

APPENDIX B
Traffic Study

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Draft
TRAFFIC STUDY
For
PROPOSED LAND ACQUISITION
At The
WASHINGTON NAVY YARD, WASHINGTON D.C.

October 2022



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Abstract

Designation: Draft Traffic Study

Title of Proposed Action: Proposed Land Acquisition at the Washington Navy Yard

Project Location: Washington, D.C.

Lead Agency: 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

Naval District Washington (hereinafter referred to as the Navy) prepared this traffic study in accordance with District Department of Transportation Guidelines for Comprehensive Transportation Review Requirements and the most recent editions of the Traffic Engineering Handbook, The Highway Capacity Manual, The Manual on Uniform Traffic Control Devices, and the American Association of State Transportation Officials Policy on Geometric Design of Highways and Streets.

The Navy proposes to obtain approximately 6-acres of land on 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 of the SEFC E Parcels from U.S. General Services Administration 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 design and construction could begin as early as 2023 and occur over a period of 10 years. This traffic study evaluates the potential traffic impacts associated with the No Action Alternative and all action alternatives.



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Draft Traffic Study for the Proposed Land Acquisition at Washington Navy Yard, Washington D.C.

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Abbreviations and Acronyms

Acronym	Definition
#	number
a.m.	ante meridiem
AT	Antiterrorism
Ave	avenue
Blvd	boulevard
CBD	central business district
CNIC	Commander, Navy Installations Command
CTR	Comprehensive Transportation Review
D.C.	District of Columbia
DDOT	District Department of Transportation Guidelines
EIS	Environmental Impact Statement
GIS	geographic information system
GSA	General Services Administration
I-	Interstate
ITE	Institute of Transportation Engineers
LOS	level of service
N/A	not applicable

Acronym	Definition
NAVFAC	Naval Facilities Engineering Systems
NB	Northbound
NCPC	National Capital Planning Commission
NHHC	Naval History and Heritage Command
NSAW	Naval Support Activity Washington
p.m.	post meridiem
ROI	region of influence
SB	Southbound
s/veh	seconds per vehicle
SE	Southeast
SEFC	Southeast Federal Center
sf	square feet
veh/d	vehicles per day
veh/h	vehicles per hour
WASH	Washington
WE	Weekend
WNY	Washington Navy Yard

1 Introduction and Description of Project Tasking

1.1 Introduction

This report presents the findings of a traffic study prepared as part of an Environmental Impact Statement (EIS) for Naval District Washington, hereinafter referred to as the Navy. The Navy proposes to obtain approximately 6 acres of land on the Southeast Federal Center (SEFC) E Parcels (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 achieve the following:

- 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
- enhance the overall safety of personnel, facilities, and infrastructure at the WNY

Should the Navy obtain ownership of the SEFC E Parcels from the 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 traffic study in accordance with District Department of Transportation Guidelines (DDOT) for Comprehensive Transportation Review (CTR) Requirements and the most recent editions of the Traffic Engineering Handbook, The Highway Capacity Manual, The Manual on Uniform Traffic Control Devices, and the American Association of State Transportation Officials Policy on Geometric Design of Highways and Streets.

1.2 Location

The installation is located in an urban area surrounded by public facilities, parks, and residential communities, including the SEFC (Figure 1.2-1). The WNY consists of approximately 77.9 acres of land located between 5th and 11th Streets in the southeastern quadrant of D.C. (Figure 1.2-2). 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 Interstate (I-) 395, I-295, South Capitol Street, M Street SE, and 11th Street SE. The WNY is accessible by Metrorail and Metrobus.

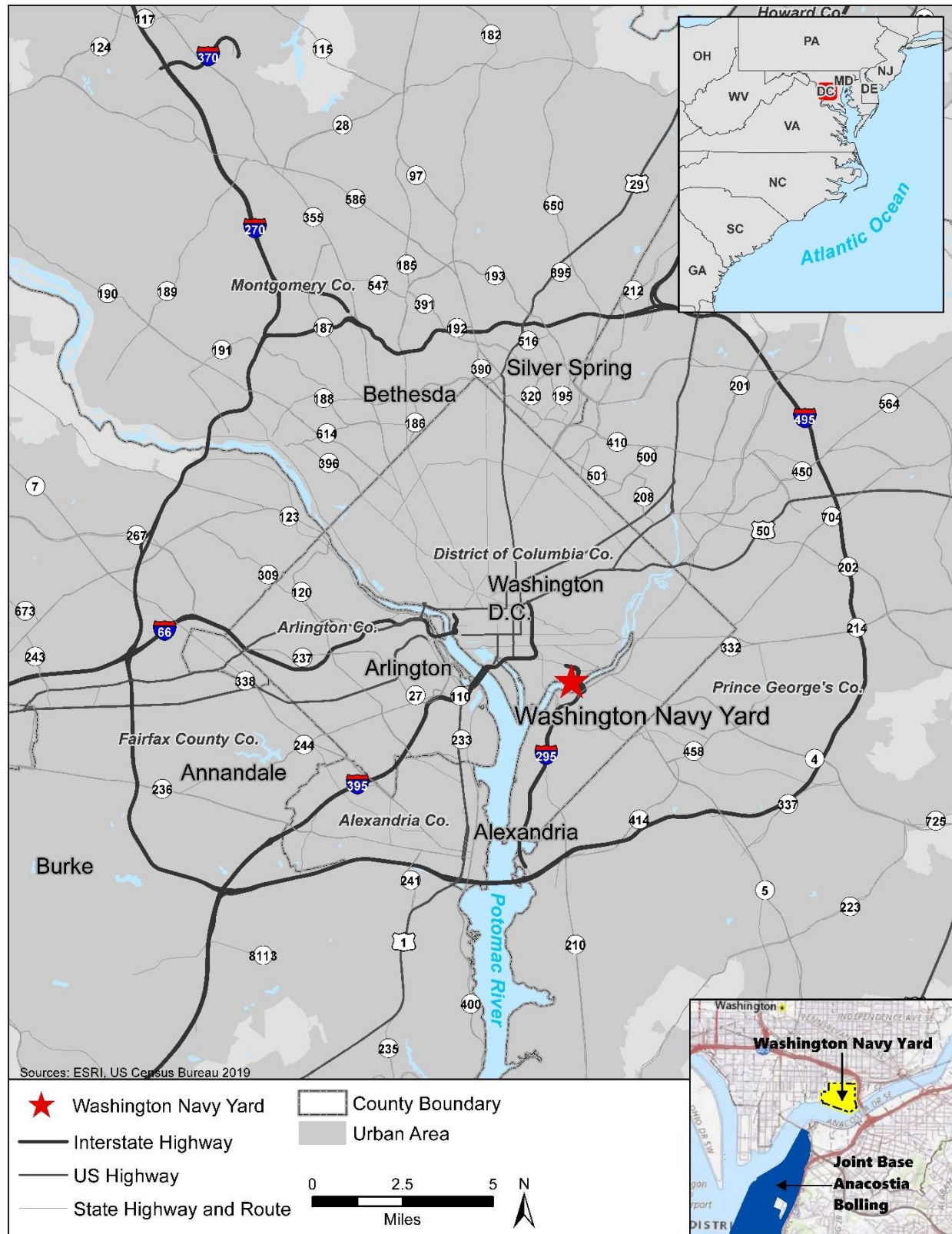


Figure 1.2-1 Location Map



Figure 1.2-2 Site Map

1.3 Description of the Project Tasking and Assumptions Agreement

This study presents a condition assessment report of the traffic capacity (including parking) and level of service (LOS) analysis for both existing conditions and for future requirements based on alternatives involving the acquisition of the SEFC E Parcels, potential exchange of the WNY Southeast Corner, and future uses of these properties. This study also provides recommendations for improvements, if warranted, to the road systems based on the results of the capacity and LOS analysis of future requirements, as well as a list of findings and recommendations for the above-described evaluation.

The traffic study region of influence (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 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 datasets containing all of the signalized intersections within this 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 1.3-1 illustrates the traffic study area and Table 1.3-1 presents the numbered intersections.

The DDOT CTR process provides requirements for the study, including a study area definition, trip generation, trip distribution, modal split, analysis years, analysis methods, growth factors, and No Action Alternative assumptions. Attachment A, *DDOT Comprehensive Traffic Review Scoping Form*, contains the final DDOT CTR form. Prior to initiating the traffic analysis, the Navy developed tools, data parameters, and assumptions to be used in the analysis. The process began with a phone call with DDOT on December 21, 2021. Once the Navy developed the Proposed Action and alternatives, a DDOT CTR form was prepared containing the assumptions for the study, including models to be used. DDOT provided review and comments, and the Navy responded as documented in the form (Attachment A). Upon final input on assumptions in July 2022, the Navy conducted the traffic modeling.



Figure 1.3-1 Traffic Study Intersections

Table 1.3-1 WNY Traffic Count Locations

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

Note: Ave = avenue; Blvd = boulevard; I- = Interstate; NB = northbound; SB = southbound; SE = southeast.

1.4 Previous Traffic Studies and Planning Documents

1.4.1 2017 Traffic Study

In 2017, the Navy prepared a stand-alone transportation study based on the Land Acquisition and Development Environmental Assessment. The study analyzed pedestrian, bicycle, and transit travel modes; traffic capacity and LOSs; truck access; and parking conditions for both existing and future conditions in 2025. The analysis of the future conditions consisted of determining the impacts of a 2025 No Action Alternative plus the Proposed Action to acquire approximately 4 acres of land at the northwestern corner of the installation boundary to construct compatible development, such as the National Museum of the U.S. Navy, along the perimeter of the WNY. This report provided the analysis for each transportation mode for alternative actions compared to no action and presented recommendations by travel mode based on the analyses. Under Alternative 1, which was the Preferred Alternative, the Navy would acquire the project site for the purpose of protecting critical assets on the WNY within security requirements and would construct a new Navy Museum. Development would include the construction of an approximate 300,000-square-foot museum; rehabilitation of Building 74 and incorporation as part of the museum; relocation of the WNY fence line along the museum and across Tingey Street; partial removal of the historic Navy Yard Perimeter Wall; and potential procurement of easements, totaling at least 40,000 square feet, for pedestrian visitors and vehicle traffic related to the museum.

Based on the analysis performed in the study, comparing the No Action Alternative with the action alternatives indicated that mitigation options need to be explored for two intersections—M and 5th Streets SE and M and 7th Streets SE—to address vehicle delays that would exceed the five-second threshold.

A third intersection, M and 11th Streets SE, would not exceed the five-second added vehicle delay or the 150-foot additional queue length thresholds. However, this intersection was not included in the traffic assessment study areas because of multiple proposed developments that are planned to the west of the WNY. As a result, no recommended improvements for this intersection were provided in the study. The Draft Environmental Assessment was never finalized because the purchase of the property was not approved by Congress.

1.4.2 MoveDC

DDOT completed an update to the D.C. Multimodal Long-Range Transportation Plan in December 2021 (DDOT, 2021). The plan provides an overall vision of existing conditions and future needs of the transportation system. It establishes goals including safety, equity, mobility, project delivery, management and operations, sustainability, and enjoyable spaces for DDOT to invest in, to address the transportation needs in the eight wards. DDOT evaluated access by pedestrians, transit, bicycles, freight, and vehicles. Pedestrians, buses, bicycles, and freight benefit from defined networks within the overall transportation system to provide safety, efficiency, connectivity, and access. Mapping these networks revealed gaps in the existing networks and identified areas where improvements are needed. This plan guides DDOT with future decisions on projects to be implemented and includes safety, equity, mobility, and sustainability.

1.4.3 M Street SE-SW Transportation Study

The M Street SE-SW Transportation Study identified existing and future transportation and improvements within an approximately 1.7-square-mile area along M Street SE/SW and the Southwest waterfront from 12th Street SE to 14th Street SW and from the Southwest/Southeast Freeway south to the Anacostia River/Washington Channel (Anacostia Waterfront, 2022). The study analyzed integration of transit, bicycling, and walking with motor vehicle traffic in order to best serve neighborhoods. The study promotes safety and balancing the travel needs of residents and visitors with new retail and mixed-use development projects planned for the area.

1.4.4 Comprehensive Plan for the National Capital

The *Comprehensive Plan for the National Capital*, prepared by the National Capital Planning Commission (NCPC) and D.C., provides a unified plan for growth and development of the District and is composed of two parts: (1) the Federal Elements and (2) the District Elements (NCPC, 2021). 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 colocation 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* (NCPC, 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 the 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.

1.4.5 Vision Zero Action Plan

Vision Zero is a part of the Mayor's Challenge for Safer People and Safer Streets, designed to improve pedestrian and bicycle transportation safety. The goal for 2024 is to have zero fatalities and serious injuries to those using the transportation system, with the use of data, education, enforcement, and engineering. More than 20 agencies are engaged in this initiative. Multi-modal safety improvements are being installed across the District, including intersection and roadway improvements, pedestrian flashers, and driver feedback signs. Additional improvements include dual turn lanes, high-crash intersections, and task force reviews.

1.4.6 Capital Bikeshare Development Plan

In 2016, DDOT issued a *Capital Bikeshare Development Plan* (DDOT, 2020) to guide growth of bike shares within D.C. The plan was updated in 2020 and includes revisions to the strategic plan, market analysis, expansion priorities, financial plan, and business plan. The plan assesses how well Capital Bikeshare serves its existing market and outlines plans for growth and expansion, reviews policies, identifies how Capital Bikeshare is affected by industry trends and competition in the shared mobility space, evaluates the business model to maximize the value of investment in Capital Bikeshare, and evaluates equity initiatives and targeted outreach strategy.

1.4.7 Washington Metropolitan Area Transit Authority's (WMATA) Metrorail and Metrobus Plans

WMATA is investing \$12.4 billion to improve system safety, reliability, and the region's economy with a 6-year, capital program approved on March 24, 2022 (WMATA, 2022). The capital program is designed to improve rail safety, bus and paratransit system, and customer experience and maintain infrastructure. The investment will include new railcars, buses and garages, and paratransit vehicles; upgrades to stations and platforms, fire-suppression and emergency response systems; and replacing and repairing tracks, tunnels, bridges, and signals.

1.4.8 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* (NCPC, 2021), 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 recreational 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 strategy plan for development parcels, which identifies areas for redevelopment/infill and renovation/retrofitting to support changes in mission and personnel population and a proposed land exchange to support 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 are shown as areas for both redevelopment/infill and renovation/retrofitting. These parcels are also designated long term for administrative, commercial, and parking land use, providing land use options that could improve the installation's AT posture.

1.4.9 The Yards Master Plan

The original SEFC Master Plan was developed in 2005 by the developer selected to redevelop the federal holdings released by the WNY. The redevelopment plan was updated in 2007, when the GSA, D.C. State Historic Preservation Officer, and the Advisory Council on Historic Preservation entered into a Section 106 Programmatic Agreement 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 (GSA, 2020), 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.

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2 Description of the Proposed Action

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

- 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
- 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).

2.1 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 private development on the SEFC E Parcels would 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 for construction in 2023. This section provides details about the planned, private development on the SEFC E parcels that were derived from several sources: the SEFC Revised Master Plan 2nd Amendment (GSA, 2020) and *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 2.1-1). This planned, private development includes potential renovation of two historic buildings (Buildings 74 and 202) and construction of two new buildings. Renovated Building 202 could provide approximately 328,000 square feet of office space. Renovated Building 74 and the two new buildings (constructed at a height of approximately 110 feet) would provide approximately 538,000 square feet of residential space (Table 2.1-1) (GSA, 2020). In addition, approximately 581 parking spaces would be provided. The development and construction period is assumed to be 10 years, starting as early as 2023.

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 measures. Moreover, the safety of personnel, facilities, and infrastructure at the WNY adjacent to the SEFC E Parcels would be degraded, thereby threatening national security.

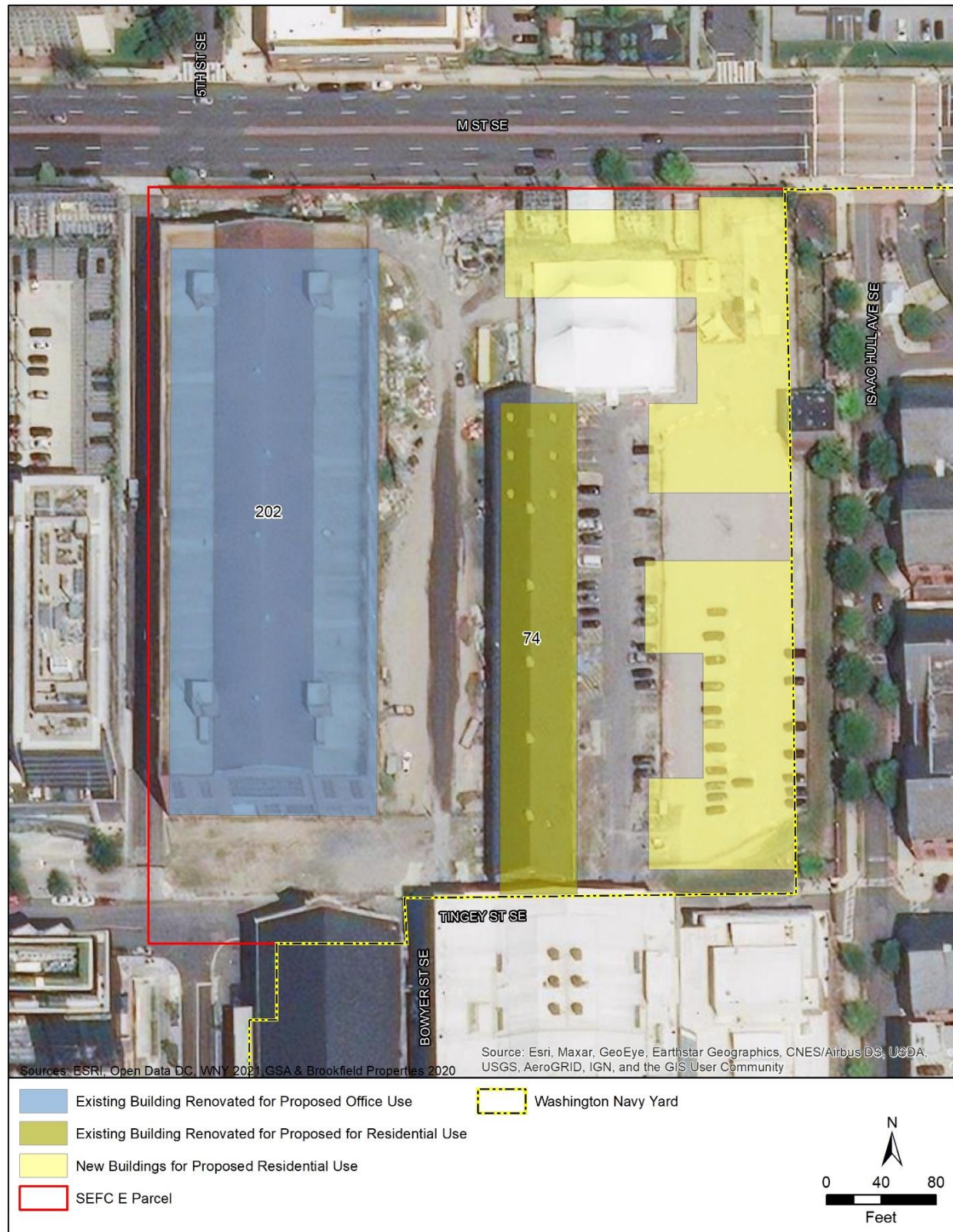


Figure 2.1-1 No Action Alternative: Private Development on the SEFC E Parcels

Table 2.1-1 No Action Alternative: Private Development on SEFC E Parcels

<i>Proposed Activity</i>	<i>Approximate Size (square feet)</i>	<i>Estimated Number of Residential Units⁽¹⁾</i>	<i>Estimated Number of Workers⁽²⁾</i>
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: SEFC = Southeast Federal Center.

1. Average size for each residential unit on the SEFC E Parcels is assumed to be approximately 1,000 square feet (DoN, 2022).

2. Number of workers for office space on the SEFC E Parcels is estimated using an assumption of 333 square feet per worker (DoN, 2022).

The No Action Alternative analyzes the developer's planned development of the SEFC E Parcels to consider the consequences of the Navy not executing the Proposed Action.

2.2 Alternative 1: Land Acquisition through Land Exchange

Under Alternative 1, the Navy would obtain acquisition rights and ownership of the 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 the approximately 6 acres of land on the SEFC E Parcels adjacent to the northwestern perimeter of the WNY (Figure 2.2-1). 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 at the WNY
- future development at the WNY Southeast Corner by the private developer
- in-kind considerations at the WNY to be provided by the developer
- three different alternatives for the Navy's future use of the SEFC E Parcels – referred to as Alternative 1A (relocated Navy Museum), 1B (Navy administrative development), and 1C (no development).

Table 2.2-1 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 portion of the SEFC E Parcels and perimeter wall. The developer would acquire approximately 15 acres at the WNY, to include the following assets, by a combination of lease and transfer: Buildings 68, 70, 154, 166, 211, and 218; Admiral's Barge Slipway; associated parking areas (Building 405 and surface parking areas); part of the Riverwalk; and Piers 1 and 2. Table 2.2-1 indicates which buildings and structures would be leased or transferred.



Figure 2.2-1 Alternative 1: SEFC E Parcels/WNY Southeast Corner Land Exchange

Table 2.2-1 Alternative 1: Buildings, Structures, Tenants, and Personnel Affected by the Land Exchange

<i>Transaction</i>	<i>Building/ Structure</i>	<i>Tenants to Be Relocated</i>	<i>Building Size</i>	<i>Number of Personnel</i>
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 (NHHHC), 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; GIS = geographic information system; N/A = not applicable; NAVFAC = Naval Facilities Engineering Systems Command; NHHHC = Naval History and Heritage Command; NSAW = Naval Support Activity Washington; SEFC = Southeast Federal Center; sf = square feet; WASH = Washington; WNY = Washington Navy Yard.

1. Square feet derived from GIS data

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.

2.2.1 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 line would be relocated between the WNY and private development on the WNY Southeast Corner. Implementation of the Preferred Alternative 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 and general physical security requirements are evaluated in this EIS. AT standards consist of restrictions for on-site planning, including standoff distances, building separation, unobstructed space, drive-up and drop-off areas, access roads, and parking; structural design; structural isolation; and electrical and mechanical design. AT standards would be incorporated into the design of all Navy facilities on the SEFC E Parcels. Potential land use in the WNY Southeast Corner would be sufficient distance from the installation's most sensitive operations.

Figure 2.2-2 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 2.2-2 and would be dependent upon the review and approval by the Navy and D.C. agencies (e.g., D.C. State Historic Preservation Officer, NCPC, U.S. Commission of Fine Arts, DDOT, Department of Energy and Environment, among others).

For traffic analysis purposes, the Navy estimated the maximum level of private development in the WNY Southeast Corner would include the features described in Table 2.2-2. To undertake these projects, three buildings would potentially be renovated, and three new buildings could be constructed. Subject to the outcome of the Section 106 of the National Historic Preservation Act consultation, 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 2.2-2 Alternative 1: Private Development on the WNY Southeast Corner

<i>Proposed Activity</i>	<i>Approximate Size (square feet)</i>	<i>Estimated Number of Residential Units</i>	<i>Estimated Number of Employees</i>
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: WNY = Washington Navy Yard

1. Number of employees per dwelling unit was estimated using one office plus one 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).



Figure 2.2-2 Alternative 1: Conceptual Layout for Private Development on the WNY Southeast Corner

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.

2.2.2 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 National Defense Authorization Act, 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 (Department of Defense Financial Management Regulation 7000.14-R).

Real property in-kind considerations may involve alteration, repair, or improvement of property leased instead of rental payments. Real property in-kind considerations may also include maintenance or restoration of property or facilities, as well as construction of new facilities. Expense-type in-kind considerations may include real property maintenance services or other services relating to activities that would occur on the leased property. Figure 2.2-3 and Table 2.2-3 show the in-kind considerations that may be provided by the developer to the Navy under Alternative 1.

Table 2.2-3 Alternative 1: Potential In-Kind Considerations Provided by Developer

<i>Building/Structure</i>	<i>In-Kind Consideration</i>	<i>Approximate Size</i>
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 11 th 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: a.m. = ante meridiem (morning); N/A = not applicable; p.m. = post meridiem (afternoon); WNY = Washington Navy Yard.

1. Additional floors and parking spaces would be subject to NCPC approval during Master Plan update process.



Figure 2.2-3 Alternative 1: In-Kind-considerations at WNY Provided by the Developer

2.3 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 the GSA through a federal-to-federal transfer (Figure 2.3-1). No WNY property would transfer to the developer; no missions or tenants would need to be relocated under this alternative. 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

2.3.1 SEFC E Parcels Proposed Development under both Alternative 1 and Alternative 2

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

- A: Reuse of the SEFC E Parcels with relocated Navy Museum
- B: Reuse of the SEFC E Parcels with Navy Administrative Development
- 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; when combined with Alternative 2, they are referred to as Alternatives 2A, 2B, and 2C.

2.3.1.1 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 2.3-2). 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.

Under Sub-alternative A, one new building would be constructed, and three existing buildings could be renovated for the new museum, as described in Table 2.3-1. Construction would be phased over a 10-year period, starting as early as 2023.

Table 2.3-1 Sub-alternative A: Proposed Building Construction and Renovation for Relocated Navy Museum on SEFC E Parcels

<i>Proposed Activity</i>	<i>Approximate Size (square feet)</i>	<i>Estimated Number of Museum Employees</i>	<i>Estimated Number of Annual Visitors</i>
Construction of new building on SEFC E Parcels for museum and conference center	270,000	81	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 to 500 spaces)	59,600		
Renovation of Building 118 in the WNY for museum special event space	18,000		
Totals	347,600	81	1,100,000

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



Figure 2.3-1 Alternative 2: Land Acquisition of SEFC E Parcels

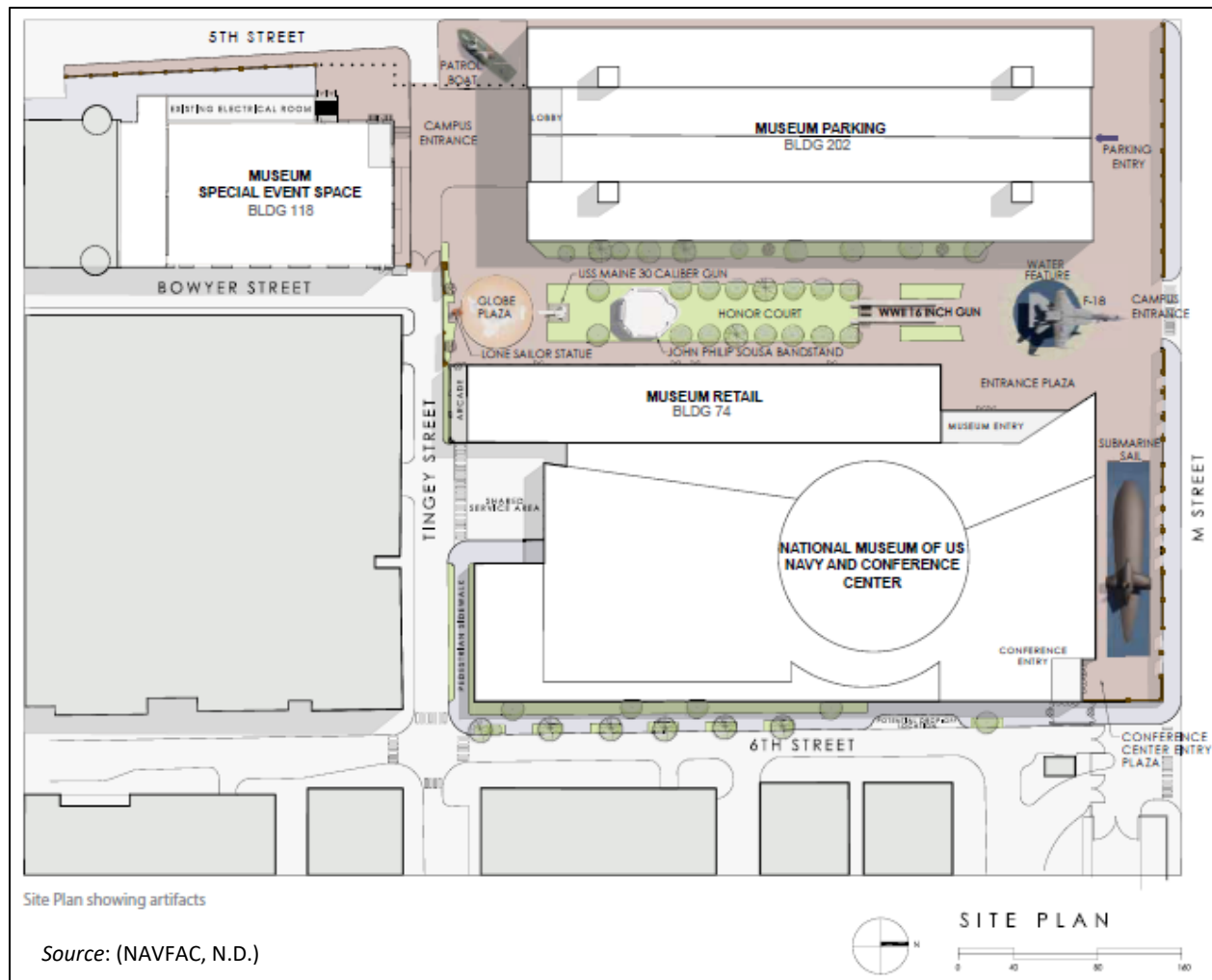


Figure 2.3-2 Conceptual Layout of Proposed Buildings for Relocated Navy Museum

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 2.2-1). 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 U.S. 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 the 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.

2.3.1.2 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 2.3-3). 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; 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 five 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 2.3-2. Construction would 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 2029–2030 timeframe. Private offices for businesses that are currently located in Building 74 would be required to relocate under Sub-alternative B (see Table 2.2-1).

Table 2.3-2 Sub-alternative B: Proposed Building Construction and Renovation for Navy Administrative Offices on SEFC E Parcels

<i>Proposed Activity</i>	<i>Approximate Size (square feet)</i>	<i>Estimated Number of Employees⁽¹⁾</i>
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

Note: SEFC = Southeast Federal Center.

2.3.1.3 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. 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.

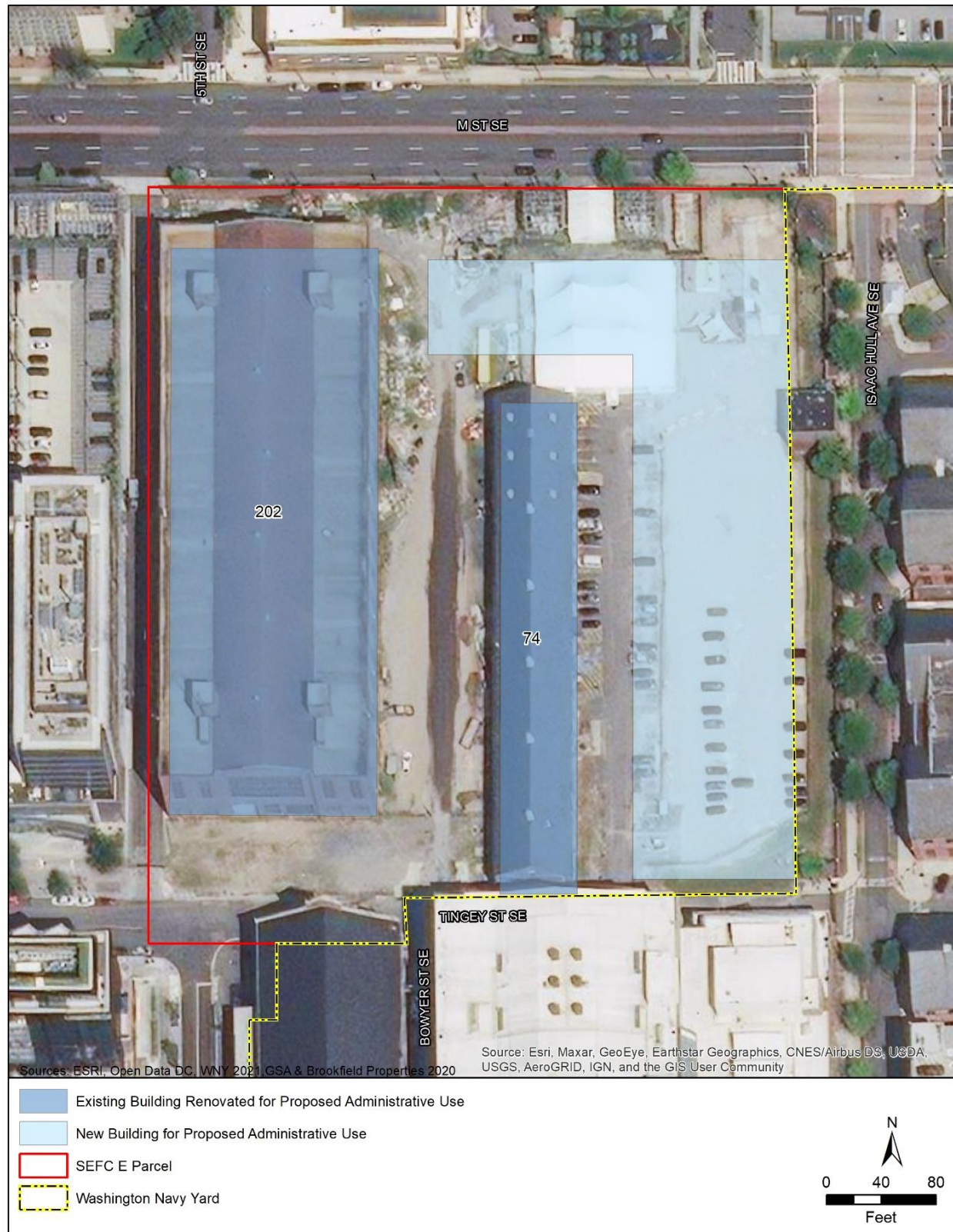


Figure 2.3-3 Proposed Building Construction and Renovation for Navy Administrative Offices on SEFC E Parcels

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3 Operation Analysis of Existing Conditions

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 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.

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.

3.1 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 CTR 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 Affected Environment

This section presents the transportation ROI and summarizes conditions in the ROI as of February 2022.

3.2.1 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 1.3-1 illustrates the traffic ROI, and Table 1.3-1 presents the numbered 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 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.

3.2.3 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.

3.2.3.1 Analysis Tools

The traffic study analyzed the 22 intersections using multiple software tools to perform an intersection capacity analysis, an intersection queueing 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 3.2-1), 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 3.2-1 DDOT Historical Traffic Volumes in the WNY Area from 2012 to 2019

<i>Year</i>	<i>M Street near New Jersey Avenue</i>	<i>11th Street near M Street</i>	<i>L Street near 11th Street</i>	<i>11th Street near I Street</i>
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

Source: (DDOT, 2012 to 2019)

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.

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 work places less than five days per week. The WNY Health Protections Condition has evolved with pandemic conditions resulting in 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.

3.2.3.2 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 3.2-2 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 3.2-3 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 3.2-2 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 3.2-3 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).

3.2.3.3 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 3.2-2 and 3.2-3 indicate the intersections containing these queuing problems in existing conditions.

3.2.4 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.

4 Operation Analysis of Future Conditions

4.1 Assumptions

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 3.2-1).
- 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 4.1-1 shows the entry points to the SEFC E Parcels, while Figure 4.1-2 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.

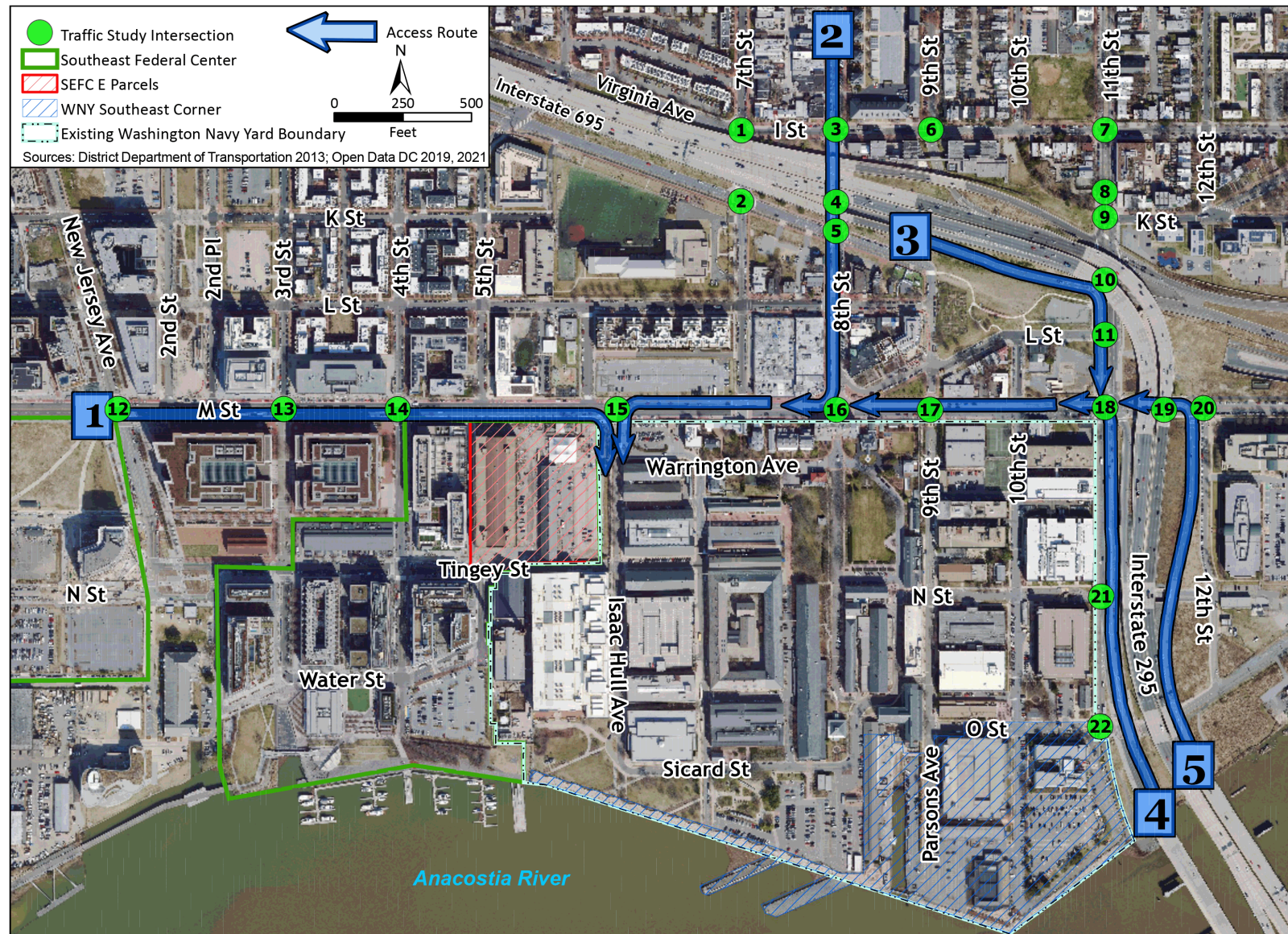


Figure 4.1-1 Traffic Entry Points to the SEFC Parcels

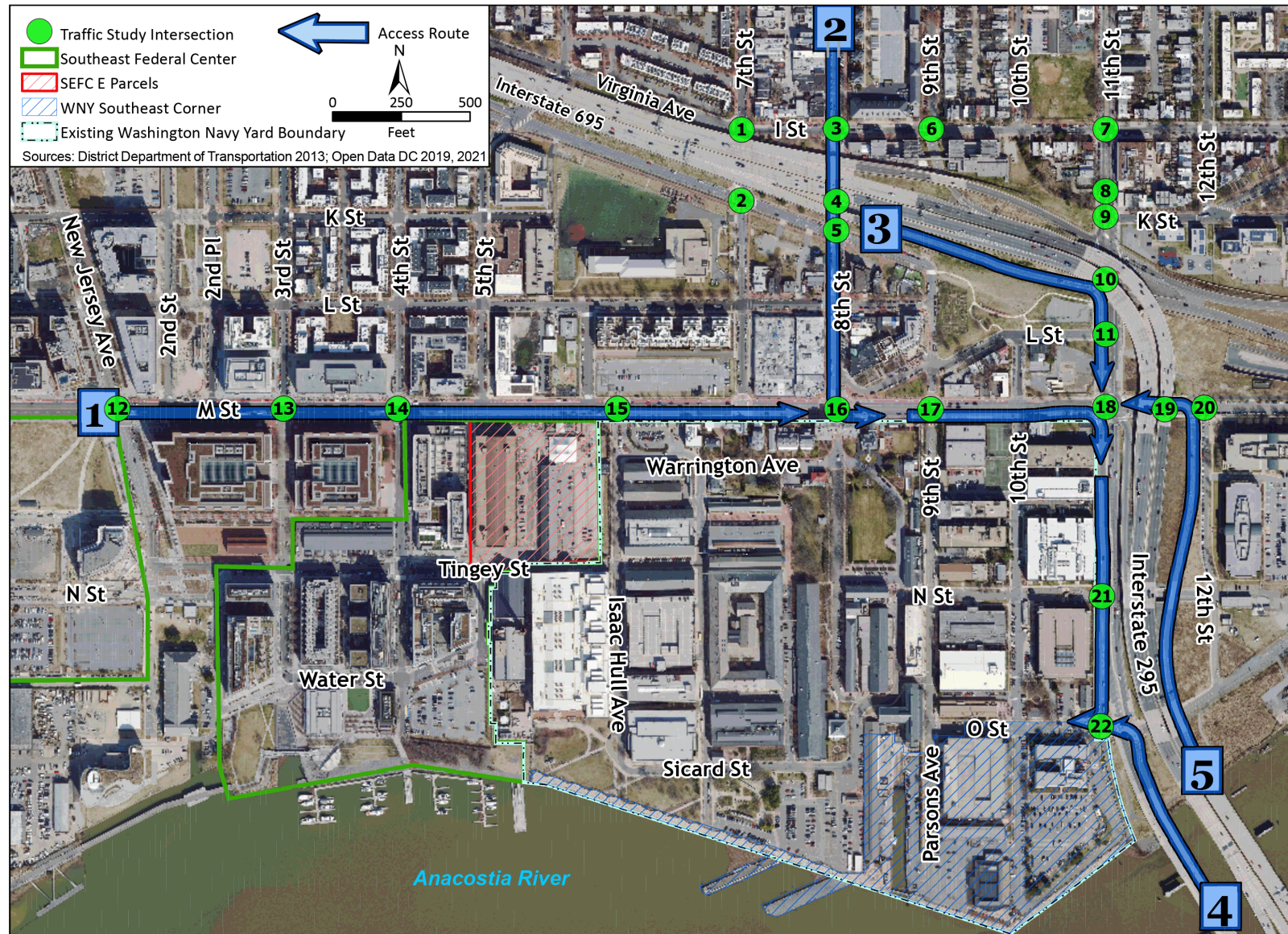


Figure 4.1-2 Traffic Entry Points to the WNY Southeast Corner

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.

4.2 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 4.2-1 presents the annual vehicle trip estimates for the No Action Alternative.

Table 4.2-1 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 4.2-2 presents the peak morning and afternoon traffic estimates. Table 4.2-3 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 seconds per vehicle (versus 57 seconds per vehicle under existing conditions). Four intersections have potential for possible to occasional queue spillback in the morning and four in the afternoon peak.

Table 4.2-2 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	
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)

Orange shading = LOS failing.

Table 4.2-3 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	*

Table 4.2-3 No Action Alternative Traffic Performance for Weekend Peak

<i>Intersection #</i>	<i>Weekend Peak</i>		
	<i>Delay (s/veh)</i>	<i>LOS</i>	<i>Queuing</i>
11	Unsignalized	Unsignalized	
12	14	B	
13	12	B	
14	17	B	
15	11	B	
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)

4.3 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 CTR 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.

4.3.1 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).

4.3.2 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 Washington Navy Yard Transportation Management Program, and survey results provided by the Smithsonian Institute. Table 4.3-1 shows the projected data for tourists and shows the annual vehicle trip estimates.

Table 4.3-1 Mode Split for Museum Visitors

<i>Mode Share</i>	<i>Projected Tourists (percent)</i>
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 4.3-2 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).

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).

Table 4.3-2 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.

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 seconds per vehicle (versus 57 seconds per vehicle under existing conditions). Four intersections have potential for possible to occasional queue spillback in the morning and four in the afternoon peak.

4.4 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 CTR 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 4.4-1. 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 seconds per vehicle (versus 57 seconds per vehicle under

existing conditions). Four intersections have potential for possible to occasional queue spillback in both the morning and afternoon peak.

Table 4.4-1 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

4.5 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 4.5-1, Table 4.5-2, and Table 4.5-3, 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 congesti^{on} level in the morning peak. However, the average delay per vehicle at this intersection would be approximately 64 seconds per vehicle (versus 57 seconds per vehicle under existing conditions). Four intersections have potential for possible to occasional queue spillback in both the morning and afternoon peak.

Table 4.5-1 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	

Table 4.5-1 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
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 4.5-2 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	

Table 4.5-2 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
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 (afternoon); 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 4.5-3 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	
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)

4.6 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 4.6-1 shows the annual vehicle trip estimates for Alternative 2A while Table 4.6-2 shows annual vehicle trip estimates for Alternative 2B. Tables 4.6-3, Table 4.6-4, and Table 4.6-5 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 AM peak. However, the average delay per vehicle at this intersection would be approximately 65 seconds per vehicle (versus 57 seconds per vehicle under existing conditions) for Alternatives 2A and 2C while 63 seconds per vehicle 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.

Table 4.6-1 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 4.6-2 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 4.6-3 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	

Table 4.6-3 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
6	Unsignalized			Unsignalized			Unsignalized		
7	25	C		7	25	C		7	25
8	Unsignalized			Unsignalized			Unsignalized		
9	65	E	**1	9	65	E	**1	9	65
10	24	C	*	10	24	C	*	10	24
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 4.6-4 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	*
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	

Table 4.6-4 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
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 (afternoon); s/veh = seconds per vehicle.

* possible queuing problems on an external movement

** occasional queuing problems on an internal movement

Table 4.6-5 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

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5 Discussion of Findings

Table 5-1 provides a summary of transportation impacts under each alternative. The WNY ROI can safely absorb projected future trip levels with minimal changes to LOS, assuming that local agencies are willing to retime the traffic signals. The critical time period is the a.m. 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. Next, the a.m. peak is the only time period in which the O Street entry gate (near 11th Street) produces occasional queue spillback to upstream signalized intersections (in a.m. peak existing conditions and in all a.m. peak future alternative scenarios). 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, the a.m. peak period exhibits more individual turning movements operating at LOS F than either the p.m. peak or the weekend peak.

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 a.m. peak, as mentioned in the prior paragraph). This intersection also operates at LOS E in the year 2022 existing conditions. However, in all a.m. 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).

In terms of passenger car traffic, the WNY ROI behaves more like a residential area than a CBD. The a.m. peak produces near-failing conditions at the I-695 on-ramp at 11th Street (i.e., most vehicles are leaving the area), while the p.m. peak produces 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 non-vehicle traffic (e.g., metro, bicycles, pedestrians), more people could be entering the ROI during the a.m. peak.

The Navy Museum would not measurably increase traffic congestion in the ROI, because the museum would not generate 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 E parcel development (e.g., residential, retail) that could generate substantially more trips.

For some intersections, the future alternative 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 significant number of new trips, this can affect the intersection-wide volume-weighted average by causing the “average vehicle” traversing the intersection to experience lower delays; this is despite an increase in delay on the lightly congested turning movement itself. Secondly, in this traffic impact analysis, the analyst optimized signal timings for each scenario (including existing condition scenarios); 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 “lucky” intersections may benefit from lower delays if the optimizer was generous to them, even under increased traffic demand levels.

Ultimately, there is always a demand level above which certain turning movements and intersections will have to operate at LOS F, regardless of the signal timing. None of the scenarios or alternatives in this study reach the demand levels that would cause overall intersections to operate at LOS F. However, each scenario and alternative causes multiple failing external turning movements (i.e., external movements have no upstream intersections within the physical model). This is a sign that the system-

wide signal timing is sacrificing a few external movements to prevent any intersections from reaching LOS F and to prevent queue spillback on the internal movements. Notably, Alternative 1B in the a.m. peak is the only scenario in which the signal timing was not able to prevent queue spillback on an internal movement, near the intersection of 11th Street at M Street. The impact of this failing turning movement on the ROI is mitigated by the fact that the intersections immediately adjacent to this one are uncongested.

Table 5-1 Summary of Transportation Impacts under each Alternative

No Action Alternative	Alternative 1A: Land Acquisition through Land Exchange with Reuse of the SEFC E Parcels with Relocated Navy Museum	Alternative 1B: 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
<ul style="list-style-type: none"> No significant impacts to traffic based on degraded LOS or serious sustained queue spillback within the ROI. 	<ul style="list-style-type: none"> All impacts described in the No Action Alternative plus a.m. peak: occasional new queue spillback problems caused by the intersection of M Street and 11th Street. 	<ul style="list-style-type: none"> All impacts described in Alternative 1A, plus p.m. peak: serious new queue spillback problems caused by the intersection of M Street and 11th Street. Therefore, there would be significant impacts on traffic. 	<ul style="list-style-type: none"> No significant impact to traffic based on degraded LOS or serious sustained queue spillback within the ROI. 	<ul style="list-style-type: none"> No significant impact to traffic based on degraded LOS or serious sustained queue spillback within the ROI. 	<ul style="list-style-type: none"> No significant impact to traffic based on degraded LOS or serious sustained queue spillback within the ROI. 	<ul style="list-style-type: none"> 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.
<ul style="list-style-type: none"> No failing intersections. Three failing turning movements (LOS F) during the a.m. peak. Three failing turning movements during the p.m. peak. 	<ul style="list-style-type: none"> One near-failing intersection (LOS E) during the a.m. peak. Four failing turning movements during the a.m. peak. Three failing turning movements during the p.m. peak. 	<ul style="list-style-type: none"> Some near-failing intersections during the a.m. and p.m. peaks. Four failing turning movements during the a.m. peak. Three failing turning movements during the p.m. peak. 	<ul style="list-style-type: none"> One near-failing intersection during the a.m. peak. Four failing turning movements during the a.m. peak. Three failing turning movements during the p.m. peak. 	<ul style="list-style-type: none"> No failing intersections. Three failing turning movements during the a.m. peak. Three failing turning movements during the p.m. peak. 	<ul style="list-style-type: none"> One near-failing intersection during the a.m. peak. Four failing turning movements during the a.m. peak. Three failing turning movements during the p.m. peak. 	<ul style="list-style-type: none"> No failing intersections. Three failing turning movements during the a.m. peak. Three failing turning movements during the p.m. peak under existing conditions.

1 **Table 5-1 Summary of Transportation Impacts under each Alternative**

No Action Alternative	Alternative 1A: Land Acquisition through Land Exchange with Reuse of the SEFC E Parcels with Relocated Navy Museum	Alternative 1B: 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
<ul style="list-style-type: none"> The a.m. peak generates near-failing conditions at the I-695 on-ramp at 11th Street (i.e., most vehicles are leaving the ROI), while the p.m. peak generates near-failing conditions at the I-695 off-ramp at 11th Street (i.e., most vehicles are entering the ROI). 	<ul style="list-style-type: none"> The a.m. peak generates near-failing conditions at the I-695 on-ramp at 11th Street, while the p.m. peak generates near-failing conditions at the I-695 off-ramp at 11th Street. 	<ul style="list-style-type: none"> The a.m. peak generates near-failing conditions at the I-695 on-ramp at 11th Street, while the p.m. peak generates near-failing conditions at the I-695 off-ramp at 11th Street. 	<ul style="list-style-type: none"> The a.m. peak generates near-failing conditions at the I-695 on-ramp at 11th Street, while the p.m. peak generates near-failing conditions at the I-695 off-ramp at 11th Street. 	<ul style="list-style-type: none"> Conditions at the I-695 on- and off- ramps would remain similar to existing conditions. 	<ul style="list-style-type: none"> The a.m. peak generates near-failing conditions at the I-695 on-ramp at 11th Street, while the p.m. peak generates near-failing conditions at the I-695 off-ramp at 11th Street. 	<ul style="list-style-type: none"> Traffic would increase based on ambient growth with private development.
<ul style="list-style-type: none"> O Street Gate would continue to operate under existing conditions. 	<ul style="list-style-type: none"> O Street Gate with occasional queue spillback. 	<ul style="list-style-type: none"> O Street Gate with serious queue spillback. 	<ul style="list-style-type: none"> O Street Gate with occasional queue spillback. 	<ul style="list-style-type: none"> O Street Gate with occasional queue spillback. 	<ul style="list-style-type: none"> O Street Gate with occasional queue spillback. 	<ul style="list-style-type: none"> O Street Gate would continue to operate under existing conditions.

1 **Table 5-1 Summary of Transportation Impacts under each Alternative**

No Action Alternative	Alternative 1A: Land Acquisition through Land Exchange with Reuse of the SEFC E Parcels with Relocated Navy Museum	Alternative 1B: 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
<ul style="list-style-type: none"> Developer would coordinate design plans with DDOT and other planning agencies to mitigate traffic impacts. 	<ul style="list-style-type: none"> Mitigation measures such as lane channelization adjustments would improve LOS. The Navy and the developer would consider improvements to the O Street Gate. 	<ul style="list-style-type: none"> Mitigation measures such as lane channelization adjustments would improve LOS. The Navy and the developer would consider improvements to the O Street Gate. 	<ul style="list-style-type: none"> Mitigation measures such as lane channelization adjustments would improve LOS. The Navy and the developer would consider improvements to the O Street Gate. 	<ul style="list-style-type: none"> No mitigation would be necessary. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> No mitigation would be necessary.

2 Notes: a.m. = ante meridiem (morning); DDOT = District Department of Transportation; I- = Interstate; LOS = level of service; p.m. = post meridiem (afternoon); ROI = region of
3 influence; SEFC = Southeast Federal Center; WNY = Washington Navy Yard.

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6 Recommendations for Proposed Alternatives

Recommendations to consider for potentially reducing traffic impacts are provided below. The Navy and the developer will continue to coordinate with DDOT. The analysis results assume that the developer would provide an entrance to the southeast corner property that would not increase congestion at the O Street gate near 11th Street. All analysis results assume no traffic impacts due to any gated operation near the SEFC E Parcels.

- **Mitigation 1:** According to the model, the rightmost southbound lane on 11th Street just upstream of the I-695 on-ramp may operate as a de-facto right-turn lane during the a.m. and weekend peak periods, when there tends to be excessive demand for exiting the ROI. In these scenarios the southbound right-turn demand exceeds the southbound through-movement demand, but the rightmost lane is a shared through-plus right-turn lane. According to the model, if the local agency can modify lane channelization such that only right-turners can use the rightmost lane, then the average delay at this intersection could decrease significantly. The local agency could accomplish this change either by restriping the roadway or by installing a dynamic message sign (e.g., Right Turn Only) above the lane in question.
- **Mitigation 2 (similar to Mitigation 1):** The leftmost westbound lane on M Street just upstream of Isaac Hull may operate as a de-facto left-turn lane during scenarios where the E parcel attracts a significant number of trips with drivers wishing to park inside the WNY campus. Such scenarios could include no action (leading to private Sector E parcel development), Alternative 1B, and Alternative 2B during the a.m. peak period. Local agencies could thus consider a dynamic message sign that displays “Left Turn Only” during the a.m. 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.

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8 List of Preparers

This Traffic Study was prepared collaboratively between the Navy and contractor preparers.

This EIS was prepared collaboratively between the Navy and contractor preparers.

<i>Name/Organization</i>	<i>Resource Area/Responsibilities</i>
U.S. Department of the Navy	
Nik Tompkins-Flagg (NAVFAC Washington)	EIS Project Manager
Nicole Hernandez (NAVFAC Washington)	Environmental Compliance Product Line Coordinator
Natasha Behbahany (NAVFAC Washington)	Senior Community Planner
Dorothy Peterson (NAVFAC Headquarters)	Environmental Planning Team Lead

<i>Name/Organization</i>	<i>Experience</i>	<i>Resource Area/Responsibilities</i>	<i>Years of Experience</i>
Contractor – Cardno – Leidos, LLC			
Kathleen Riek, AICP (Cardno)	B.S. Biology	EIS Project Manager Senior Review, Quality Assurance/ Quality Control	32
Peggy Farrell, PMP, QEP, CHMM (Leidos)	M.S. Natural Sciences and Environmental Studies B.A. Biology and Environmental Studies	EIS Deputy Project Manager Senior Review, Quality Assurance/ Quality Control	42
Cristina Ailes (Cardno)	B.S. Ecology and Environmental Science B.A. International Studies	Project Coordinator Alternatives Development, Analyst Coordination, Public Involvement	15
Britta Ayers, AICP, PMP (Cardno)	Master of Urban Planning B.A. Architecture	Land Use/Zoning	26
Heather Gordon (Leidos)	M.S. Geography B.S. Environmental Studies and Planning	GIS	22
David Hale, Ph.D., PMP (Leidos)	Ph.D., M.E., Civil Engineering	Transportation, Traffic	27
Kathy Hall (Cardno)	B.A. Earth and Environmental Science	Senior Review – Socioeconomics, Environmental Justice	24
Heather Stepp (Leidos)	B.S. Environmental Engineering Technology	Editorial Reviewer	26
Tara Utsey (Leidos)	B.A. Liberal Arts	Editing	29
Jen Wallin (Leidos)	M.S. Environmental Toxicology B.S. Biology	Editorial Review	22
Carmen Ward, PE, PMP (Leidos)	M.S. Environmental Engineering B.S. Chemical Engineering	Senior Reviewer – Air Quality and Traffic	30

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Attachment A

DDOT Comprehensive Traffic Review Scoping Form

**District Department of Transportation (DDOT)
Comprehensive Transportation Review (CTR) Scoping Form**



The purpose of the Comprehensive Transportation Review (CTR) study is to evaluate potential impacts to the transportation network that can be expected to result from an approved action by the Zoning Commission (ZC), Board of Zoning Adjustment (BZA), Public Space Committee (PSC), a Federal or District agency, or an operational change to the transportation network. The Scoping Form accompanies the *Guidance for Comprehensive Transportation Review* and provides the Applicant an opportunity to propose a scope of work to evaluate the potential transportation impacts of the project.

Directions: The CTR Scoping Form contains study elements that an Applicant is expected to complete in order to determine the scope of the analysis. An Applicant should fill out this *Scoping Form* with a proposed scope of analysis commensurate with the requested action and submit to DDOT for review and concurrence. Accordingly, not all elements and figures identified in the *Scoping Form* are required for every action, and there may be situations where additional analyses and figures may be necessary. Once a completed Scoping Form is submitted, DDOT will provide feedback on the initial parameters of an appropriate analysis scope. DDOT's turnaround times are four (4) weeks for CTRs with a Traffic Impact Analysis (TIA) and three (3) weeks for all other lower tier studies. After the *Scoping Form* has been finalized and agreed to by DDOT, the Applicant is required to expand upon the elements outlined in this Form within the study.

Scoping Information
Date(s) Scoping Form Submitted to DDOT: 5/2/2022
DDOT Case Manager: Kimberly Vacca
Date(s) Scoping Form Comments Returned to Applicant: 6/22/22
Date Scoping Form Finalized:

Project Overview	Proposed Development Program
Project Name: Proposed Land Acquisition for the Washington Navy Yard	Use(s)
Case Type & No. (ZC, BZA, PSC, etc.):	Residential (dwelling units):
ANC/SMD:	Retail (square feet):
Applicant/Developer Name: Naval Facilities Engineering Systems Command	Office (square feet):
Transportation Consultant and Contact Info: david.k.hale@leidos.com	Hotel (rooms):
Land Use Counsel and Contact Info:	Other:
Site Street Address: 1314 Harwood Drive SE, Washington, DC 20374	# of Vehicle Parking Spaces:
Site Square & Block:	# of Carshare spaces:
Current Zoning and/or Overlay District:	# of Electric Vehicle Stations:
Estimated Date of Hearing:	# of Bicycle Parking Spaces (long- and short-term)

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Small Area Plan (if applicable):	Long-term:
Livability Study (if applicable):	Short-term:
Within ½ Mile of Metrorail or ¼ mile of Streetcar/Circulator/Priority Bus?: Yes	Loading Berths/Spaces:

Documents to be Submitted to DDOT: *Any action requiring a CTR or some other evaluation of on-site or off-site transportation facilities must submit one of the following documents to DDOT. It must be appropriately scoped for the specific action proposed and document all relevant site operations and transportation analyses.*

- ☐ **CTR Study** (100 or person total person trips, or 25 or more peak hour vehicle trips in peak direction, or as deemed necessary by DDOT)
- ☐ **Transportation Statement** (limited scope based on specifics of project or if Low Impact Development Exemption from CTR and TIA is requested)
- ☐ **Standalone TIA** (project proposes a change to roadway capacity, operations, or directionality, has a site access challenge, or as deemed necessary by DDOT)
- ☐ **Other, specify:** _____
- ☐ Include one (1) hard copy of final report, PDF of report w/appendices, traffic analysis files, and traffic counts in DDOT-required spreadsheet format (total size of all digital files under 15 MB, if possible)

Existing Site and Description of Action: *Describe the type(s) of regulatory approval(s) being requested and any background information on the project relevant to the requested action such as the existing uses, amount of vehicle parking, and other notable proposed changes on-site.*

1.1 Introduction

The Navy is currently preparing an Environmental Impact Statement to obtain approximately six acres of land on the Southeast Federal Center (SEFC), Washington, D.C. to improve the overall Anti-Terrorism/Force Protection (AT/FP) posture of the Washington Navy Yard (WNY). Obtaining the SEFC E Parcels would improve the WNY AT/FP posture by reducing the encroachment threat posed by existing development rights on the SEFC E Parcels, protecting mission-critical activities conducted at the WNY from encroachment, and enhancing the overall safety of personnel, facilities, and infrastructure at the WNY. Obtaining the SEFC E Parcels would additionally permit increased physical security and antiterrorism mitigation measures to protect mission-critical activities from visual surveillance and acoustic and electronic eavesdropping. Encroachment at the WNY is acute because of proposed incompatible private development currently scheduled and approved for construction in 2023 on the SEFC E Parcels, which are adjacent to the northwest perimeter of the WNY. After obtaining ownership of the SEFC E Parcels, the Navy proposes three alternative uses of the acquired property that support the Navy's AT/FP requirement and military mission.

The Navy has identified two preliminary action alternatives, each with three sub-alternatives that meet the purpose of and need for the Proposed Action, as well as a no action alternative. Under Alternative 1 (Land Acquisition through Land Exchange), the Navy would exchange certain underutilized properties within the WNY Southeast Corner, along with other considerations as necessary with the developer, to obtain the development rights and ownership of SEFC E Parcels. The GSA would then transfer ownership of the parcels to the Navy. In exchange for the development rights, the Navy would transfer and/or lease underutilized assets at the WNY Southeast Corner to the developer, along with an exchange option for two parcels on Joint Base Anacostia-Bolling (JBAB). After the land exchange, the developer would construct on the WNY Southeast Corner, mixed-use (residential, office, commercial, retail) buildings on transferred property and commercial/retail on leased property. The proposed Navy reuse of the SEFC E Parcels that would be evaluated includes the following sub-alternatives: a) construct a new National Museum of the United States Navy; b) incorporate the parcels within the WNY fence line and construct Navy administrative facilities; or c) incorporate the parcels within the WNY fence line but leave parcels in their current underdeveloped state, with no foreseeable development planned. Under Alternative 2 (Direct Land Acquisition), the Navy would purchase the SEFC E Parcel development rights outright from the developer and obtain the SEFC E Parcels from GSA through a federal-to-federal transfer. No land exchange would occur. The proposed Navy reuse of the SEFC E Parcels to be evaluated would be the same three sub-alternatives discussed under Alternative 1. Under the No Action Alternative, the Proposed Action would not occur, and the developer would exercise its development rights to construct several multi-story buildings, up to approximately 110 feet in height, on the SEFC E Parcels. As a result, mission-critical activities would operate inconsistently with AT/FP requirements, and the safety of personnel, facilities, and infrastructure on the WNY adjacent to the SEFC E Parcels would be degraded, thereby threatening national security.

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A traffic study was prepared and approved by DDOT in 2017 associated with the Navy acquiring the SEFC parcels through direct purchase. Congress did not authorize this action and the Environmental Assessment was not finalized. The traffic study evaluated the redevelopment of the SEFC parcels for use as the Navy Museum.

Section 1: SITE DESIGN

DDOT reviews the site plan to evaluate consistency with DDOT's standards, policies, and approach to access as documented in the most recent Design and Engineering Manual (DEM). If the proposal for use of public space is found to be inconsistent with the agency approach, DDOT will note this regardless of its relevance to the action. It is DDOT's position that issues regarding public space be addressed at the earliest possible opportunity to ensure the highest quality project design and to minimize project delays and the need to re-design a site in the future.

CATEGORY & GUIDELINES	CONSULTANT PROPOSAL	DDOT COMMENTS
<p>Site Access</p> <p>Show site access points for all modes. Include proposed curb cut locations, curb cuts to be closed, access controls (e.g., right-in/out, signalized), sight distances and sight triangles from access points and new intersections, driveway widths and spacing, on- and off-site parking locations, inter-parcel connections, public/private status of driveways, alleys, and streets, and whether easements, dedications, or closures are proposed.</p> <p><i>Access must be located off an adjacent existing or "paper" alley, otherwise off the lower volume street. Note any deviations from curb cut policies (DEM 31.5) w/justification and if Conceptual Approval by the Public Space Committee (PSC) has/is being sought. Subtitle I § 600-603 of ZR16 further restricts where curb cuts can be located.</i></p> <p><i>DDOT will not support curb cut design relief unless there is a clear hardship preventing a project from meeting all DDOT standards and other alternatives have been explored.</i></p> <p><i>All proposed private streets connecting to a public street must be built to DDOT standards and have a public access easement. Design of driveways and drive aisles on private property must comply with Subtitle C § 711 of ZR16.</i></p>	<p>Leidos on behalf of the Navy proposes to conduct a traffic analysis of existing and future traffic conditions and traffic impacts within the region of influence. Traffic will be impacted by the proposed development at the SEFC E Parcels and the WNY Southeast Corner under Alternative 1 and the SEFC E Parcels under Alternative 2. The region of influence is defined as a half-mile radius containing 22 intersections (Figure 1).</p> <p>The objective of the traffic study is to assess traffic impacts in the region of influence, and to recommend traffic-related mitigation, as needed for the NEPA document. The maximum density site development and access analysis will be used for planning purposes. The developer would phase construction over 10 years and be required to comply with zoning ordinances and approval processes. Maximum development may not be allowable. The developer would submit detailed construction plans and obtain approvals. For the Navy's potential development, a 10-year funding, design, and construction timeframe was also assumed.</p> <p>If a site access analysis is needed, the Navy and/or the developer would be responsible.</p> <p><input checked="" type="checkbox"/> Scoping Graphic: Project Location Map</p> <p><input type="checkbox"/> Scoping Graphic: Site Circulation Plan</p> <p><input type="checkbox"/> Scoping Graphic: Plat for Site's Square and Lot from Office of the Surveyor (if official plat not available, provide plans from SURDOCs)</p>	<p>DDOT 5/16/22: Vehicular access to the WNY corner development should be located on O Street SE with no curb cuts on 11th Street SE.</p> <p>Navy 6/10/22: Navy acknowledges this comment if Alternative 1 is selected. Figure 1 is provided in Attachment 1.</p>
<p>Loading</p> <p>Discuss and show the quantity and sizes of loading berths/delivery spaces, trash storage locations, on- and off-site loading locations, turnaround design, nearby commercial loading zones, and anticipated demand, operations, and routing of delivery and trash vehicles. Identify the sizes of trucks anticipated to serve the site and design vehicles to be used in truck turning diagrams. Provide truck turning diagrams in the body of the report not the appendix.</p> <p><i>DDOT requires head-in and head-out truck movements through public space (DEM 31.5) and that direct internal pedestrian connections be provided between retail bays and loading facilities. Note any proposed deviations or requested relief from ZR16 or DDOT standards with justification. If any</i></p>	<p>The design details have not been prepared by either the Navy and/or the developer. The EIS will evaluate conceptual plans. This will be followed by detailed designs once the NEPA process is complete, and an alternative is selected.</p> <p><input type="checkbox"/> Scoping Graphic: Location of loading area w/ internal building routing</p> <p><input type="checkbox"/> Scoping Graphic: Truck Turning Diagrams (to/from the site, alley, truck routes)</p>	<p>DDOT 5/16/22: DDOT concurs.</p>

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<p><i>relief is being sought then a Loading Management Plan (LMP) is required. A template LMP is provided in Appendix E.</i></p>		
<p>Vehicle Parking</p> <p>Identify all off-street parking locations (on- and off-site) and justify the amount of on-site vehicle parking, including a comparison to the number of spaces required by ZR16 and any previous approvals. Provide parking calculations and parking ratios by land use, including any eligible ZR16 vehicle parking reductions (i.e., within ¼ mile of Priority Bus Route, within ½ mile of Metrorail Station, providing carshare spaces, located within a D zone, etc.).</p> <p><i>Review the DDOT Preferred Parking Rates (Table 2). If the total parking provision proposed exceeds the amount calculated using ratios in that table then the number of spaces should be reduced or substantial TDM / non-auto improvements be provided. If parking provision is significantly out of line with appropriate parking ratios, one way or the other, then mode split and trip generations estimates will be adjusted.</i></p> <p><i>Confirm whether ZR16 TDM Mitigations will be required, per Subtitle C § 707.3, for providing more than double the amount of required vehicle parking. Coordinate with the Zoning Administrator as early in the process as possible for an official determination.</i></p> <p><i>A TDM Plan is required for BZA parking reduction cases, per Subtitle C § 703.4. If relief is being requested from 5 or more spaces, then a Parking Occupancy Study is required (see Multi-Modal section).</i></p>	<p>No Action Alternative – 581 parking spaces to be provided by the developer.</p> <p>Alternative 1 – Existing parking garages will be maintained and improved. Two floors would be added to the South Garage (existing Building 405) with shared use between the Navy and/or the developer. The developer would rehabilitate 342 spaces in the North Garage (existing Building 386), the parking garage would be maintained within the Navy fence line. The Navy Museum (sub-alternative A) would have 400 to 500 parking spaces in Building 202 and the administrative facility (sub-alternative B) would have approximately 80 parking spaces. There would be no parking associated with sub-alternative C.</p> <p>Alternative 2 – Only Navy development would occur. The proposed parking for the sub-alternatives would be the same as described above, with the exception of the 405 and 386 parking garages. These two parking garages would remain in their current state within the Navy fence line.</p> <p><input type="checkbox"/> Scoping Table: Parking Calculations with Comparison to ZR16 and DDOT's Preferred Vehicle Parking (Table 2)</p> <p><input type="checkbox"/> Scoping Graphic: Off-Street Parking Locations (both on- and off-site)</p>	<p>DDOT 5/16/22: Vehicle parking should be consistent with DDOT's Preferred Maximum Vehicle Parking Rates in the 2022 <i>Guidance for Comprehensive Transportation Review</i>. If possible, reformat garage parking spaces to be used for long-term bicycle parking to reduce the parking ratio. Look at wrapping the parking garage with a more active use to activate the street level adjacent to the garage.</p> <p>Navy 6/10/22: Navy acknowledges this comment and will consider these suggestions in the design contract, if Alternative 1 is selected.</p>
<p>Bicycle Parking</p> <p>Identify the locations of proposed bicycle parking and justify the amount of long- and short-term spaces proposed. Provide a calculation of the number of spaces required by ZR16.</p> <p><i>Long-term bicycle parking spaces must be easily accessible from building lobby or located in the parking garage level closest to the ground floor. Lockers and showers must be included with non-residential long-term bicycle storage rooms, per Subtitle C § 806. Provide calculations for required lockers and showers.</i></p>	<p>The design details have not been prepared by either the Navy and/or the developer. The EIS will evaluate conceptual plans. This will be followed by detailed designs once the NEPA process is complete, and an alternative is selected.</p> <p><input type="checkbox"/> Scoping Graphic: Locations of internal bicycle parking spaces, routing to these spaces, and related support facilities including locker rooms, showers, storage areas, and service repair rooms</p>	<p>DDOT 5/16/22: DDOT concurs. Ensure short- and long-term bicycle parking spaces are compliant with the 2016 Zoning Regulations and DDOT's <i>Bike Parking Guide</i>.</p> <p>Navy 6/10/22: Navy acknowledges this comment and will incorporate it in the design contract, as applicable.</p>

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<p><i>Short-term bicycle parking must be accommodated by installing inverted U-racks along the perimeter of the site in the 'furniture zone' of public space, near the site entrance(s).</i></p>		
<p>Streetscape and Public Realm</p> <p>Provide a conceptual layout of the streetscape and public realm including at minimum: curb cuts, vaults, sidewalk widths, street trees, grade changes, building projections, short-term bicycle parking, and any existing bus stops. Also provide the permit tracking numbers and PSC hearing date, if known, for any approved public space designs.</p> <p><i>DDOT expects new developments to rehabilitate the streetscape between the curb and property line and meet all public space design standards. Streetscape must meet ADA requirements and ensure nothing impedes accessible curb access or pedestrian circulation.</i></p> <p><i>Note any non-compliant public space elements requiring a DCRA code modification or PSC approval.</i></p> <p><i>A summary of public space best practices is provided in Section 1.5. DDOT standards are documented in the DEM, Public Realm Design Manual, and corridor Streetscape Guidelines (if applicable).</i></p>	<p>The design details have not been prepared by either the Navy and/or the developer. The EIS will evaluate conceptual plans. This will be followed by detailed designs once the NEPA process is complete, and an alternative is selected.</p> <p><input type="checkbox"/> Scoping Graphic: Preliminary Public Space Concept</p>	<p>DDOT 5/16/22:</p> <ul style="list-style-type: none"> • If Alternative 1 is chosen, DDOT will request bus stop enhancements along 11th Street SE. • 24-hour public access to the Anacostia Riverwalk Trail shall be maintained. • Restore the Anacostia Riverwalk Trail to a state of good repair in accordance with ADA, ABAAS, and PROWAG guidance. • Ensure private/internal sidewalks and roadways are built to DDOT standards. <p>Navy 6/10/22: Navy acknowledges this comment and will incorporate it in the design contract, as applicable.</p>
<p>Sustainable Transportation Elements</p> <p>Identify all sustainable transportation elements, such as electric vehicle (EV) charging stations and carshare spaces proposed to be included in the project. Electrical conduit should be installed in parking garage so that additional EV stations can be provided later.</p> <p><i>DDOT recommends 1 per 50 vehicle spaces be served by an EV station. DDOT encourages providing car share spaces on-site to reduce the ZR16 parking requirement and support non-car ownership lifestyles.</i></p>	<p>The design details have not been prepared by either the Navy and/or the developer. The EIS will evaluate conceptual plans. This will be followed by detailed designs once the NEPA process is complete, and an alternative is selected.</p>	<p>DDOT 5/16/22: DDOT concurs and requests that EV stations be documented in the TDM plan.</p> <p>Navy 6/10/22: Navy acknowledges this comment and will incorporate it in the design contract, as applicable.</p>
<p>Heritage, Special, and Street Trees</p> <p>Heritage Trees are defined as having a circumference of 100 inches or more and are typically located on private property. They are protected by the District's Tree Canopy Protection Amendment Act of 2016 and must be preserved if deemed non-hazardous by Urban Forestry Division (UFD). Special Trees are between 44 inches and 99.99 inches in circumference and may be removed with a permit.</p> <p><i>Note whether there are existing Heritage Trees on-site or in adjacent public space. The presence of Heritage Trees will impact site design since they may not be cut down. Work w/the UFD Ward Arborist to determine if there are Heritage or Special Trees on-site that must be preserved and if Tree Preservation or Relocation Plans are required.</i></p> <p><i>Conduct an inventory of existing and missing street trees within a 3-block radius of the site (design standards are in DEM 37.5). Identify any opportunities for UFD or the Applicant</i></p>	<p>The design details have not been prepared by either the Navy and/or the developer. The EIS will evaluate conceptual plans. This will be followed by detailed designs once the NEPA process is complete, and an alternative is selected.</p> <p><input type="checkbox"/> Scoping Graphic: Street Tree Inventory Study Area</p>	<p>DDOT 5/16/22: Please reach out to DDOT's Urban Forestry Division Ward 6 Arborist, Steve McKindley-Ward (steve.mckindley-ward@dc.gov) and Jack Chapman, Supervisory Forester Wards 2 & 6, jack.chapman@dc.gov</p> <p>Navy 6/10/22: Concur.</p>

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(as part of the mitigations package) to install missing treeboxes and street trees.

Section 2: TRAVEL ASSUMPTIONS

CATEGORY & GUIDELINES	CONSULTANT PROPOSAL	DDOT COMMENTS
<p>Mode Split</p> <p>Provide mode split assumptions with sources and justification. Sources of data could include the most recent <i>Census Transportation Planning Products (CTPP)</i> the 2005 <i>WMATA Development-Related Ridership Survey</i>, or previous planning studies and CTRs. Note that the walking mode share will account for internal trip synergies for mixed use developments.</p> <p><i>Adjustments to mode split assumptions may be made, as appropriate, if the number of vehicle parking spaces proposed is significantly lower or higher than expected for the context of the neighborhood.</i></p> <p><i>The agreed upon mode split assumptions may not be revised between scoping and CTR submission without DDOT concurrence.</i></p>	<p>Leidos proposes an assumption of 85 percent of the trips generated by planned development (i.e., Navy Museum, Navy Administrative Facilities, WNY Southeast Corner commercial and residential space) being passenger car trips, along with 15 percent of these same newly generated trips choosing alternative modes (e.g., pedestrian, bicycle, Metro, bus, ride share, van pools/shuttles). For the analysis of existing traffic conditions, Leidos will enter traffic counts from March 2022 into four Synchro datasets provided by DDOT for the AM peak, PM peak, midday peak, and weekend peak periods, respectively. This 22-intersection network includes all surrounding intersections that are expected to affect traffic flows in the region of influence (Figure 1). For the analysis of future traffic conditions, Leidos will apply a traffic growth factor from appropriate data sources specified elsewhere in the scoping form. For the action (build) scenario, Leidos will further estimate generated trips (for the Navy Museum and Administrative Facility in the SEFC E Parcels, and the residential/commercial mixed use in the WNY Southeast Corner) using a methodology specified in the Trip Generation section of the scoping form.</p> <p><input type="checkbox"/> Scoping Table: Mode Split Assumptions</p>	<p>DDOT 5/16/22: Please confirm how the mode split percentages were identified. Is this from Census data? WMATA survey data? Surveys of existing Navy staff?</p> <p>Navy 6/10/22: Attached table (Attachment 2) shows the mode split. After discussion on 6/2/22, revised. Percent use of privately-owned vehicles:</p> <ul style="list-style-type: none"> -Navy office (70%) derived from a combination of sources: employee surveys conducted in 2020 (limited survey size); parking ratio; DC Health Matters, 2022 Demographics, Employment; The Washington Post; and U.S. Census data. -Museum visitor percentages (35%) from 2017 EA which used U.S. Census, the WNY TMP, and survey results provided by the Smithsonian Institute. <p>Southeast Corner:</p> <ul style="list-style-type: none"> -Residential (85%) -Office (50%) <p>Sources: U.S. Census - American Communities Survey and Fact Sheet; DC Health Matters, Demographics, Employment; The Washington Post, and DCist.</p> <p>DDOT 6/22/22: While the mode split for residential at the SE corner is high, DDOT approves the proposed mode split percentages as these will be refined during</p>

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		<p>the PUD or Design Review processes with the Zoning Commission.</p> <p>Navy 7/19/22: Further discussions with the developer resulted in clarification of proposed development in the WNY Southeast Corner in terms of square feet of development, number of dwelling units, mode split, and classification of land use codes. The Excel spreadsheet has been revised and attached to the CTR.</p> <p>DDOT 7/20/22: DDOT concurs with the new mode split assumptions.</p>
<p>Trip Generation</p> <p>Provide site-generated person trip generation estimates, utilizing the most recent version of ITE <i>Trip Generation Manual</i> or another agreed upon methodology such as manual doorway or driveway counts at similar facilities. Estimates must be provided by mode, type of trip, land use, and development phase during weekday AM and PM commuter peaks, Saturday mid-day peak, and daily totals. CTR must also include existing site trip generation based on observed counts. Modes include transit, bicycle, walk, and automobile.</p> <p><i>DDOT TripsDC tool will be used to determine trip generation estimates for residential-over-retail projects (see Section 2.2.4 for parameters).</i></p> <p><i>Auto occupancy rates by travel purpose published in the 2017 National Household Travel Survey should be used when calculating person trips based on suburban vehicle trip data in Trip Generation Manual (see Table 3).</i></p> <p><i>Adjustments to trip generation may be made, as appropriate, if the number of vehicle parking spaces proposed is significantly lower or higher than expected for the context of the neighborhood.</i></p> <p><i>Pass-by rates in the District are minimal and should only apply to major retail-dominant destinations, grocery stores, and gas stations. An adjusted pass-by/diverted trips methodology should be developed if development is not located on a road classified as arterial or higher.</i></p> <p><i>The agreed upon trip generation methodology may not be revised between scoping and CTR submission without DDOT concurrence. Consult the DDOT Case Manager if site plan, development program, land uses, or density changes significantly.</i></p>	<p>Leidos proposes to obtain museum generated trips from the 2017 Draft EA, Table 4-15, because this resulted in a more conservative estimate (i.e., a larger number of generated trips) than the ITE Trip Generation procedure. Leidos further proposes to obtain generated trips for all other land uses from the ITE Trip Generation procedure, regardless of whether the land use is by the Navy and/or a private developer. Leidos has also procured the Cubic-Trafficware TripGen software to support this effort.</p> <p><input type="checkbox"/> Scoping Table: Multi-Modal Trip Gen Summary (w/mode split and applicable reductions, as appropriate)</p>	<p>DDOT 5/16/22: DDOT concurs with the museum methodology. Please elaborate on trip generation methodology and land use assumptions for the WNY Southeast Corner.</p> <p>Navy 6/10/22: Attached table shows the mode split (Attachment 2). After discussion on 6/2/22, revised. Percent use of privately-owned vehicles.</p> <p>Southeast Corner:</p> <ul style="list-style-type: none"> -Residential (85%) -Office (50%) <p>Sources: U.S. Census - American Communities Survey and Fact Sheet; DC Health Matters, Demographics, Employment; The Washington Post, and DCist.</p> <p>DDOT 6/22/22: Please clarify how the number of units and commercial square footage were determined for the SE corner development proposal (see Table 1 of the attachments).</p> <p>Navy 6/28/22: the Navy used a maximum development for the purposes of NEPA. The assumptions are shown in the attached table.</p> <p>Navy 7/19/2022: Discussions with the developer for the SE corner further refined the proposed development assumptions. Table 1 has been revised.</p> <p>DDOT 7/20/22: DDOT concurs.</p>

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Section 3: MULTI-MODAL NETWORK EVALUATION

A CTR study is required if the project generates at least 100 peak hour person trips or 25 vehicle trips in the peak direction (highest of inbound or outbound) in any study period. Existing site traffic, pass-by, TDM, internal capture or other reductions may not be taken in the calculation to determine if the project meets these thresholds. However, they may be taken in the TIA, as appropriate, if a study is triggered. Analyses in the Multi-Modal Network Evaluation section are required in all CTRs, unless otherwise specified. A Transportation Statement may only require some of the following sections depending on the specifics of the project and zoning action.

The requirement for a CTR may be waived if site is within ½ mile from Metrorail or ¼ mile from Priority Transit, the total vehicle parking supply below level expected within ¼ mile of Metrorail Station (see Table 2), maximum 100 parking spaces, an Enhanced TDM Plan is implemented, site access and loading design are acceptable, there is a complete pedestrian network in the vicinity of the site and meets all ZR16 bike parking and locker/shower requirements. Additional criteria may be found in the Low Impact Development Exemption section of *Guidance for CTR*.

CATEGORY & GUIDELINES	CONSULTANT PROPOSAL	DDOT COMMENTS
<p>Strategic Planning Elements</p> <p>Identify relevant planning efforts and demonstrate how the proposed action is consistent with District-wide planning documents, as well as localized studies. Note in scoping form any recommendations from these documents relevant to the development proposal.</p> <p>The evaluation will consider at least the following high level/District-wide documents:</p> <ul style="list-style-type: none"> • MoveDC and its relevant modal elements • DDOT Livability Study (relevant to the project) • OP Small Area Plans (relevant to the project) • DC Highway Plan (shown on official plat) • District of Columbia Comprehensive Plan • Vision Zero Action Plan • Capital Bikeshare Development Plan • Washington Metropolitan Area Transit Authority's (WMATA) Metrorail and Metrobus Plans • DDOT Corridor studies (e.g., Transit Development Plan, Streetscape Design Plans and Guidelines) <p><i>Details on additional relevant plans and studies may be provided by the DDOT Case Manager.</i></p>	<p>The Navy's EIS discusses the consistency of the Proposed Action with the following:</p> <ul style="list-style-type: none"> • Comprehensive Plan for the National Capital • The Yards Master Plan • DC Zoning Regulations • WNY Master Plan, and • Antiterrorism Standards and Physical Security Program. <p>The other plans listed will be reviewed and concepts incorporated into the traffic study and discuss how the Proposed Action is consistent with the plans. The design details have not been prepared by either the Navy and/or the developer. The EIS will evaluate conceptual plans. This will be followed by detailed designs once the NEPA process is complete, and an alternative is selected.</p>	<p>DDOT 5/16/22: Please also coordinate with the 11th Street Bridge Park project team.</p> <p>Navy 6/10/22: Navy acknowledges this comment if Alternative 1 is selected.</p>
<p>Pedestrian Network</p> <p>Evaluate the condition of the existing pedestrian network and forecast the project's impact. Evaluation must include, at a minimum, critical walking routes, sidewalk widths, network completeness, whether facilities meet DDOT and ADA standards, and whether pedestrian signal timings are adequate (within vehicle study area).</p> <p><i>Study area will include, at a minimum, all roadway segments and multi-use trails within a ½ mile radius from the site, with a focus on connectivity to Metrorail, transit stops, schools, and major activity centers.</i></p>	<p>Existing networks will be discussed in the traffic study. Separation of vehicular and pedestrian traffic will be ensured with traffic control devices. Pedestrian access will be included in the detailed designs after NEPA has concluded but if the SEFC E Parcels and the WNY Southeast Corner are open to the public (Navy Museum option), pedestrian and bicycle access safety will be a top priority. The Navy will have to continue consultation with DDOT if/when design for the museum is initiated.</p> <p><input type="checkbox"/> Scoping Graphic: Pedestrian Study Area w/Walking Routes to Transit, Schools, Activity Centers</p>	<p>DDOT 5/16/22: DDOT concurs.</p>

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<p>Bicycle Network</p> <p>Evaluate the condition of the existing bicycle network and forecast the project's impact, including to Capital Bikeshare (CaBi). Evaluation must include, at a minimum, bicycle network completeness, types of facilities, and adequacy of CaBi locations and availability. Bikeshare station demand data can be obtained from the <i>CaBi Tracker</i> website.</p> <p><i>Study area will include, at a minimum, all roadway segments and multi-use trails within a ½ mile radius from the site, with a focus on connectivity to Metrorail, transit stops, schools, major activity centers, and other bicycle trails or facilities.</i></p> <p><i>Note where bike lanes conflict with access to the site or on-street loading movements associated with the project.</i></p> <p><i>If a CaBi station is currently located along the site frontage, the Applicant must assume the station will stay in place after the development has been constructed and must be designed in the public space plans. If it is not physically possible to stay in place, then DDOT expects the Applicant to demonstrate this hardship, propose a viable alternative location, and fund the station relocation. The minimum size of a new CaBi station is 19 docks with 12 bikes.</i></p>	<p>Existing networks will be discussed in the traffic study. Bicycle access will be included in the detailed designs after NEPA has concluded but if the SEFC E Parcels and the WNY Southeast Corner are open to the public (Navy Museum option), pedestrian and bicycle access safety will be a top priority. The Navy will have to continue consultation with DDOT if/when design for the museum is initiated.</p> <p><input type="checkbox"/> Scoping Graphic: Bicycle Study Area w/Bicycling Routes to Transit, Schools, Activity Centers</p>	<p>DDOT 5/16/22: DDOT concurs.</p>
<p>Transit Network</p> <p>Evaluate, at a minimum, existing transit stop locations, adjacent bus routes and Metro headways, planned transit improvements, and an assessment of existing transit stop conditions (e.g., ADA compliance, bus shelters, benches, wayfinding, etc.). For Metrorail stations, refer to the 2009 <i>WMATA Station Site and Access Planning Manual</i>, as well as various station capacity studies.</p> <p><i>Study area is 1.0 mile for Metrorail stations and ½ mile for Streetcar, Circulator, and WMATA buses.</i></p> <p><i>All existing bus stops and shelters must be accommodated during construction, assumed to be returned to the original location after construction, and designed into the public space plans. If a bus stop and/or shelter must be moved then the Applicant will fund the relocation and obtain approval from DDOT and WMATA for the new location. Applicant must fund the electrification of all new or relocated shelters.</i></p>	<p>The study will describe the existing transit network. The project area is 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 Ave SE and M Street SE. Metro buses also serve the corridors.</p> <p><input type="checkbox"/> Scoping Graphic: Transit Study Area with Adjacent Routes and Stations</p> <p><input type="checkbox"/> Scoping Graphic: Screenshots from DDOT transit maps showing where the site falls within buffers from Metrorail and Priority Transit</p>	<p>DDOT 5/16/22: DDOT concurs.</p>
<p>Safety Analysis</p> <p>Qualitatively evaluate safety conditions at intersections and along blocks within the vehicle study area.</p> <p><i>Perform a review of DDOT Vision Action Plan. Note whether any study intersections have been identified by DDOT as high crash locations, if any safety studies have been previously conducted, and discuss the recommendations. Depending on the results of the TIA, DDOT may require improvements to nearby intersections previously identified as having known safety issues.</i></p>	<p>Existing safety will be qualitatively discussed in the traffic study. Detailed designs by the Navy and/or the developer will not be prepared until NEPA is complete and if the preferred alternative includes the land exchange. This analysis would be conducted after NEPA is complete and once design plans have been prepared.</p>	<p>DDOT 5/16/22: DDOT concurs.</p>

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<p>Curbside Management</p> <p>Propose a curbside management plan that is consistent with current DDOT policies and practices. The curbside management plan must delineate existing and proposed on-street parking designations/restrictions, including but not limited to pick-up/drop-off zones, commercial loading zones, multi-space meters, RPP, and net change in number of on-street spaces as a result of the proposal.</p> <p><i>Note that the preliminary curbside management plan will not be approved by DDOT during the zoning process. Applicant must submit a more detailed signage and marking plan via TOPS for formal review and approval by DDOT-PGTD during public space permitting. DDOT expects the Applicant to fund the installation of multi-space meters on blocks where meters are required.</i></p>	<p>There will be no on-street parking proposed under any sub-alternative for Navy reuse of the SEFC E Parcels. Under the Land Exchange alternative, the developer may propose on-street parking in the future. The developer would consult with DDOT during development of designs.</p> <p><input type="checkbox"/> Scoping Graphic: Existing Curbside Designations (min. 2 block radius of site)</p>	<p>DDOT 5/16/22: DDOT concurs.</p>
<p>Pick-Up and Drop-Off Plan</p> <p>This plan is required for all schools and daycares with 20 or more students. It may also be required for churches, hotels, or any other use expected to have significant pick-up and drop-off operations, as necessary. The plan will identify pick-up and drop-off locations and demonstrate adequate circulation so that the flow of bicycles and vehicles is not impeded, and queuing does not occur through the pedestrian realm.</p> <p><i>DDOT will require this plan for schools and daycares currently in operation even if the relief requested from the BZA is not related to a student cap increase.</i></p>	<p>If sub-alternative 1A or 2A (Navy Museum) is selected, the Navy design plans will include a pick-up and drop-off location for visitors. In addition, there would be a plan to accommodate school and motorcoach buses. Detailed designs will not be developed until NEPA is complete and if the preferred alternative includes a Navy Museum option.</p>	<p>DDOT 5/16/22: DDOT concurs, but ensure that pick-up/drop-off activities for motorcoach and buses do not occur on 11th Street SE or M Street SE.</p> <p>Navy 6/10/22: Navy acknowledges this comment if Alternative 1A or 2A is selected.</p>
<p>On-Street Parking Occupancy Study</p> <p>This analysis is required if BZA relief from 5 or more on-site vehicle parking spaces is being requested. It may also be required as part of a ZC or permitting case if DDOT has concerns about site-generated vehicles parking in adjacent residential neighborhoods.</p> <p><i>Vehicle parking occupancy counts will be collected hourly during periods of peak demand. These are typically the weekday evening period (6-10 PM) for residential developments, weekday morning period (7-9 AM) if within ¼ mile of Metrorail, and weekend peak periods if there is a commercial component. Parking availability must be assessed a maximum of 2 blocks in each direction from the site, unless otherwise agreed upon. Also include inventory of off-street parking garages in vicinity of site.</i></p>	<p>There will be no on-street parking proposed under any sub-alternative for Navy reuse of the SEFC E Parcels. Under the Land Exchange alternative, the developer may propose on-street parking in the future. The developer would consult with DDOT during development of designs.</p> <p><input type="checkbox"/> Scoping Graphic: Study Area/Block Faces</p>	<p>DDOT 5/16/22: DDOT concurs.</p>
<p>Parking Garage Queuing Analysis</p> <p>If site contains 150 or more vehicle parking spaces and direct access to a public street, evaluate on-site vehicle queuing demand and provide analysis demonstrating parking entrance and ramps can properly process vehicles without queuing onto public streets. Provide proposed parking supply,</p>	<p>If Alternative 1 is selected, existing parking garages in the WNY Southeast Corner would be used and expanded. Queuing could change based on an increase in vehicles. Detailed designs by the Navy and/or the developer will not be prepared until NEPA is complete and if the preferred alternative includes the land exchange. The EIS will evaluate conceptual plans.</p>	<p>DDOT 5/16/22: DDOT concurs, although encourages the Applicant to reduce their parking ratio.</p> <p>Navy 6/10/22: Modifications to the existing parking garages will result in no net change to the number of employee parking spaces. The</p>

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queuing analysis, and physical controls to parking area, if applicable.		parking ratio will continue to be reduced over time per the WNY TMP. Sub-alternative B would further reduce the parking ratio by increasing the base population while only very minimally increasing parking spaces. The Navy is committed to continually implementing TDM strategies to reduce the parking ratio.
Motorcoaches Propose methodology for data collection and analysis. Describe and show the parking locations, anticipated demand, existing areas on- and off-site for loading and unloading (and desired loading times restrictions, if any), and potential routes to and from designated truck routes. If on-street motorcoach parking is proposed, a plan for installation of signage and meters is required, subject to DDOT-PGTD approval. This section is typically only required for uses that generate significant tourist activity (hotels, museums, cruises, etc.).	Detailed designs will not be developed until NEPA is complete and if the preferred alternative includes a Navy Museum option. Under the Sub-alternative 1A or 2A, there would be a plan to accommodate school and motorcoach buses. The 2017 traffic study will be used to identify the location for buses for sub-alternatives that include the Navy Museum.	DDOT 5/16/22: In 2017, motorcoach pick-up/drop-off was a major issue. Please coordinate with DDOT on this topic as the project further develops. Navy 6/10/22: Navy acknowledges this comment if Alternative 1A or 2A is selected.

Section 4: TRAFFIC IMPACT ANALYSIS (TIA)

The TIA component of a CTR is required when a development generates 25 or more peak hour vehicle trips in the peak direction (higher of either inbound or outbound vehicles in any study peak period), after mode split is applied. Existing site traffic, pass-by, TDM, internal capture or other reductions may not be applied when calculating whether a TIA is required. Applicable reductions may be used in the multi-modal trip generation summary and assignment of trips within the TIA, as appropriate. A stand-alone TIA may also be required if the project proposes a change to roadway capacity, operations, or directionality; has a site access challenge; or as otherwise deemed necessary by DDOT.

CATEGORY & GUIDELINES	CONSULTANT PROPOSAL	DDOT COMMENTS
TIA Study Area and Data Collection Identify study intersections commensurate with the impact of the proposed project and the travel demand it will generate. Study area must include all major signalized and unsignalized intersections, intersections expected to realize large numbers of new traffic, and intersections that may experience changing traffic patterns. Additional guidance on selecting study intersections is provided in DEM 38.3.2. <i>Turning Movement Counts (TMC) will be collected in 15-minute increments during the weekday morning (6:30 AM to 9:30 AM) and evening (4:00 PM to 7:00 PM) peak periods on Tuesdays through Thursdays during non-holiday weeks, while schools and Congress are in session, the Fed govt is not in a shutdown, and weather is not an issue, unless otherwise agreed upon. Saturday mid-day peak period (generally 11:00 AM to 1:00 PM) will be studied if development program is retail-heavy. TMCs will include vehicles, pedestrians, bicyclists, and % truck traffic. TMCs will be collected at all existing site driveways and reported as existing conditions in trip generation summary.</i> <i>Previously collected TMCs may be used if they are less than 2 years old at the time of study submission. DDOT may require counts be refreshed once TMCs reach 3 years old or if a major</i>	1. Virginia Ave SE/I Street SE @ 7th Street SE (ACISA 4022) 2. Virginia Ave SE @ 7th Street SE (ACISA 4023) 3. I Street SE @ 8th Street SE (ACISA 4026) 4. Ramp D @ 8th Street SE (ACISA 8029) 5. Virginia Ave SE @ 8th Street SE (ACISA 4029) 6. I Street SE @ Ramp (ACISA 971) 7. I Street SE @ 11th Street SE (ACISA 4037) 8. K Street SE @ 11th Street SE (ACISA 5) 9. SE Blvd/I-695 NB On-Ramp @ 11th Street SE (ACISA 8262) 10. SE Blvd/I-695 SB Off-Ramp @ 11th Street SE (ACISA 4262) 11. L Street SE @ 11th Street SE (ACISA 6) 12. M Street SE @ New Jersey Ave SE (ACISA 2260) 13. M Street SE @ 3rd Street SE (ACISA 2243) 14. M Street SE @ 4th Street SE (ACISA 2259) 15. M Street SE @ Isaac Hull Ave SE (ACISA 2249) 16. M Street SE @ 8th Street SE (ACISA 4027) 17. M Street SE @ 9th St SE/Parsons Ave (ACISA 4031) 18. M Street SE @ 11th St SE / I-695 On-Ramp (ACISA 4039) 19. M Street SE @ 12th St SE / I-695 Off-Ramp (ACISA 4245) 20. M Street SE @ 12th St SE (ACISA 8002) 21. N Street SE @ 11th Street SE (ACISA 4040) 22. O Street SE @ 11th Street SE (ACISA 4259)	DDOT 5/16/22: DDOT concurs. Be sure to also submit the data in DDOT's spreadsheet template. Navy 6/10/22: Navy concurs.

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<p>transportation or land use change occurs. A growth rate will be applied to TMCs older than 12 months to create present year Existing Conditions.</p>	<p><input checked="" type="checkbox"/> Scoping Graphic: Study Intersections</p> <p><input type="checkbox"/> Provide hard copies of TMCs in CTR appendix and electronic copies in DDOT-required spreadsheet format at time of submission.</p>	
<p>TIA Study Scenarios</p> <p>Propose an appropriate set of scenarios to analyze. Note the anticipated build-out year and project phasing. Analysis scenarios to be considered:</p> <ul style="list-style-type: none"> Existing Conditions (Current Year) Background Conditions (No-Build) Total Future Conditions (With Development) Total Future Conditions (With Development and Mitigation) Additional Scenarios For Each Phase, as necessary Total Future Conditions (+5 Years), as required Long Range +20 Years Planning Scenario, as required 	<ul style="list-style-type: none"> Existing Conditions for the Year 2022, using the March 2022 traffic counts No-Action Alternative for design year 2032: <ul style="list-style-type: none"> Apply DDOT-approved growth factor to the full network Generate trips from new residential, retail, and office buildings at the SEFC E Parcels <u>per the existing Zoning Commission approval</u> Apply trip distribution to the newly generated trips <u>from the SEFC E Parcels</u> Alternative 1 Conditions for design year 2032: <ul style="list-style-type: none"> Apply DDOT-approved growth factor to the full network Generate trips from new Navy buildings (Museum or Administrative Facilities) at the SEFC E Parcels Generate trips from new residential, retail, and office buildings in the WNY Southeast Corner Comparison of trips generated from the No Action Alternative Apply trip distribution to the newly generated trips Alternative 2 Conditions for design year 2032: <ul style="list-style-type: none"> Apply DDOT-approved growth factor to the full network Generate trips from new Navy buildings (Museum or Administrative Facilities) on the SEFC E Parcels Comparison of trips generated from the No Action Alternative No private development on the WNY Southeast Corner Apply trip distribution to the newly generated trips 	<p>DDOT 5/16/22: Please note the strikethrough in the column to the left. No Action Alternative should just include background growth rate, background known, and background development.</p> <p>Navy 6/10/22: If the Navy does not acquire the SEFC E Parcels, the developer will continue with approved plans to develop those parcels with office and residential uses. For the Navy's EIS, the No Action Alternative will address the impacts of that private development. As a result, the traffic study will be consistent with the NEPA document for the No Action Alternative.</p> <p>Growth factor: Ward 8 population growth was 10.32% while Ward 6 was 30.42% from 2010 to 2020 (DC Health Matters, 2022 Demographics, Population). Propose to use the DDOT maximum growth rate of 2% per year.</p> <p>DDOT 6/22/22: Please review the ADT Volume Maps for 11th Street SE and M Street SE for traffic volume growth to verify that the 2% growth factor is appropriate (growth factor accommodates for <i>regional</i> growth, not local growth). DDOT does not necessarily calculate growth factors based on population growth. Please note the additional proposed text to the scenarios in the column to the left.</p> <p>Navy 6/28/22: Thank you for providing the DDOT historical traffic volume. These data show a relatively flat demand in the WNY area, and all (2012-2019) was before the pandemic that likely reduced demands even further. As mentioned under regional traffic growth, based on these data especially for M Street SE and 11th Street near M, the Navy proposes using 0.1% growth rate per year.</p>

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DDOT 7/20/22: DDOT concurs.

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<p>TIA Methodology</p> <p>Propose an appropriate methodology for the capacity analysis including the type of software program to be used. Per DEM 38.3.5.1, HCM methodology will be used to determine Level of Service (LOS), v/c, and vehicle queue lengths. LOS must be reported by intersection approach and v/c by lane group. DDOT prefers Synchro 9 or newer software for capacity and queueing analyses. SimTraffic (10 simulations averaged) should be used to further evaluate an observed queueing issue and determine a solution, as necessary.</p> <p><i>DDOT's required standard Synchro and SimTraffic inputs/settings are provided in Appendix H.</i></p> <p><i>Merge/weave/diverge analysis is required if any of the study intersections include a highway, freeway, or Interstate ramp (DEM 38.3.5.3). HCS software should be used for this analysis.</i></p>	<p>Leidos will use Synchro 11 to model the aforementioned TIA study scenarios. Ideal saturation flow rates will reflect those obtained from DDOT within their Synchro files. Heavy vehicle percentages will reflect the March 2022 traffic counts. Other aspects of the analysis methodology are documented in other sections of the scoping form.</p> <p><input type="checkbox"/> <i>Will provide copies of Synchro, SimTraffic, and other analysis software printouts in study appendix and electronic copies of analysis files at time of CTR submission.</i></p>	<p>DDOT 5/16/22: DDOT concurs.</p>
<p>Transportation Network Improvements</p> <p>List and map all roadway, transit, bicycle, and pedestrian projects funded by DDOT or WMATA, or proffered by others, in the vicinity of the study area and expected to open for public use prior to the proposal's anticipated build-out year. Review the STIP, CLRP, and proffers/commitments for other nearby developments.</p>	<p>Transportation network improvement in the region of influence will be described in the traffic study.</p> <p><input type="checkbox"/> <i>Scoping Graphic: Locations of background transportation network improvements</i></p>	<p>DDOT 5/16/22: DDOT concurs.</p>
<p>Local Traffic Growth</p> <p>List and map developments to be analyzed as local background growth. This will include known matter-of-right and zoning-approved developments within ¼ mile of site and others more than ¼ mile from site if their traffic is distributed through study intersections. Document the portions of developments anticipated to open by the projected build-out year.</p>	<p>Local traffic growth will be described in the EIS under cumulative impacts.</p> <p><input type="checkbox"/> <i>Scoping Graphic: Background development projects near study area</i></p> <p><input type="checkbox"/> <i>Scoping Table: Completion amounts/portions occupied of background developments</i></p>	<p>DDOT 5/16/22: Please provide list of background developments within the study area.</p> <p>Navy 6/10/22: Figure 2 (Attachment 3) showing proposed developments has been attached to this form.</p> <p>DDOT 6/22/22: Please remove #5 as this development has already been constructed. For #13, the project is Yards Parcel H, not the Yards Phase 2/3.</p> <p>Navy 6/28/22: Projects 1-6 are past projects for our NEPA analysis so won't be included for traffic. We changed the name of Project 13, as suggested.</p>

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Regional Traffic Growth

Propose a methodology to account for growth in regional travel demand passing through the study area. An appropriate methodology could include reviewing historic AADT traffic counts, MWCOC model growth rates, data from other planning studies, or recently conducted nearby CTRs. These sources should only be used as a guide.

Generally, maximum annually compounding growth rates of 0.5% in peak direction and 2.0% in non-peak direction are acceptable. Growth rates based should be based on DDOT historical data from 10+ years, if available. Adjustments to the rates may be necessary depending on the amount of traffic assumed from local background developments or if there were recent changes to the transportation network.

Leidos proposes to apply DDOT historical data, and to apply a singular growth rate value to the entire 22-intersection region of influence. Leidos requests access to the DDOT historical data that would provide an appropriate growth rate and requests a simplistic sample calculation that demonstrates the compound calculation.

☐ *Scoping Table: Projected regional growth assumptions (dependent on methodology), show growth rates by facility, direction, and time of day*

☐ *Scoping Graphic: Projected regional growth assumptions (dependent on methodology), show growth rates by facility, direction, and time of day*

DDOT 5/16/22: DDOT concurs. Please see the link here for Average Daily Trips:
<https://wiki.ddot.dc.gov/display/public/GIS/Traffic+Volume+Maps>

Navy 6/10/22: Ward 8 population growth was 10.32% while Ward 6 was 30.42% from 2010 to 2020 (DC Health Matters, 2022 Demographics, Population). Propose to use the DDOT maximum growth rate of 2% per year.

DDOT 6/22/22: Please review the ADT Volume Maps for 11th Street SE and M Street SE for traffic volume growth to verify that the 2% growth factor is appropriate (growth factor accommodates for regional growth, not local growth). DDOT does not necessarily calculate growth factors based on population growth.

Navy 6/28/22. Thank you for providing the DDOT historical traffic volume. These data show a relatively flat demand in the WNY area, and all (2012-2019) were before the pandemic that likely reduced demands even further.

- M Street near New Jersey Avenue (2012-2019): 19.1, 17.2, 14.2, 14.4, 15, 15, 15, 15
- 11th Street near M Street (2015, 2016, 2018): 15, 16, 16
- L Street near 11th Street (2016-2019): 13, 13, 13, 13
- 11th Street Bridge (2012-2019): 62.3, 62.5, 66.3, 62.0, 66.8, 73.3, 77.1, 78.1
- 11th Street near I Street (2012-2018): 12.8, 8.4, 10.1, 10.2, 9, 9, 9

Based on these data especially for M Street SE and 11th Street near M, the Navy proposes using 0.1% growth rate per year.

DDOT 7/20/22: DDOT concurs.

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Trip Distribution

Provide sources and justification for proposed percentage distribution of site-generated trips. Additionally, document proposed pass-by distributions and the re-routing of existing or future vehicles based on any changes to the transportation network.

Percentage distributions must be shown turning at intersections throughout the transportation network and at site driveways and garage entrances to ensure appropriate routing assumptions.

The agreed upon trip distribution methodology may not be revised between scoping and CTR submission without concurrence by DDOT Case Manager.

Given the District's urban context and grid network, a small portion of trips (up to 5% of trips through an intersection) may be re-routed from their original routes to an alternate route due to traffic congestion.

The March 2022 traffic count will set a baseline for turning movement volumes at all relevant intersections within the region of influence. Leidos will update the Synchro models to contain and use this March 2022 volume data, which will automatically reflect trip distribution for the existing conditions scenario.

For the year 2032 design year alternative scenarios, Leidos will first apply the ITE Trip Generation procedures to estimate newly generated trips (refer to the earlier Trip Generation section). Trip productions (from the new buildings, exiting in the ROI) can simply follow the same turning movement proportions observed in the March 2022 traffic counts. For trip attractions (entering the ROI, to the new buildings), Leidos proposes to add these new volumes at the following entry points (Figures 2 and 3):

- 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)

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). Leidos will re-optimize the cycle lengths in each alternative scenario, to ensure that the signal timings do not cause any undue congestion.

☐ Scoping Graphic(s): Percentage Distribution by Land Use, Direction, Time of Day

DDOT 5/16/22: Please clarify if the Applicant means Southeast Boulevard for "westbound on M Street".

Navy 6/10/22: "Westbound on M Street" refers to ROI entry point #5 illustrated in Figures 3 and 4 (Attachments 4 and 5). As shown in the figures, traffic entering the ROI from entry point #5 would initially pass through intersections 20, 19, and 18, respectively, which constitutes traveling westbound on M Street.

DDOT 6/22/22: DDOT concurs.

Section 5: MITIGATION

The completed CTR must detail all proposed mitigations. The purpose of discussing mitigation at the scoping stage is to highlight DDOT's Significant Impact Policy, DDOT's approach to mitigation, and to give the Applicant an opportunity to gain initial feedback on potential mitigations that may ultimately be proposed. Any mitigation strategies discussed and included in the *Scoping Form* are considered non-binding until formally evaluated in the study and committed to as part of a related action.

CATEGORY & GUIDELINES

CONSULTANT PROPOSAL

DDOT COMMENTS

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<p>DDOT Significant Impact Policy</p> <p><u>Vehicle Parking Supply</u> DDOT considers a high parking provision as an 'impact' that needs to be mitigated since it is a permanent site feature that encourages additional driving and yield vehicle trips in the future that were not contemplated in the study. Appropriate mitigations include reducing vehicle parking, implementing substantive TDM strategies, off-site non-automotive network upgrades, and making monetary contributions to DDOT for non-auto improvements. See Table 2 to determine if a site is over-parked based on land use and distance to transit.</p> <p><u>Capacity Impacts at Intersections</u> All site-generated vehicular impacts to the transportation network during study peak hours must be mitigated, per DEM 38.3.5, if any of the following occur:</p> <ul style="list-style-type: none"> • Degradation of an approach or intersection to LOS E or F or intersection v/c ratio increases to 1.0 or greater from Background to Total Future Conditions. • If an approach or intersection exceeds LOS E or F or movement/lane group exceeds 1.0 v/c ratio under Background Conditions then an increase in delay or v/c ratio by 5% or more under Total Future Conditions. • If 95th percentile vehicle queuing length exceeds available capacity of approach or turn lane under Total Future Conditions. • If 95th percentile queue length of an approach or turn lane increases by 150 feet or more from Background to Total Future Conditions. 	<p><input type="checkbox"/> The Applicant acknowledges DDOT's Significant Impact Policy.</p> <p><input type="checkbox"/> The study will comply with all other policies in the Guidance for Comprehensive Transportation Review and the Category & Guidelines column of this Scoping Form not explicitly documented in the Consultant Proposal or DDOT Comments columns.</p> <p><input type="checkbox"/> The study will include all of the required graphics, tables, and deliverables for the relevant sections determined during scoping, as shown in Table 1 of Guidance for Comprehensive Transportation Review.</p> <p>Parking analysis: Once NEPA is complete and an alternative is selected, the Navy will update its WNY Transportation Management Plan to discourage single occupancy vehicle use and support assumed non-auto mode splits. The Navy has conducted surveys of personnel to determine use of single occupancy vehicles versus other modes of transportation, promotes telework, and continues to make progress toward reaching the 1:6 parking ratio. If Alternative 1 is selected, the developer will assess parking supply for future development.</p> <p>Capacity analysis: For the future actions and the no-action alternatives, Leidos will document all instances of the bulleted list of capacity impacts identified in the left column of this form.</p>	DDOT 5/16/22: DDOT concurs.
<p>DDOT Approach to Mitigation</p> <p>DDOT's approach to mitigation is to first establish optimal site design and operations to support efficient site circulation. When these efforts alone cannot properly mitigate an action's impact, reducing on-site vehicle parking, implementing TDM measures, making upgrades to the pedestrian, bicycle, and transit networks to encourage use of non-automotive modes, or monetary contribution to DDOT for non-auto improvements must be proposed. Only when these options are exhausted will DDOT consider capacity-increasing changes to the roadway network because such changes often have detrimental impacts on non-automotive travel and are often contrary to the District's multi-modal transportation goals.</p>	<p><input type="checkbox"/> The Applicant acknowledges DDOT's approach to mitigation that prioritizes (in order of DDOT preference) optimal site design, reducing vehicle parking, implementing more TDM strategies, making non-automotive network improvements, and making a monetary contribution to DDOT for non-auto improvements before considering options that increase roadway capacity or alter roadway operations.</p> <p>The traffic study will identify transportation impacts and recommend potential mitigation measures. The detailed site design prepared after NEPA is complete will include these measures and identify additional measures (if necessary) to be implemented over the 10-year development timeline.</p>	DDOT 5/16/22: DDOT concurs.
<p>Transportation Demand Management (TDM)</p> <p>A TDM Plan is typically required to offset site-generated impacts to the transportation network or in situations where a site provides more parking than DDOT determines is practical for the use and surrounding context. TDM strategies are also an integral part of the District's transportation</p>	<p><input type="checkbox"/> The Applicant will include at least a Baseline TDM Plan. The TDM plan will increase to Enhanced Plan or beyond depending on the parking ratio and other impacts identified in the study.</p> <p>Once NEPA is complete and an alternative is selected, the Navy will update its WNY Transportation Management Plan to discourage single occupancy vehicle use and support assumed non-auto mode splits. The Navy has conducted surveys of personnel to determine use of single occupancy vehicles versus other modes of transportation, promotes telework, and continues to make progress toward</p>	<p>DDOT 5/16/22: Please include the following measures in the Transportation Management Plan:</p> <ul style="list-style-type: none"> • Unbundle the cost of vehicle parking from the lease or purchase agreement for each residential unit and charge a

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<p>options. As such, a Baseline TDM plan is required in all CTRs regardless of impacts to the network. An Enhanced Plan or greater is required if the site is over-parked per Table 2 or there are roadway impacts identified. Sample TDM plans by land use and tier can be found in Appendix C.</p> <p><i>Document all existing TDM strategies being implemented on-site (even outside of a formal TDM Plan) and those being proposed and committed to by the Applicant. Elements of the TDM Plan included in CTR must be broken down by land use and user (i.e., employee, faculty, resident, visitor, etc.).</i></p>	<p>reaching the 1:6 parking ratio. If Alternative 1 is selected, the developer will also work to reduce single occupancy vehicle use especially with Metro, bus, bicycle, and pedestrian access. Additional items may be added to the TDM plan once designs have been prepared.</p>	<p>minimum rate based on the average market rate within a quarter mile.</p> <ul style="list-style-type: none"> • Provide more short- and long-term bicycle parking spaces than required by the 2016 Zoning Regulations. • Fund and install a 19-dock Capital Bikeshare (CaBi) station with 12 bikes and fund one-year of maintenance and operations costs. <p>Navy 6/10/22: Navy acknowledges this comment if Alternative 1 is selected.</p>
<p>Performance Monitoring Plan (PMP)</p> <p>DDOT may require a PMP in situations where anticipated vehicle trips are large in magnitude, unpredictable, or necessitate a vehicle trip cap. Typically, this is required for schools expected to have a significant amount of single occupancy vehicle trips or very large developments.</p> <p>The monitoring plan will establish thresholds for new trips a project can generate, define post-completion evaluation criteria and methodology, determine the frequency of reporting, and establish potential remediating measures (e.g., adjust trip caps or implement additional TDM strategies).</p> <p><i>Document any existing performance monitoring Plans in effect and any proposed changes.</i></p>	<p>If Alternative 1 is selected, the developer would assess options for encourage use of Metro, buses, bicycles, and pedestrian access.</p>	<p>DDOT 5/16/22: A performance monitoring plan (PMP) would not be required for this project.</p> <p>Navy 6/10/22: Navy concurs.</p>
<p>Roadway Operational and Geometric Changes</p> <p>Describe all proposed roadway operational and geometric changes in CTR with supporting analysis and warrants in the study appendix. Detail must be provided on any ROW implications of proposed mitigations. All proposed changes in traffic control must be conducted following the procedures outlined in the <i>Manual of Uniform Traffic Control Devices</i> (MUTCD).</p> <p><i>Note any preliminary ideas being considered.</i></p>	<p>For the AM peak existing conditions, the I-695 off-ramp at 11th Street is the only intersection operating at LOS E, with all other intersections at LOS C or better. For the midday peak existing conditions, all intersections are operating at LOS C or better. The proposed private development under Alternative 1 would likely generate much more congestion than the proposed Navy development options, based on the planned building sizes. Moreover, the I-695 interchange at 11th Street is at risk for LOS F. To mitigate these congestion effects, travelers could choose alternate routes away from the interchange, periodically use alternative travel modes, and/or choose trip times outside of the AM peak period. That said, the team will continue to scan for geometric improvement opportunities as the analyses proceed.</p>	<p>DDOT 5/16/22: DDOT will evaluate the appropriate mitigation measures based on the impacts to the transportation network.</p> <p>Navy 6/10/22: Navy concurs and appreciates DDOT input.</p>
Section 6: ADDITIONAL TOPICS FOR DISCUSSION DURING SCOPING		
CATEGORY & GUIDELINES	CONSULTANT PROPOSAL	DDOT COMMENTS
<p>ANC Discussions and Feedback</p> <p>Provide an update on the status of Community Benefits Agreement, any ANC concerns, or other concerns expressed by the community.</p>		<p>DDOT 5/18/22: Please inform DDOT of any concerns or comments from the ANC or community.</p>

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Miscellaneous Items for Discussion

These items could include relevant on-going discussions with other agencies and stakeholders or seeking direction other types of analyses to be included (i.e., traffic calming proposal, TOPP, TMP).

Navy 6/10/22: Navy concurs.