potential for affecting the supply or beneficial uses of groundwater.

4.4.6.3 Cumulative Effect Analysis

As discussed in Section 3.6, *Water Resources*, no surface water features, such as creeks or streams, are within the WNY or SEFC E Parcels. Surface water flows at the WNY and the SEFC E Parcels are limited to stormwater runoff that is directed via grading to the stormwater collection system. Thus, Alternatives 1 and 2, with or without other future actions, would not alter drainage patterns in an on-site stream or flood channel or in the Anacostia River. If new construction at the WNY and SEFC E Parcels incorporated the flood risk reduction strategy of raising the site elevation above the floodplain, the altered site topography could affect surface runoff flow patterns in a manner that resulted in flooding or ponding in adjacent properties. Similarly, none of the other past, present, and reasonably foreseeable actions would alter or interfere with drainage of a stream system or flood channel or river flows in a manner that would increase risks of flooding or redirect flood flows that would potentially harm life or property either on site or off site. Implementation of Alternatives 1 or 2, together with the other past, present, and reasonably foreseeable actions, would not increase flood risks; although, with development within a floodplain, the risks of flooding would remain.

The WNY and SEFC E Parcels are almost entirely covered by impervious surfaces. Implementation of Alternatives 1 or 2 would not substantially change the amount of impervious surface in a manner that would increase runoff volumes because the areas subject to impact are already impervious surfaces. Similarly, actions at adjacent properties would unlikely substantially change the existing coverages with impervious surfaces to an extent that would influence runoff volumes.

Stormwater discharges for Alternatives 1 and 2, along with the identified present and future actions, would comply with permit conditions governing stormwater discharges. Compliance with permit conditions, together with implementation and maintenance of BMPs, would ensure that stormwater flows would be appropriately managed.

Consequently, Alternatives 1 or 2 in combination with the identified cumulative actions would not contribute to cumulative changes in runoff or surface flows in a manner that would increase risks of flooding or inundation, unless the new construction affected surface runoff flow patterns in a manner that resulted in flooding or ponding in adjacent properties.

Alter Surface Water Quality

No surface water features exist within the WNY or the SEFC E Parcels; thus, operations associated with Alternatives 1 or 2 would not directly affect the quality or beneficial uses of surface water. Permitted discharges from past, present, and reasonably foreseeable actions would be limited to stormwater during the construction and operation phases. Stormwater discharges from these projects would be governed by NPDES permits that specify effluent limitations and discharge specifications, as well as

receiving water limitations intended to ensure that discharges comply with water quality regulatory standards and would not degrade surface or groundwater quality.

Portions of the Anacostia River are on the 303(d) list as impaired. TMDLs have been developed that specify load allocations from the individual sources, such that cumulative loadings would be below levels expected to adversely affect water quality and beneficial uses of the water body. In the absence of restricted load allocations, the impairments would be expected to persist. Because permits regulate stormwater discharges, impacts from these discharges would be consistent with existing regulations and approved TMDLs for the constituents of concern.

Reasonably foreseeable future actions requiring construction in areas adjacent to the Anacostia River (e.g., Project 8) could result in accidental releases of materials, such as construction debris, eroded soils, or stormwater runoff, which could affect surface water quality in the river. However, all projects would be required to obtain an individual construction permit or coverage under the Construction General Permit that specifies requirements for managing stormwater runoff and implementing BMPs intended to prevent or minimize the potential for construction activities to degrade surface water quality. Therefore, compliance with permit conditions would ensure that construction activities would not adversely affect surface water quality in the Anacostia River.

Consequently, Alternatives 1 or 2, in combination with the identified cumulative actions, would not contribute to cumulative alterations in surface water quality.

Reduce Supply or Alter Beneficial Uses of Groundwater

Connectivity between surface and groundwater at the WNY and the SEFC E Parcels is limited because the parcels are almost entirely covered with an impervious surface; consequently, infiltration of surface water to groundwater is negligible. Implementation of Alternatives 1 or 2 would not substantially change the amount of impervious surface. Further, groundwater at this location is not potable, and there are no plans to extract groundwater for on-site consumption. Thus, Alternatives 1 or 2 would not affect supply or quality of groundwater. Similarly, it is unlikely that future actions at the WNY would include plans for extracting groundwater for on-site use, other than minor volumes associated with site dewatering during construction. Consequently, Alternatives 1 or 2 in combination with the identified cumulative actions would not contribute to cumulative reductions in groundwater supply or alter beneficial uses of groundwater.

Summary

Cumulative effects to water resources from past, present, and reasonably foreseeable actions within the ROI would not be significant because of (1) the very limited impacts to surface or groundwater resources that would occur under Alternatives 1 or 2, and (2) the limited extent and beneficial uses of surface and groundwater resources likely to be affected by the other past, present, and reasonably foreseeable actions. However, because portions of Alternatives 1 and 2 would be constructed in a flood zone and the risks of flooding would remain. Implementation of Alternatives 1 or 2 would not contribute to cumulative flood risks associated with the past, present, and reasonably foreseeable actions within the ROI.

4.4.7 Noise

4.4.7.1 Description of Geographic Study Area

The ROI for noise includes noise-sensitive receptors in the vicinity of the Navy Yard southeast of I-695, along the Anacostia River, and in proximity to the SEFC E Parcels. This ROI and the noise-sensitive receptors within represent the locations nearest the proposed project sites at the greatest risk of noise impacts, which are analyzed in detail in this section.

4.4.7.2 Relevant Past, Present, and Future Actions

Table 4.3-2 lists the present and reasonably foreseeable actions that might cumulatively affect noise within the ROI. Noise from past actions is considered part of the existing noise environment. These actions include construction and development projects to implement higher-density mixed uses, as well as projects with the potential to generate additional noise due to construction activity.

4.4.7.3 Cumulative Effect Analysis

The potential for cumulative noise effects from present and future actions within the ROI would primarily be related to projects to transform the area from an industrial, transportation, and government area into new mixed-use neighborhoods, workplaces, civic spaces, parks, and restored natural areas. In general, some projects would create additional noise-sensitive receptors, primarily residential, that would experience elevated noise levels while other projects would generate noise during their construction phase potentially impacting current and/or future noise-sensitive receptors. Alternatives 1 or 2, in combination with the identified cumulative actions, would not result in significant cumulative noise effects in the ROI.

4.4.8 Air Quality

4.4.8.1 Description of Geographic Study Area

The ROI for assessing cumulative air quality effects includes the area surrounding the WNY including parcels west of the WNY (e.g., The Yards and SEFC E Parcels), east on both sides of I-695, north of M Street SE, and south to the Anacostia River and the larger National Capital Interstate Air Quality Control Region, which encompasses the District. This area is the focus of localized cumulative effects because of on-site emissions from proposed construction and operation. On-site construction equipment would be a main source of construction emissions while vehicle traffic generated by proposed construction and operation would be the main source of off-site emissions. This traffic would disperse through regional roadway systems and therefore its contribution to localized cumulative effects would decrease with distance from the SEFC E Parcels and the WNY. The National Capital Interstate Air Quality Control Region is appropriate for evaluating how mass emissions from the alternatives and other planned projects would affect cumulative levels of regional pollutants such as ozone and $PM_{2.5}$.

The potential effects of proposed GHG emissions are by nature cumulative effects because global sources of GHG contribute to global climate change. Therefore, the ROI for the cumulative analysis of proposed GHG emissions is worldwide. These global effects would be manifested as impacts to resources and ecosystems in the District and surrounding regions.

4.4.8.2 Relevant Past, Present, and Future Actions

The affected environment section (Section 3.8.1, *Air Quality*) describes the existing air quality conditions, which reflect the aggregate effects of past and present actions within the ROI. For example, the District is designated as a marginal nonattainment area for ozone, a maintenance area (an area that has transitioned from nonattainment to attainment) for CO and $PM_{2.5}$, and unclassified/attainment for all other criteria pollutants regulated under the NAAQS. These conditions define how past and present actions currently affect air quality within the ROI and provide the context for the cumulative effects analysis.

Past, present, and reasonably foreseeable actions that have a potential to interact with the project alternatives and to produce cumulative air quality effects include existing and future sources of emissions in proximity to the WNY and within the greater District metropolitan area and the National Capital Interstate Air Quality Control Region. Vehicle traffic on I-695 and city streets surrounding the WNY represent the primary sources of emissions within the localized ROI. Table 4.3-1 lists past, present, and reasonably foreseeable construction and operation actions that could interact with the alternatives to generate cumulative air quality effects within either the localized or regional ROI.

Future development and an increase in population could contribute to an increase in cumulative emissions in the region compared to existing conditions within the ROI. However, the criteria pollutant attainment planning processes implemented by the DOEE includes emission reduction strategies that would assist with progress toward attainment and maintenance of the NAAQS in the region. GHG initiatives proposed by the DOEE, surrounding states, and the federal government also would reduce criteria pollutant and GHG emissions within the ROI.

Scientific evidence indicates a correlation between the worldwide proliferation of GHG emissions by humankind and increasing global temperatures over the past century. Scientific organizations predict that future global climate change will produce negative environmental and social consequences across the globe (U.S. Global Change Research Program, 2018).

4.4.8.3 Cumulative Effect Analysis

Cumulative air quality effects are based on the net increase in emissions that would occur from Alternatives 1 or 2 and relative to the No Action Alternative, in combination with emissions from cumulative projects proposed in the area (Projects 7 through 13). Past projects are already complete and would not contribute to construction emissions. Operational emissions from these projects would be contained within the affected environment. The following qualitative analysis considered the cumulative effects of these emissions with their potential to (1) contribute to an exceedance of a NAAQS on local and regional levels, and (2) affect climate change.

Alternative 1: Land Acquisition through Land Exchange

As presented in air quality Section 3.8.3*, Environmental Consequences*, implementation of Alternatives 1A, 1B, and 1C would not result in significant impacts to air quality. The following analysis considers the implementation of Alternative 1 in combination with the identified cumulative projects proposed for the area. The cumulative effects analysis for Alternative 1 focused on impacts from sub-alternatives with the highest construction and operations emissions - Alternatives 1A and 1B, respectively.

Criteria Pollutants

Construction

Construction activities under Alternative 1A would generate emissions that would remain well below all emission significance thresholds. Emissions from on-site construction mainly would occur from mobile equipment and area sources such as fugitive dust (PM_{10} and $PM_{2.5}$) and application of architectural coatings (VOCs). Construction emissions from the SEFC E Parcels and the WNY Southeast Corner would quickly disperse off site to low levels. Intermittent emissions from construction trucks and worker vehicles that access the site via adjacent roadways would not substantially add to these off-site impacts.

Localized off-site cumulative project effects would be limited by the geographical separation of the projects. Overlapping local impacts would mainly occur from vehicles on I-695, city streets surrounding the WNY, and potentially construction and/or operation activities of the larger projects identified in Table 4.3-1. Transport of these emissions to the locality surrounding the SEFC E Parcels and the WNY would result in ambient pollutant impacts of CO, NO_2, SO_2, and particulate matter (PM_{10} and $PM_{2.5}$) below levels of concern, due to their distance from this location and as demonstrated by the attainment status of these NAAQS in the ROI. Therefore, construction emissions from Alternative 1A, in combination with emissions from nearby cumulative projects, would not result in a localized exceedance of a NAAQS.

On a regional scale, emissions from construction of Alternative 1A would combine with emissions from numerous regional projects and could result in cumulative air quality effects. The main regional cumulative effects pertain to the release of precursor emissions that would form ozone and $PM_{2.5}$. The maximum net increase in a precursor emission from construction of Alternative 1A would amount to 8.57 tpy of VOCs. This increase in VOCs emissions would disperse to low levels within the region. Therefore, emissions from construction of Alternative 1A, in combination with emissions from cumulative actions, would not contribute to an exceedance of an ozone or $PM_{2.5}$ NAAQS in the region.

Operations

Operational activities from Alternative 1B would generate a net increase in emissions that would be below all emission significance thresholds. The off-site operation of vehicle trips would be the largest contributor to all pollutant emissions other than NO_x and $PM_{2.5.}$ The combustion of natural gas for space and water heating in developed buildings would be the largest contributor to NO_x and $PM_{2.5}$ emissions. Minor increases in emissions released from the WNY would quickly disperse to low ambient pollutant levels at off-site locations. In addition, the intermittent and mobile nature of emissions from vehicle traffic generated by this alternative would result in low ambient air pollutant levels adjacent to off-site roadways. As stated above for construction, cumulative emission sources would generate low levels of ambient CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ impacts to localities surrounding the SEFC E Parcels and the WNY. Therefore, operational emissions from Alternative 1B, in combination with emissions from nearby cumulative projects, would not be substantial enough to contribute to a localized exceedance of an ambient air quality standard.

For regional impacts to ambient ozone and $PM_{2.5}$, the maximum net increase in a precursor emission from operation of Alternative 1B would amount to 9.37 tpy of NO_x. This increase in emissions would disperse beyond the WNY and through several miles of roadways to low ambient levels. Therefore, emissions from operation of Alternative 1B, in combination with emissions from cumulative actions, would not exceed a NAAQS for ozone or $PM_{2.5}$ in the region.

Greenhouse Gases

GHG emissions represent indicators of the potential for an action to contribute to climate change effects. As presented in air quality Section 3.8.3 *Environmental Consequences* (See Tables 3.8-6 and 3.8-9), the peak net increases in annual GHG emissions from construction of Alternative 1A and operation of Alternative 1B would be 2,157 and 17,381 MT of CO_2e, respectively. While GHG emissions generated from these activities 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.

Alternative 2: Direct Land Acquisition

As shown in air quality Section 3.8.3 *Environmental Consequences*, implementation of Alternatives 2A, 2B, and 2C would result in substantially lower emissions and resulting air quality impacts compared to Alternatives 1A, 1B, and 1C, respectively. Therefore, as determined above for Alternatives 1A and 1B, emissions from construction and operation of Alternatives 2A, 2B, and 2C, in combination with emissions from cumulative projects, would not result in an exceedance of a NAAQS in proximity to the SEFC E Parcels and the WNY or within the regional airshed. While GHG emissions generated from Alternatives 2A, 2B, and 2C 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.

Summary

Emissions from construction and operation of Alternatives 1 or 2, in combination with emissions from cumulative projects, would not result in an exceedance of a NAAQS in proximity to the SEFC E Parcels and the WNY or within the regional airshed. While GHG emissions generated 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.

4.4.9 Socioeconomics

The ROI for assessing cumulative socioeconomic effects consists of Census Tract 72.01 and Washington, D.C. The affected environment section (socioeconomics Section 3.9.2, *Affected Environment*) describes the existing socioeconomic conditions of the WNY, SEFC, Census Tract 72.01, and Washington, D.C.

4.4.9.1 Relevant Past, Present, and Future Actions

All the actions described in Table 4.3-1 would have potential to interact with the project alternatives and to produce cumulative effects on socioeconomics. Each cumulative action has a construction element that would support the local construction industry and stimulate local employment and economic activity during construction. Additionally, several cumulative actions include construction of new residential, commercial, retail, or office space which would affect population, housing, schools, economic activity, and tax revenues during operation.

4.4.9.2 Cumulative Effect Analysis

As presented in socioeconomics Section 3.9.3, *Environmental Consequences*, the implementation of Alternatives 1 and 2 with sub-alternatives would not result in significant impacts to socioeconomic conditions.

Past actions have contributed to the large population growth seen in the area as shown in Table 3.9-1. Development of the past actions has contributed to the local economy by supporting construction jobs and stimulating local spending. Newly completed projects with additional residential units will lead to further population growth in the area and increase the local housing supply. The increase in housing supply would help to offset some of the demand created by the construction of retail and office space. Increased population brings in additional tax revenues because of income taxes and sales tax revenues from local spending. Improvements to the properties would raise property values which would translate to higher property tax revenues. The additional tax revenues would likely offset the expense of increased demand for schools and other public services.

Present and reasonably foreseeable future actions would generate additional construction activity in the study area. The construction would support construction employment and wages in the short-term and would also create sales tax revenues and stimulate economic activity from the purchase of materials in the study area. These would be minor, positive, short-term impacts. Additional traffic congestion related to construction activities may have negligible negative impacts on local businesses if access to their business is limited or if the congestion discourages visitors to the area. The cumulative effect of the present and reasonably foreseeable future actions together with the Proposed Action alternatives would create a large demand for construction services in the area. The construction industry in Washington, D.C. and the surrounding area employs over 10,000 workers (see Table 3.9-3) and is large enough to accommodate significant construction activity; however, the large number of projects would increase the likelihood of non-local workers temporarily relocating to the area. This could create a temporary increase in population that would also increase demands for public services. The population increase would be a negligible percentage of the densely populated surrounding area, and the additional expense of meeting demand for public services would be offset by increased tax revenues generated by sales taxes on construction spending and income and sales taxes paid by construction workers.

During operation of the present and reasonably foreseeable future actions there would be a permanent increase in population due to the additional residential units. The additional residential units would also help to offset the demand for housing that would be expected due to the additional retail, commercial, and office space constructed. The retail, commercial, and office construction would further stimulate economic activity in the local area. Additional population, increased property values on the improved parcels, and additional economic activity would all increase tax revenues that would offset the increased expense of meeting additional demand for schools or other public services.

Overall, cumulative socioeconomic effects from past, present, and reasonably foreseeable future actions would be beneficial in both the short-term construction phases and in the long-term operational phases although effects would be minor in the long term.

4.4.10 Environmental Justice

4.4.10.1 Description of Geographic Study Area

The area that makes up the environmental justice ROI consists of the census tract where the WNY and SEFC E Parcels are located (Census Tract 72.01) as well as census tracts within 0.5 mile of the SEFC E Parcels and WNY Southeast Corner (Census Tracts 65, 70, 71, 72.02, 72.03, 74.01, 75.03, and 76.01). This represents the most likely impacted areas, however, impacts that would fall outside of this ROI are also considered as the different resource areas analyzed in this EIS each have their own unique potential impact and potential impact radius. The affected environment section (environmental justice Section

3.10.2, *Affected Environment*) describes the existing environmental justice characteristics of the WNY, SEFC, and surrounding region.

4.4.10.2 Relevant Past, Present, and Future Actions

The cumulative effect of all the actions listed in Table 4.3-1 has the potential to affect environmental justice and the protection of children. Each of the actions has a construction element that has the potential to negatively affect air quality, traffic, and noise environments temporarily which could adversely affect minority or low-income populations or the health and safety of children.

4.4.10.3 Cumulative Effect Analysis

Most of the past, present, and reasonably foreseeable future actions (13 out of the 19 actions), as well as the Alternatives 1 and 2 would occur within Census Tract 72.01. None of the four block groups in Census Tract 72.01 is a low-income or minority area. Two of the reasonably foreseeable future actions (16 and 19) would occur in Census Tract 71, Block Group 1, which is not a low-income area, but is a minority area. Two of the past actions (3 and 4) and two of the present or reasonably foreseeable future actions (17 and 18) would occur in Census Tract 72.03, Block Group 2, which is both a low-income area and a minority area. While there may be some adverse impacts in low-income or minority areas, the largest share of cumulative effects would fall on areas that are not low-income or minority areas. Therefore, there would not be disproportionate effects on low-income or minority populations.

Census Tract 72.01, where most of the anticipated impacts would occur, does not have schools or other areas where large numbers of children are likely to be present, that are expected to be affected by the past and reasonably foreseeable future actions or the Proposed Action alternatives. Van Ness Elementary School is located in the ROI in Census Tract 72.03, Block Group 2, and would be temporarily impacted by short-term noise from construction activities in the SEFC E Parcels. These impacts are discussed under the action alternatives in Sections 3.7, *Noise* and 3.10, *Environmental Justice*; there would not be additional cumulative noise effects at this location from any of the past, present, or reasonably foreseeable future actions. Therefore, implementation of the past, present, and reasonably foreseeable future actions would not result in significant effects to the health and safety of children.

4.4.11 Utilities and Infrastructure

4.4.11.1 Description of Geographic Study Area

The direct ROI for assessing cumulative utilities and infrastructure effects includes the portion of southeast Washington, D.C. between I-695 and the Anacostia River to the north and south, respectively, and Water Street SE and the 11th Street Bridge to the west and east. Indirectly, the region extends as far as Northwest and Southwest Washington, D.C. where the water treatment plants and wastewater treatment plant are located that serve the WNY and SEFC. The affected environment section (utilities and infrastructure Section 3.11.2, *Affected Environment*) describes the existing utility and infrastructure conditions of the WNY and SEFC.

4.4.11.2 Relevant Past, Present, and Future Actions

Past, present, and reasonably foreseeable actions listed in Table 4.3-1 have a potential to interact with the project alternatives and to produce cumulative effects to demands on one or more utility infrastructure systems. Utilities and infrastructure that could be cumulatively affected from

implementation of Alternatives 1 or 2 include potable water, wastewater, electricity, telecommunications, solid waste, and natural gas.

4.4.11.3 Cumulative Effect Analysis

Washington, D.C. is a dense urban area. Utility infrastructure has been critical to supporting the needs of offices and residences in the city for well over a century. This infrastructure has been constructed, maintained, upgraded, and replaced over this time to meet the growing needs of the city. All infrastructure has a design life and as it approaches the end of its useful life, considerations for replacement or rehabilitation must be considered. Typically, as an area grows, demands increase and increased infrastructure capacity is required. As systems are expanded and replaced, best available technologies are regularly implemented. Aging systems are often less efficient and require more maintenance, which can strain capacity. An area such as Washington, D.C. is always in a state of considering when to upgrade or replace aging systems. Large developments can present the opportunity to replace systems that have reached or are approaching their design life with more reliable, efficient, and technologically advanced infrastructure systems that have the potential to offset growing demands.

Cumulative effects to utilities and infrastructure 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. Cumulative effects of past actions, completed before 2022 (Projects 1 – 6) are considered part of the existing conditions of the current utility systems and would not have a significant effect on increased system demand.

Alternative 1: Land Acquisition through Land Exchange

As presented in Section 3.11.3, *Utilities and infrastructure*, *Environmental Consequences*, the implementation of Alternative 1 with Alternatives 1A, 1B, and 1C would not result in significant impacts to utilities and infrastructure. Implementation of Alternative 1 combined with present and reasonably foreseeable future projects would not result in significant cumulative effects to utilities and infrastructure within the study area for the reasons discussed below.

Projects 7 – 13 would result in increased demand and/or flow in one or more utility services, to include potable water, wastewater, natural gas, electricity, and solid waste management. Cumulative effects of these actions have the potential to decrease existing capacity in the regional utility provider systems. Left unchecked, continued demand growth in the area could overburden a regional system. Providers are continually assessing the need to expand or rehabilitate their systems. Development within the WNY Southeast Corner has obvious potential impact on the on-site NAVFAC systems, but all development in the vicinity has the potential to impact the upstream and downstream service providers that must meet the utility needs of the entire region. Regional capacity issues have the potential to impact WNY capacity, even if the on-site infrastructure has excess capacity. The utility demands associated with larger projects such as private development at the WNY Southeast Corner, The Yards Phase 2, 1333 M Street SE, and the Maritime Plaza, which include substantial increases in office space and residential demands would be addressed in provider assessments and incorporated into plans for determining when and how systems should be modified to meet proposed increases. The potential effects of cumulative actions are related to the surrounding local utility provider systems and are not directly connected to the NAVFAC utility systems at WNY. Without proper planning and adherence to applicable codes, required green building initiatives, LID techniques, sustainability goals, and improved environmental performance, the local utilities could be overburdened and indirectly impact the WNY.

This is not a concern at the large-scale utilities that operate in southeast Washington, D.C. When foreseeable increases cause demand to approach capacity, improvements would be designed and implemented. These improvements would continue to increase the life expectancy of all directly and indirectly potentially affected systems.

Alternative 2: Direct Land Acquisition

As shown in utilities and infrastructure Section 3.11.3 *Environmental Consequences*, the implementation of Alternative 2 with Sub-alternatives A, B, and C would not result in significant impacts to utilities and infrastructure. Implementation of the Alternative 2 combined with present and reasonably foreseeable future projects would not result in significant cumulative effects to utilities and infrastructure within the study area for the reasons discussed next.

As there would be no private development on the SEFC E Parcels or on the WNY Southeast Corner under Alternative 2, Cumulative Actions 7 – 13 would result in increased demand and/or flow in one or more utility services, to include potable water, wastewater, natural gas, electricity, and solid waste management. However, this cumulative increased demand under Alternative 2 would be less than cumulative demand under Alternative 1. Cumulative effects of these actions have the potential to decrease existing capacity in the regional utility provider systems and continued demand growth in the area could overburden a regional system. However, providers are continually assessing the need to expand or rehabilitate their systems. Regional capacity issues have the potential to affect WNY capacity, even if the on-site infrastructure has excess capacity.

The utility demands associated with larger projects such as The Yards Phase 2, 1333 M Street SE, and the Maritime Plaza would be addressed in provider assessments and incorporated into plans for determining when and how systems should be modified to meet proposed increases. The potential cumulative effects of cumulative actions are related to the surrounding local utility provider systems and are not directly connected to the NAVFAC utility systems at WNY. When foreseeable increases cause demand to approach capacity, improvements would be designed and implemented. These improvements would continue to increase the life expectancy of all systems potentially directly or indirectly affected.

Summary

Cumulative utilities and infrastructure effects from past, present, and future actions within the ROI would not be significant because when foreseeable increases cause demand to approach capacity, improvements would be designed and implemented. Therefore, implementation of Alternatives 1 or 2 combined with past, present, and reasonably foreseeable actions would not result in significant cumulative effects to utilities and infrastructure within the ROI.

5 Other Considerations Required by NEPA

5.1 Consistency with Other Federal, State, and Local Laws, Plans, Policies, and Regulations

In accordance with 40 CFR section 1502.16(c), analysis of environmental consequences shall include discussion of possible conflicts between the Proposed Action and the objectives of federal, regional, and local land use plans, policies, and controls. Table 5.1-1 identifies the principal federal laws and regulations that are applicable to the Proposed Action and describes briefly how compliance with these laws and regulations would be accomplished.

Table 5.1-1 Principal Federal and State Laws Applicable to the Proposed Action

Federal, State, Local, and Regional Land Use Plans, Policies, and Controls	***Status of Compliance***	***EIS Section***
NEPA; CEQ NEPA implementing regulations; Navy procedures for Implementing NEPA	This EIS has been prepared in accordance with NEPA, CEQ regulations implementing NEPA, and Navy NEPA procedures. Public involvement and review are conducted in compliance with NEPA. The Proposed Action is compliant with NEPA.	Entire EIS
Section 2845 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019	Authorizes a potential land exchange for the WNY to obtain the SEFC E Parcels.	Alternative 1
Southeast Federal Center Public-Private Development Act of 2000, Public Law 106-407	Alternative 1 in the EIS with the land exchange is in accordance with this Public Law and presents an innovative, flexible approach for GSA to work with the private sector to develop the SEFC site.	Alternative 1
CAA	The air quality analysis in the EIS concludes that proposed emissions would contribute to regional emission totals. Washington D.C. is designated as a marginal nonattainment area for ozone, a maintenance area for CO and $PM_{2.5}$, and unclassified/attainment for all other criteria pollutants. Therefore, a conformity determination is required; however, the Proposed Action is exempt from the General Conformity Rule requirements because emissions would be below the *de minimis* threshold for ozone precursors. A Record of Non-Applicability is included in Appendix E (Air Quality Calculations). The Proposed Action is compliant with the CAA.	Section 3.8 *Air Quality*
CWA	Prior to any development, a CWA NPDES Construction General Permit would be obtained and permit conditions adhered to during construction. The Proposed Action is compliant with the CWA.	Section 3.6 *Water Resources*
Rivers and Harbors Act	The Proposed Action does not include the construction of any structure in or over any navigable water of the United States.	Section 3.6 *Water Resources*
NHPA	The Navy is conducting Section 106 consultation with the ACHP, D.C. SHPO, and other consulting parties. Consultation in ongoing.	Section 3.3 *Cultural Resources*

Table 5.1-1 Principal Federal and State Laws Applicable to the Proposed Action

Federal, State, Local, and Regional Land Use Plans, Policies, and Controls	***Status of Compliance***	***EIS Section***
Endangered Species Act	The Proposed Action would have no effect on threatened or endangered species. The Proposed Action is compliant with the Endangered Species Act.	Section 3.1.1 *Biological Resources*
Magnuson-Stevens Fishery Conservation and Management Reauthorization Act	The Proposed Action would not adversely affect essential fish habitat. The Proposed Action is compliant with the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act.	Section 3.1.1 *Biological Resources*
Migratory Bird Treaty Act	The Proposed Action would not result in take of migratory birds. The Proposed Action is compliant with the Migratory Bird Treaty Act.	Section 3.1.1 *Biological Resources*
Bald and Golden Eagle Protection Act	The Proposed Action would not result in the take of bald or golden eagles. The Proposed Action is compliant with the Bald and Golden Eagle Protection Act.	Section 3.1.1 *Biological Resources*
CERCLA	Sites that are undergoing cleanup will continue under their current program. LUCs, if in place, will continue to be adhered to. Any development or changes in land use will be in accordance with applicable decision documents and cleanup standards. The Proposed Action will be compliant with CERCLA.	Section 3.5 *Hazardous Materials and Wastes*
Emergency Planning and Community Right-to-Know Act	Changes to the storage, use, and release of hazardous substances at the WNY as a result of the Proposed Action are not anticipated. Required plans, notifications, and reporting would be updated on the occurrence of any changes. The Proposed Action is compliant with the Emergency Planning and Community Right-to-Know Act.	Section 3.5 *Hazardous Materials and Wastes*
Resource Conservation and Recovery Act	The Proposed Action would not affect the management of hazardous and non-hazardous solid waste. Required plans, notifications, and reporting would be updated on the occurrence of any changes. The Hazardous Waste Storage Site will need to be relocated under Alternative 1. Pending relocation of the Hazardous Waste Storage Site in a suitable location, the Proposed Action is compliant with RCRA.	Section 3.5 *Hazardous Materials and Wastes*
Toxic Substances Control Act	The Proposed Action would not affect the management of specific chemicals including LBP, asbestos, and PCBs. The Proposed Action is compliant with the Toxic Substances Control Act.	Section 3.5 *Hazardous Materials and Wastes*

Table 5.1-1 Principal Federal and State Laws Applicable to the Proposed Action

Federal, State, Local, and Regional Land Use Plans, Policies, and Controls	***Status of Compliance***	***EIS Section***
EO 11988, *Floodplain Management*	The Proposed Action is compliant with this EO because the floodplain cannot be avoided and the Navy would implement appropriate measures to alleviate impacts from flood waters through structural means and preserving or repairing natural drainage to the extent possible. The measures and design considerations would also need to ensure that the building would not obstruct runoff from upgradient areas that could contribute to flood risks on site or in adjacent properties. The Proposed Action is compliant with this EO.	Section 3.6 *Water Resources*
EO 12088, *Federal Compliance with Pollution Control Standards*	The Proposed Action would comply with all applicable pollutions control standards including air emissions, the management of hazardous materials and wastes, the management of contaminated sites, and stormwater pollution prevention. The Proposed Action is compliant with this EO.	Section 3.6 *Water Resources* Section 3.5 *Hazardous Materials and Wastes*
EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations*	This EIS analyzes impacts to environmental justice in minority populations and low-income populations. The Proposed Action is compliant with this EO.	Section 3.10 *Environmental Justice and Protection of Children*
EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*	This EIS analyzes environmental health and safety risks to children. The Proposed Action is compliant with this EO.	Section 3.10 *Environmental Justice and Protection of Children*
EO 13175, *Consultation and Coordination with Indian Tribal Governments*	The Navy is consulting with the Delaware Nation and the Delaware Tribe. Consultation is ongoing. The Proposed Action will be compliant with this EO.	Section 3.3 *Cultural Resources*
National Capital Planning Act of 1952, as amended	The Navy and/or the developer is consulting with NCPC. The Proposed Action would be consistent with requirements.	Section 3.4 *Land Use*
An Act Establishing a CFA, May 17, 1910, ch. 243, 36 Stat. 371 (codified at 40 U.S.C. §§ 9101–9104) (2011)	The Navy and/or the developer is consulting with CFA. The Proposed Action would be consistent with requirements.	Section 3.4 *Land Use*

Notes: § = Section; CAA = Clean Air Act; CEQ = Council on Environmental Quality; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CFA = Commission of Fine Arts; CO = carbon monoxide; CWA = Clean Water Act; D.C. SHPO = District of Columbia State Historic Preservation Officer; EIS = Environmental Impact Statement; EO = Executive Order; LBP = lead-based paint; LUC = Land Use Control; NCPC = National Capital Planning Commission; NEPA = National Environmental Policy Act; NHPA = National Historic Preservation Act; NPDES = National Pollutant Discharge Elimination System; PCB = polychlorinated biphenyl; $PM_{2.5}$ = Particulate Matter Less Than or Equal to 2.5 Microns in Diameter; SEFC = Southeast Federal Center; U.S.C. = United States Code; WNY = Washington Navy Yard.

5.2 Irreversible or Irretrievable Commitments of Resources

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.

Implementation of the Proposed Action would involve human labor; the consumption of fuel, oil, and lubricants for construction vehicles; and loss of various natural resources that were consumed in the production of construction materials (e.g., steel, concrete, asphalt). There would be limited unavoidable loss of natural resources because the environment at the SEFC E Parcels and the surrounding area is currently urban, industrial, commercial, and residential in character and does not contain natural areas. Implementing the Proposed Action would not result in significant irreversible or irretrievable commitment of resources.

5.3 Unavoidable Adverse Impacts

All impacts from the implementation of the alternatives are described in detail in Chapter 3, *Affected Environment* and *Environmental Consequences*). In addition, Section 3.12, *Summary of Potential Impacts to Resources and Impact Avoidance and Minimization,* summarizes the impacts and identifies the mitigation measures the Navy could implement under the action alternatives. Avoidance and minimization of adverse impacts were integrated into the development of the alternatives and existing Navy policy, to the greatest extent practicable. This integration was successful for many resource areas where there would be impacts to the resource, but with compliance with applicable regulations and/or existing Navy management strategies, these impacts were minimized to the greatest extent practicable or not determined to be significant.

5.4 Relationship between Short-Term Use of the Environment and 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.

In the short-term, effects to the human environment with implementation of the Proposed Action would primarily relate to the construction activity itself. Air quality and noise would be impacted in the short-term. The majority of activities addressed in this EIS would be categorized as long-term. The environment at the SEFC E Parcels and the surrounding area is currently urban industrial, commercial, and residential in character and does not contain natural areas. The Navy's proposal to construct modern facilities for Navy use at the SEFC E Parcels would increase long-term productivity of the urban and industrial environment, address the shortfall of current facilities to support the Navy mission, and enhance the AT posture of the WNY. Addressing such shortfalls through planning and overall accommodation of future support facilities would allow the Navy to provide the capacity and capabilities to support required operational readiness and meet the Title 10 mandate (10 U.S.C. section 5062) to be organized, trained, and equipped for prompt and sustained combat. Therefore, the renovation/reuse of

outdated structures, construction of new facilities, and improved operational capabilities would not significantly impact the long-term natural resource productivity of the area, which is already developed for urban uses. In the long term, if Alternative 1A or 2A were selected, the public would benefit with a state-of-the-art museum showcasing Naval history. The Proposed Action alternatives would not result in any impacts that would significantly reduce environmental productivity relative to current conditions or permanently narrow the range of beneficial uses of the environment.

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7 List of Preparers

This EIS was prepared collaboratively between the Navy and contractor preparers.

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Nik Tompkins-Flagg (NAVFAC Washington)	EIS Project Manager
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Dave Collins (NAVFAC Washington)	Installation Restoration Manager
Lisa Dosmann (NAVFAC Washington)	Natural Resources Project Manager
Erica Belton (NSA Washington)	Air Program Manager
Ed Liu (NAVFAC Washington)	Hazardous Waste Program Manager
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Dorothy Peterson (NAVFAC Headquarters)	Environmental Planning Team Lead

Name/Organization	*Experience*	*Resource Area/Responsibilities*	*Years of Experience*
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Kathy Hall (Cardno)	B.A. Earth and Environmental Science	Senior Review – Socioeconomics, Environmental Justice	24
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Kimberly Wilson (Cardno)	-	508 Compliance	42
Jill Yamaner, PE (Cardno)	M.S. Environmental Science and Engineering B.S. Applied Mathematics and Biology	Utilities and Infrastructure	31

8 Distribution List

A letter notifying agencies and interested parties of the Notice of Availability for the Draft EIS was distributed to the following agencies and stakeholders. The EIS is also available on the project website (https://ndw.cnic.navy.mil/WNY-Land-Acquisition/1/).

Notification List	
Federal	
U.S. Environmental Protection Agency - Office of Federal Activities Ms. Cindy Barger, Director, NEPA Compliance Division 1200 Pennsylvania Ave NW WJC Building North Room: 6204M Washington, D.C.20460	U.S. Environmental Protection Agency - Office of Federal Activities Mr. Robert Tomiak, Director, Office of Federal Activities (OFA) 1200 Pennsylvania Ave NW WJC Building North Room: 6204M Washington, D.C. 20460
U.S. Environmental Protection Agency - Region III Mr. Robert Stroud 701 Mapes Rd Fort Meade, MD 20755	U.S. General Services Administration Mr. Brett Banks, Capital Investment Officer 301 7th St SW Washington, D.C. 20024
U.S. General Services Administration Ms. Kristi Tunstall, Program Manager 307 7th St SW Washington, D.C. 20024	U.S. General Services Administration Ms. Nancy Witherell, Regional Federal Preservation Officer (FPO) 301 7th St SW Washington, D.C. 20024
Advisory Council on Historic Preservation Ms. Katharine Kerr, Navy Liaison 401 F St NW, Suite 308 Washington, D.C. 20001-2637	Advisory Council on Historic Preservation Ms. Laura Lavernia, GSA Liaison 401 F St NW, Suite 308 Washington, D.C. 20001-2637
National Park Service, National Capital Area Ms. Kathryn Smith National Historic Landmarks & National Register Coordinator 1100 Ohio Dr SW Washington, D.C.20242	National Capital Parks - East Mr. Daniel Weldon, Cultural Resources Program Manager 1900 Anacostia Dr SE Washington, D.C.20020
U.S. Commission of Fine Arts (CFA) Mr. Dan Fox, Senior Advisor 401 F St NW, Suite 312 Washington, D.C.20001-2728	White House Communications Agency Col. Joy M. Kaczor, Commander, White House Communications Agency 2743 Defense Blvd SW, Building 399 Washington, D.C.20373
U.S. Air Force, Joint Base Anacostia-Bolling (JBAB) Lt. Col. Steven J. Schuldt, Commander 11th Civil Engineer Squadron, JBAB 370, Brookley Ave Washington, D.C. 20032	U.S. House of Representatives Ms. Eleanor Norton, Delegate 2136 Rayburn House Office Building Washington, D.C. 20515

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District Department of Transportation Mr. Everett Lott, Director 250 M St SE Washington, D.C.20003	District Department of Transportation, Trails Program Mr. Michael Alvino Coordinator, Anacostia Riverwalk Trail 250 M St SE Washington, D.C.20003
District Department of Energy and Environment Mr. Tommy Wells, Director 1200 First St NE Washington, D.C.20002	D.C. Office of Planning Ms. Anita Cozart, Interim Director 1100 4th St SW, Suite 650 Washington, D.C.20024
Government of the District of Columbia The Honorable Muriel Bowser, Mayor 1350 Pennsylvania Ave NW, Room 316 Washington, D.C.20004	Metropolitan Washington Council of Governments Mr. Chuck Bean, Department Head, Executive Office 777 N Capitol St NE, Suite 300 Washington, D.C.20002
Council of the District of Columbia Mr. Charles Allen, Councilmember, Ward 6 1350 Pennsylvania Ave NW Washington, D.C.20004	Council of the District of Columbia The Honorable Elissa Silverman 1350 Pennsylvania Ave NW, Room 408 Washington, D.C.20004
Council of the District of Columbia The Honorable Kenyan R. McDuffie 1350 Pennsylvania Ave NW, Room 106 Washington, D.C. 20004	Committee on Business and Economic Development Ms. Alicia DiFazio, Committee Director 1350 Pennsylvania Ave NW Washington, D.C.20004
Council of the District of Columbia The Honorable Phil Mendelson 1350 Pennsylvania Ave NW, Suite 504 Washington, D.C.20004	Committee on Health Mr. Vincent Gray, Chairperson 1350 Pennsylvania Ave NW Washington, D.C.20004
Committee on Government Operations and Facilities Robert White, Jr., Councilmember at Large 1350 Pennsylvania Ave NW Washington, D.C.20004	D.C. Historic Preservation Review Board Ms. Marnique Heath, Chair 1100 4th St SW, Suite 650 Washington, D.C.20024
Committee on Transportation and the Environment Ms. Mary Cheh, Committee Chair 1350 Pennsylvania Ave NW, Suite 108 Washington, D.C.20004	Van Ness Elementary School Cynthia Robinson-Rivers 1150 Fifth Street SE Washington, DC 20003

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Advisory Neighborhood Commissions (ANC) 6B Corey Holman, Chairperson 926 14th Street SE Washington, D.C.20003	Advisory Neighborhood Commissions (ANC) 6B 921 Pennsylvania Avenue SE Washington, D.C. 20003
Advisory Neighborhood Commissions (ANC) 6C Ms. Karen Wirt, Chairperson 234 E Street NE Washington, D.C. 20002	Advisory Neighborhood Commissions (ANC) 6C P.O. Box 75604 Washington D.C. 20013
Advisory Neighborhood Commissions (ANC) 6D Mr. Edward Daniels, Chairperson 1111 New Jersey Avenue SE, #720 Washington, D.C. 20003	Advisory Neighborhood Commissions (ANC) 6D 1101 4th Street SW Washington, D.C. 20024
Advisory Neighborhood Commissions (ANC) 6E P.O. Box 93020 Brentwood Station Washington, D.C. 20090	Advisory Neighborhood Commissions (ANC) 6E Michael Eichler, Chairperson 806 Rhode Island Avenue NW, #1 Washington, D.C. 20001
Advisory Neighborhood Commission (ANC) 8A 2100-D Martin Luther King Jr Ave SE Washington, D.C.20020	Advisory Neighborhood Commission (ANC) 8A Jamila White, Chairperson P.O. Box 30700 Washington, D.C. 20019
Advisory Neighborhood Commission (ANC) 8B Mr. Kevin B. Coleman, Chairperson 2446 Elvans Road SE, #1/2 Washington, D.C. 20020	Advisory Neighborhood Commission (ANC) 8B 1809 Savannah Street SE, Suite 8B Washington, D.C. 20020
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Advisory Neighborhood Commission (ANC) 8D PO Box 54781 Washington, D.C.20032	Advisory Neighborhood Commission (ANC) 8D Ms. Patricia Carmon 816 Southern Avenue SE, #204 Washington, D.C.20032
Organizations	
D.C. Preservation League	Committee of 100
Capitol Hill Restoration Society	Capitol Riverfront BID
Earthjustice	Everyone Home D.C.
Capitol Hill Association of Merchants & Professionals	Anacostia Watershed Society
Earth Conservation Corps	Sierra Club D.C. Chapter
Chesapeake Climate Action Network	Chesapeake Bay Program Office
Interstate Community on the Potomac River Basin	Washington Gas
Sousa Neighborhood Association	Potomac Gardens Resident Council
Anacostia Coordinating Council	Young Memorial Community Development Group
Anacostia Riverkeeper	Anacostia Business Improvement District

Notification List	
Anacostia Park and Community Collaborative	Fairlawn Citizens Association
Friends of Anacostia Park	Historic Anacostia Block Association
Washington Parks and People	Eastern Market Community Advisory Committee
Stanton Park Neighborhood Association	Barracks Row Main Street
Navy Yard Neighborhood Association	Hillcrest Community Civic Association
Southwest Neighborhood Assembly	Southwest D.C. Community Center
Committee on Government Operations and Facilities	Committee on Health
Committee on Transportation and the Environment	Washington Area Bicyclist Association
Individuals	
Ms. Carol Casperson	Mr. Johnnie N. Ferguson
Mr. Seymour M. Selig	Mr. Banks B. Banks
Mr. Jacque Patterson	Ms. Gloria Hamilton
Ms. Shushan Israel	Mr. Tom Daly III
Ms. Susan Bennett	Ms. Katreena Shelby
Ms. Elissa Feldman	Mr. Carl Cole
Ms. Lorraine Griffen	Ms. Diane Fleming
Ms. Pat Jones	Mr. Hans Moennig
Ms. Mary Proctor	Mr. Reggie Parish
Ms. Brenda Lee Richardson	Mr. Victor R. McMahan
Mr. Mark Holler	Mr. & Mrs. Steckler
Ms. Olivia Henderson	Mr. Francis Campbell
Mr. William Ellis	Dionne Brown
Ms. Yottie Kenan-Smalls	Mr. Lloyd Logan
Ms. Barbara Clark	Ms. Greta Fuller
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