



DC Clean Rivers Project Potomac River Tunnel

Environmental Assessment

October 2018

APPENDIX A CONSTRUCTION HAUL ROUTES

Prepared in cooperation with the District of
Columbia Water and Sewer Authority



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Tunnel Mining Site / Emergency Overflow Structure Site Options in West Potomac Park

Two haul routes are proposed for the tunnel mining site and emergency overflow structure site options in West Potomac Park:

- Route 1: I-395 via Independence Avenue SW to and from the project site. Inbound and outbound routes would access or exit I-395 using Maine Avenue SW or 14th Street SW.
- Route 2: I-395 via Ohio Drive SW and Buckeye Drive SW to and from the project site.

The haul routes shown on **Figure 1** are based on Tunnel Mining Site Option 1 at West Potomac Park (North); however, the routes would be similar for Tunnel Mining Site Option 2 at West Potomac Park (South). It is noted that Route 1 includes crossing the Inlet Bridge at the southern end of the Tidal Basin. While no published weight or truck restrictions were found for the Inlet Bridge, DC Water would coordinate its planning and hauling with the NPS and the Federal Highway Administration, as needed, to ensure the capacity of the bridge is not exceeded. If necessary, heavier vehicles will utilize Route 1, a Primary Route as defined by DDOT.

CSO 020 Control

For CSO 020 Control Option 1, located southwest of the intersection of 23rd Street NW and Constitution Avenue NW, the inbound haul route would use I-395, Maine Avenue SW, Independence Avenue SW, and Ohio Drive SW to the construction area. The outbound route would leave the site using Rock Creek and Potomac Parkway NW and continue onto the E Street Expressway, turning on to 19th Street NW, Constitution Avenue NW, 15th Street NW or the 9th Street Expressway, and finally on to I-395 (**Figure 2**).

For CSO 020 Control Option 2, located at the Lincoln Memorial Volleyball Courts, the inbound and outbound haul routes would use I-395, Maine Avenue SW, Independence Avenue SW, Ohio Drive SW, and Rock Creek and Potomac Parkway NW to and from the construction area (**Figure 3**).

CSO 021, CSO 022, CSO 024, CSO 027, and CSO 028 Controls, and Ventilation Control Facility

For the CSO 021, CSO 022, CSO 024, CSO 027, and CSO 028 Controls, and Ventilation Control Facility, construction traffic would use the following routes, which are shown on **Figure 4**:

- Route 1: Inbound traffic would use I-395 to either the 12th Street Expressway, or Maine Avenue SW and Independence Avenue SW, to Constitution Avenue NW, and finally to Virginia Avenue NW. For CSO 022 Control Option 1, construction traffic would make a currently restricted left turn from Virginia Avenue NW to Rock Creek and Potomac Parkway NW to access the site from the southbound lanes of the Parkway. Outbound traffic would use Virginia Avenue NW to Constitution Avenue NW, then would return to I-395 via either 15th Street NW / Maine Avenue SW or the 9th Street Expressway.
- Route 2: Inbound and outbound traffic would utilize I-395, Maine Avenue SW, Independence Avenue SW, and Rock Creek and Potomac Parkway NW to reach the sites. This route does not provide inbound access to CSO 022 Control Option 1, so inbound traffic would utilize Route 1 to reach this site.

CSO 029 Control

Two haul routes are proposed for the CSO 029 Control. Haul routes are the same regardless of the option selected.:

- Route 1 (East): Between Rock Creek and I-395, the haul routes for construction of the CSO 029 Control are the same as shown and described in *Section 2.2.13.3*. Once reaching the vicinity of Rock Creek, access to and from the site would be via Whitehurst Freeway and Canal Road NW (**Figure 5**).
- Route 2 (West): Inbound and outbound routes would utilize Canal Road NW, Clara Barton Parkway, and Cabin John Parkway to access I-495 (**Figure 6**).

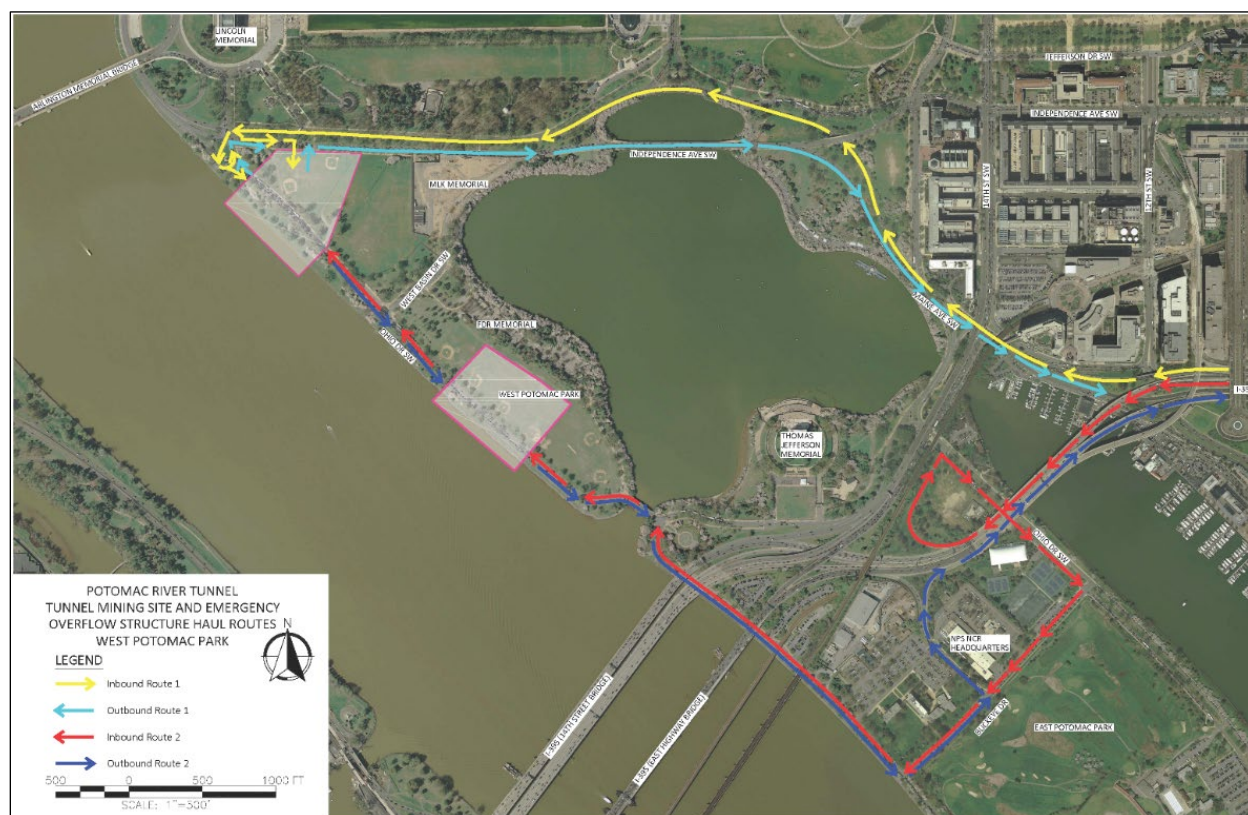


Figure 1: Haul Routes for West Potomac Park Tunnel Mining and Emergency Overflow Structure Sites

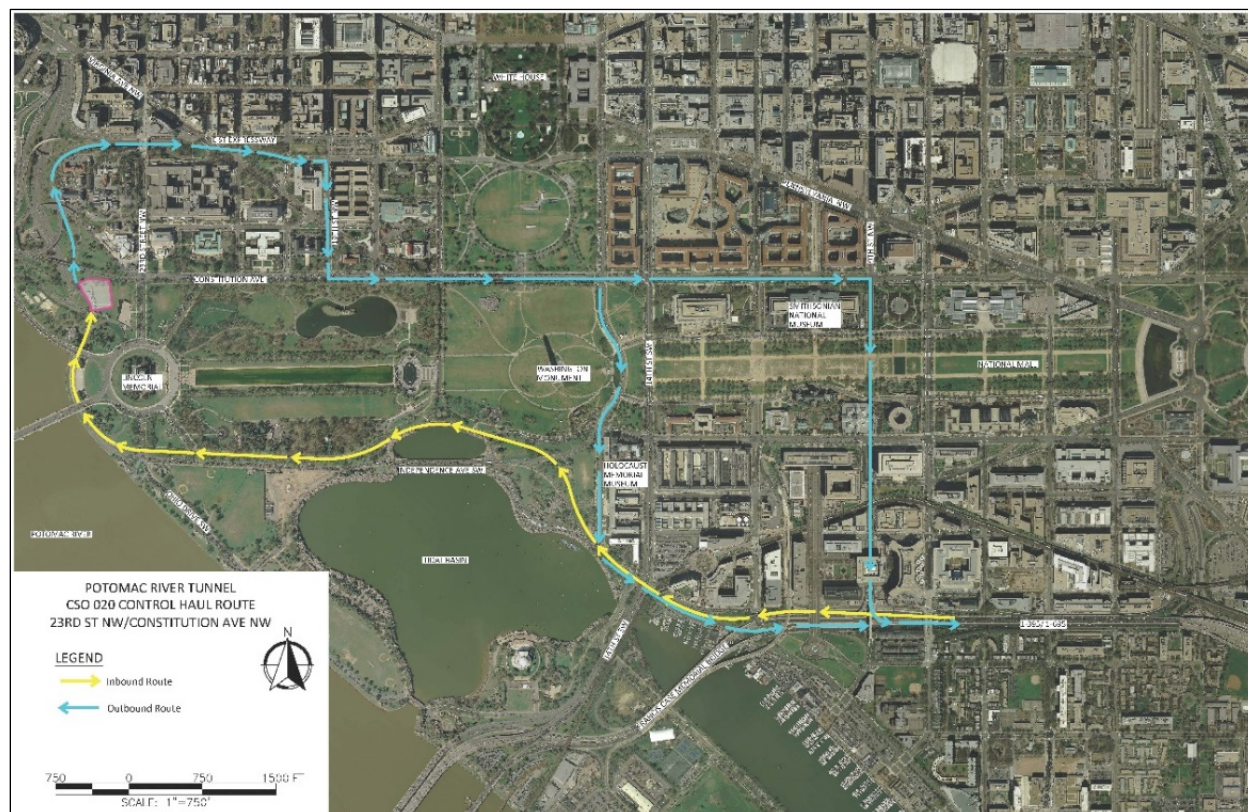


Figure 2: Haul Routes for CSO 020 Control Option 1 – 23rd Street NW / Constitution Avenue NW

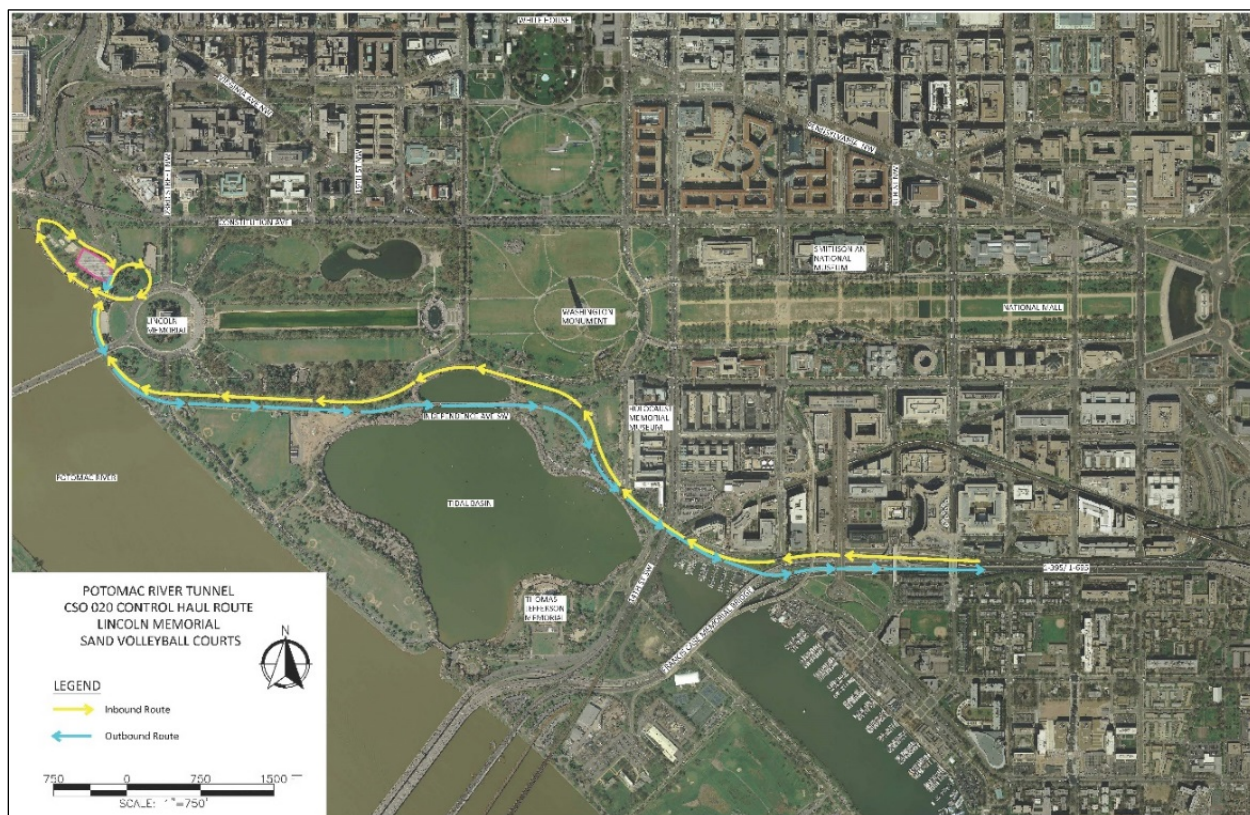


Figure 3: Haul Routes for CSO 020 Control Option 2 – Lincoln Memorial Volleyball Courts



Figure 4: Haul Routes for CSO 021, CSO 022, CSO 024, CSO 027, CSO 028 Controls, and Ventilation Control Facility

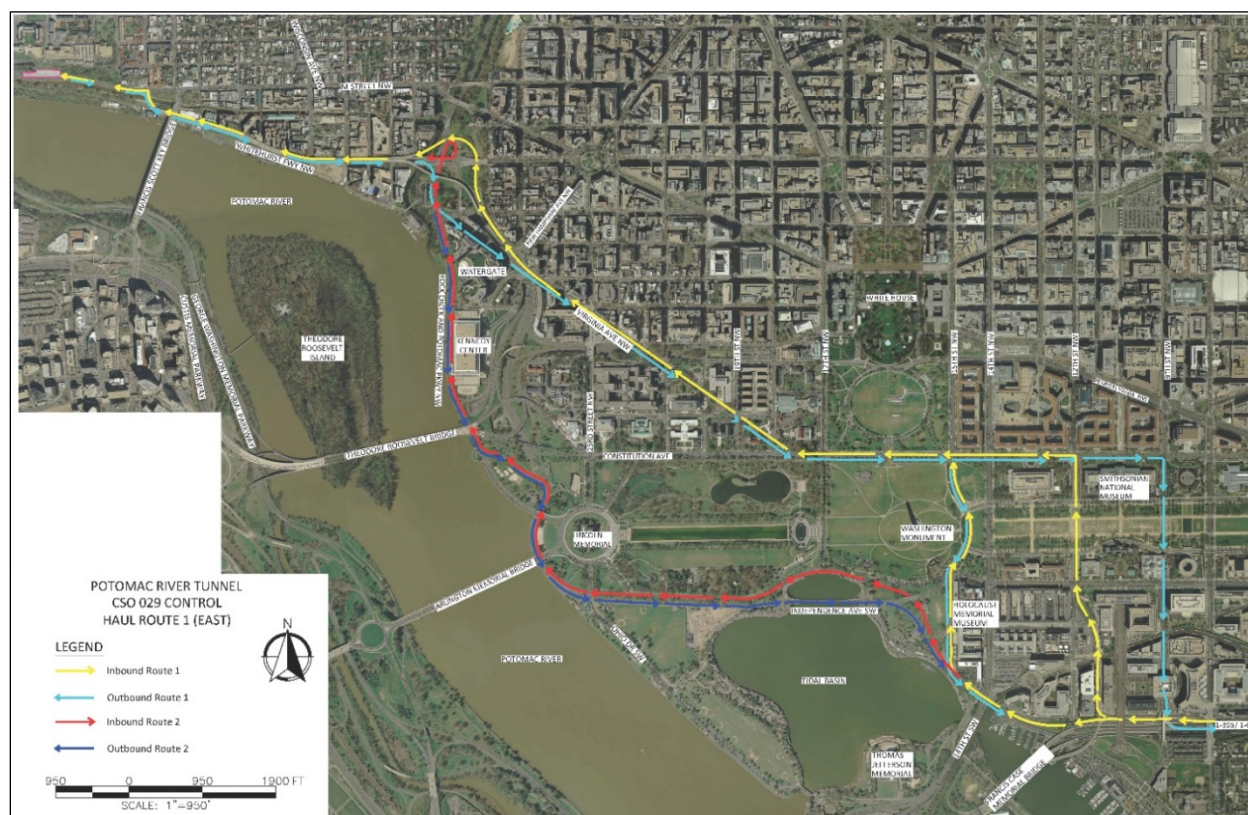


Figure 5: Haul Route 1 (East) for CSO 029 Control

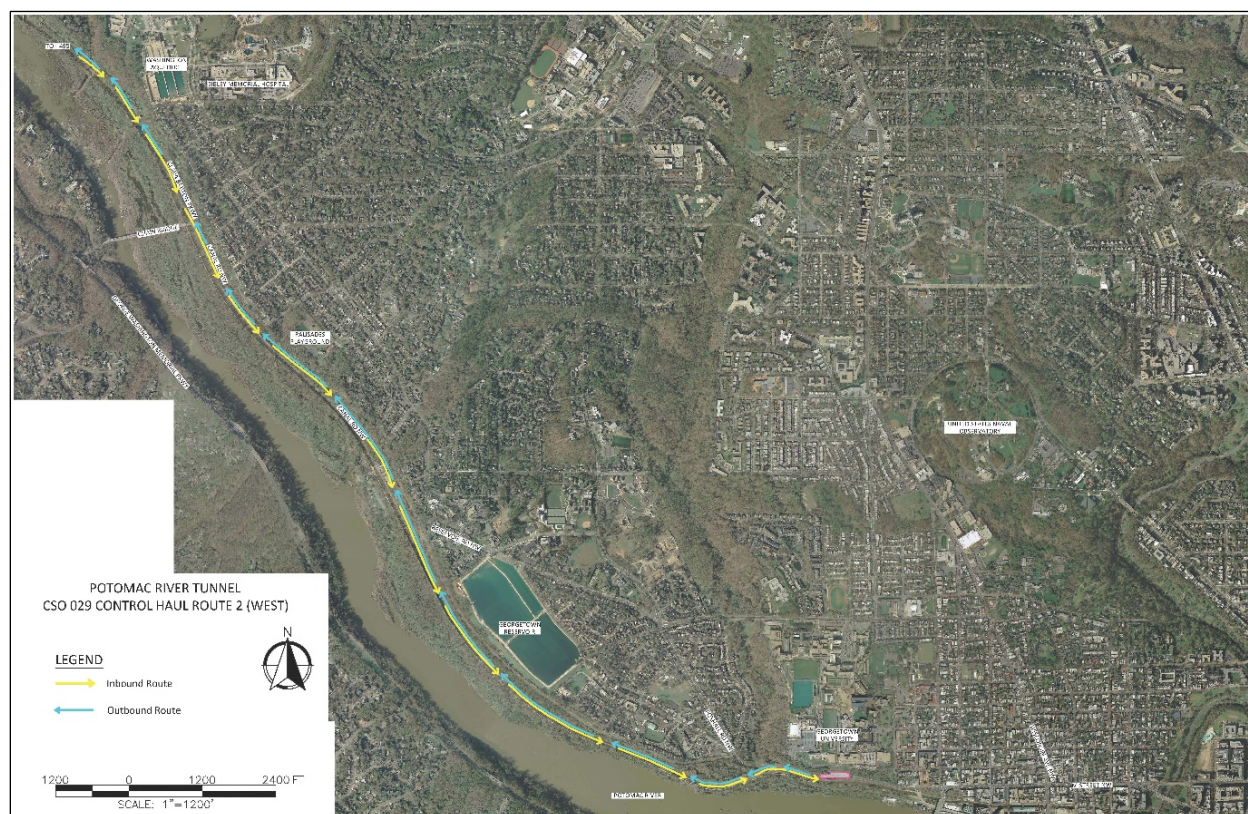


Figure 6: Haul Route 2 (West) for CSO 029 Control



DC Clean Rivers Project Potomac River Tunnel

Environmental Assessment

October 2018

APPENDIX B COMPONENT OPTIONS CONSIDERED BUT DISMISSED

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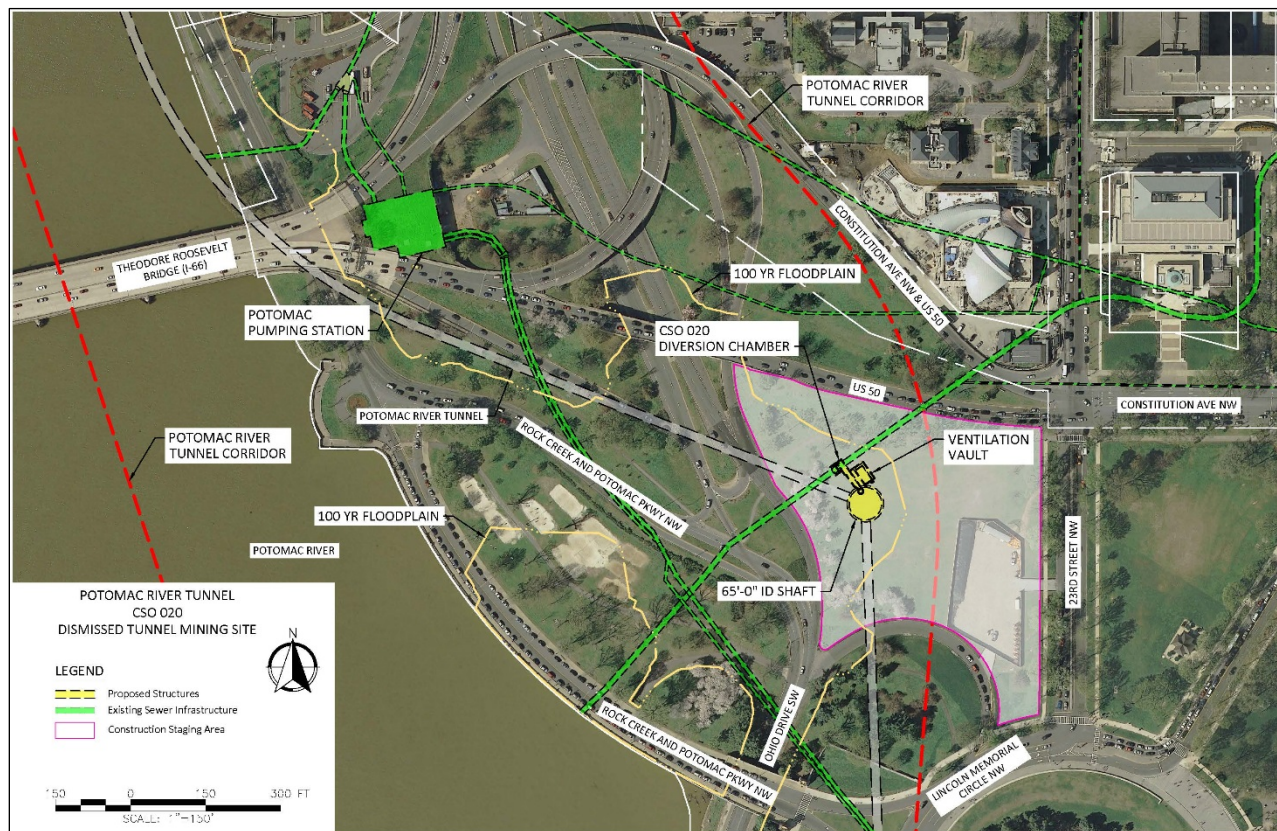


Figure 1: Dismissed CSO 020 Tunnel Mining Site Option

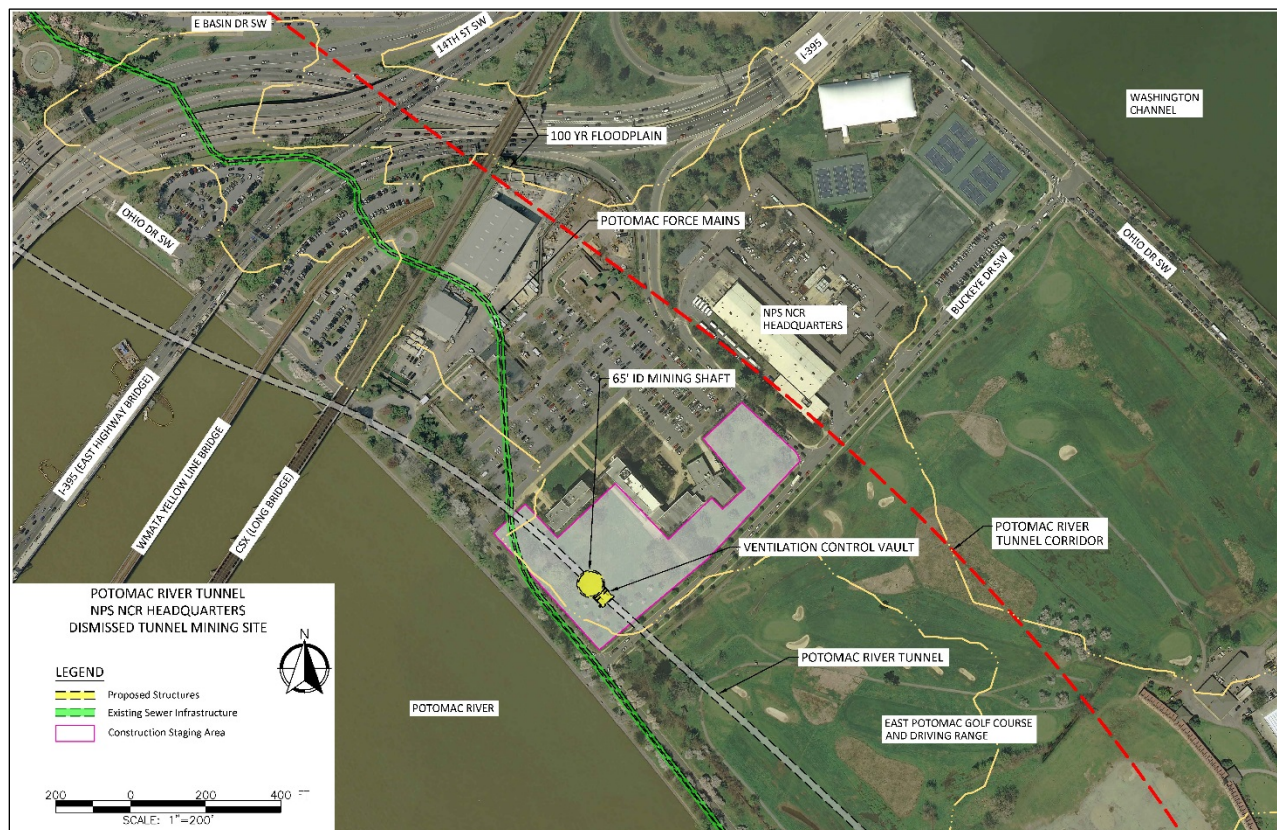


Figure 2: Dismissed NPS NCR Headquarters Tunnel Mining Site Option

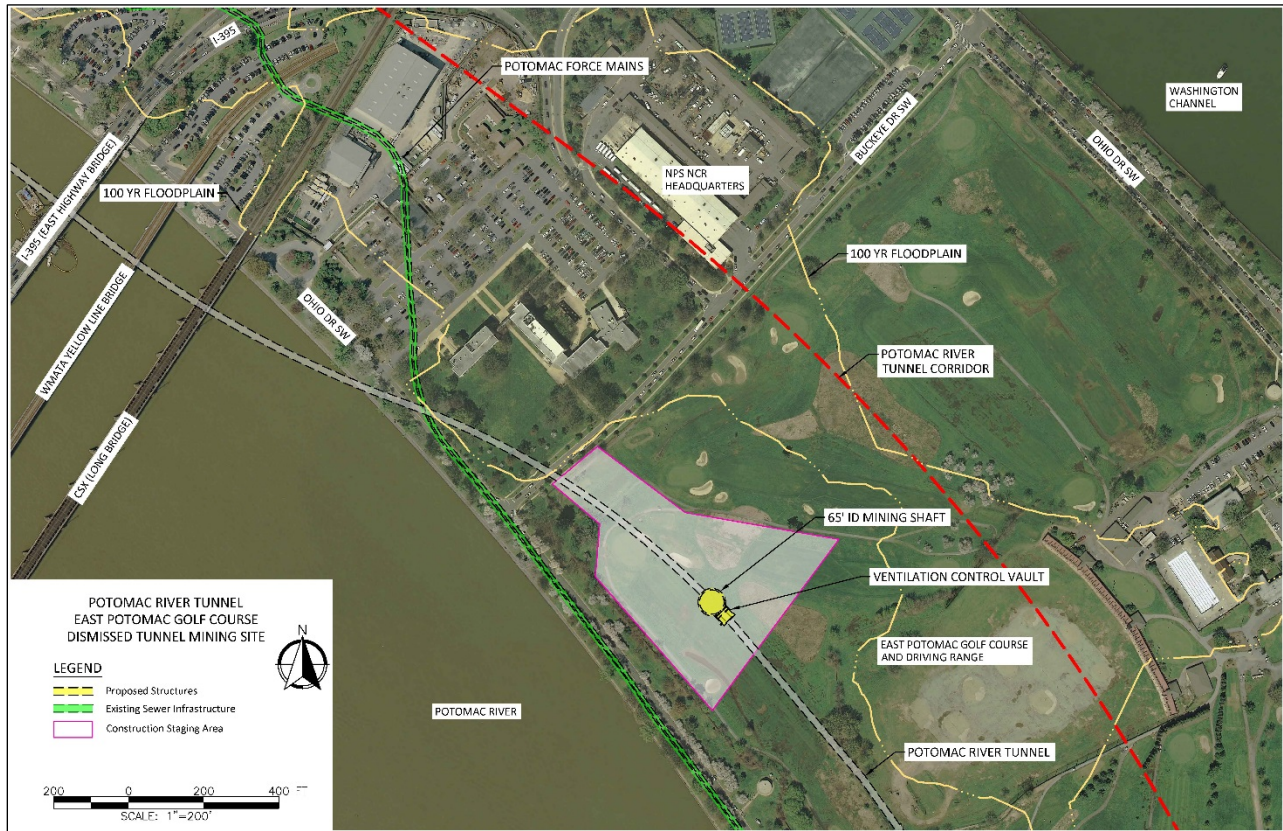


Figure 3: Dismissed East Potomac Golf Course Tunnel Mining Site Option

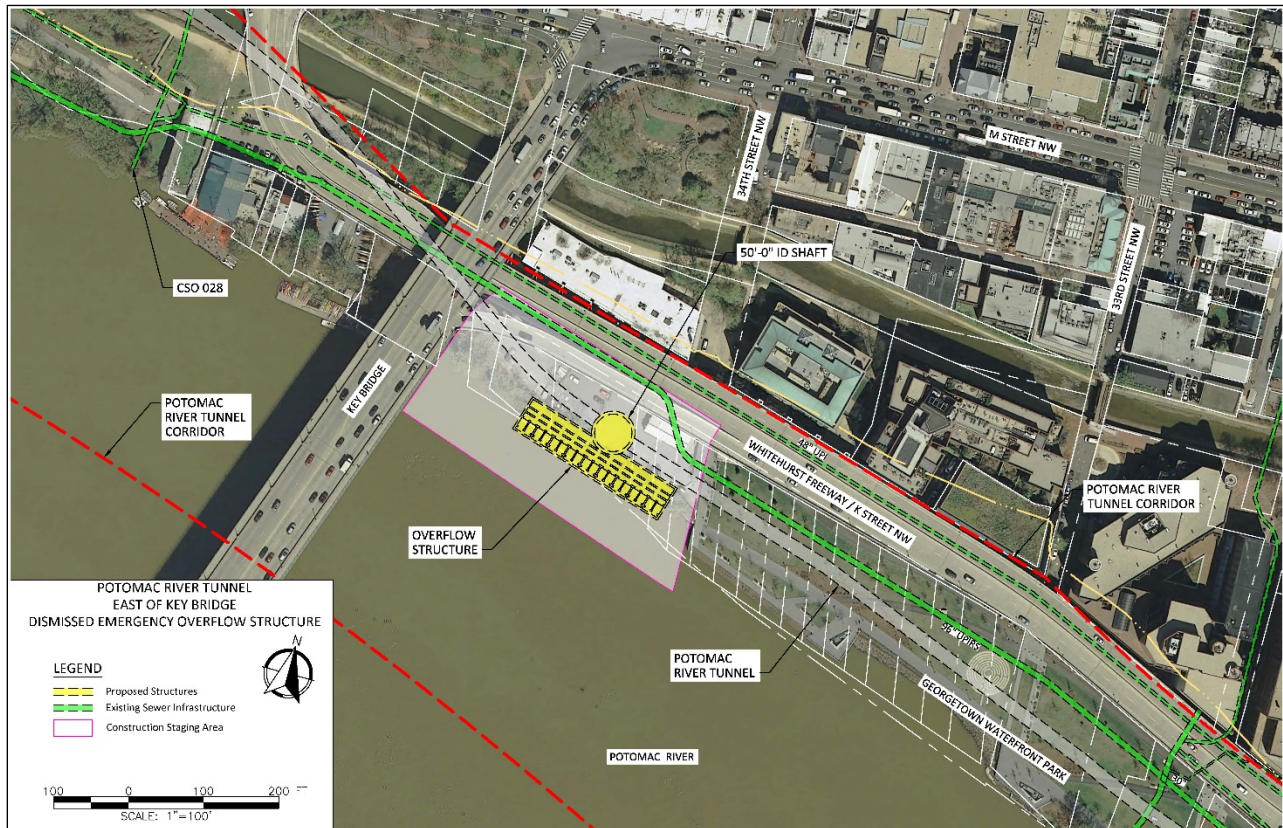


Figure 4: Dismissed Emergency Overflow Structure Site Option East of Key Bridge

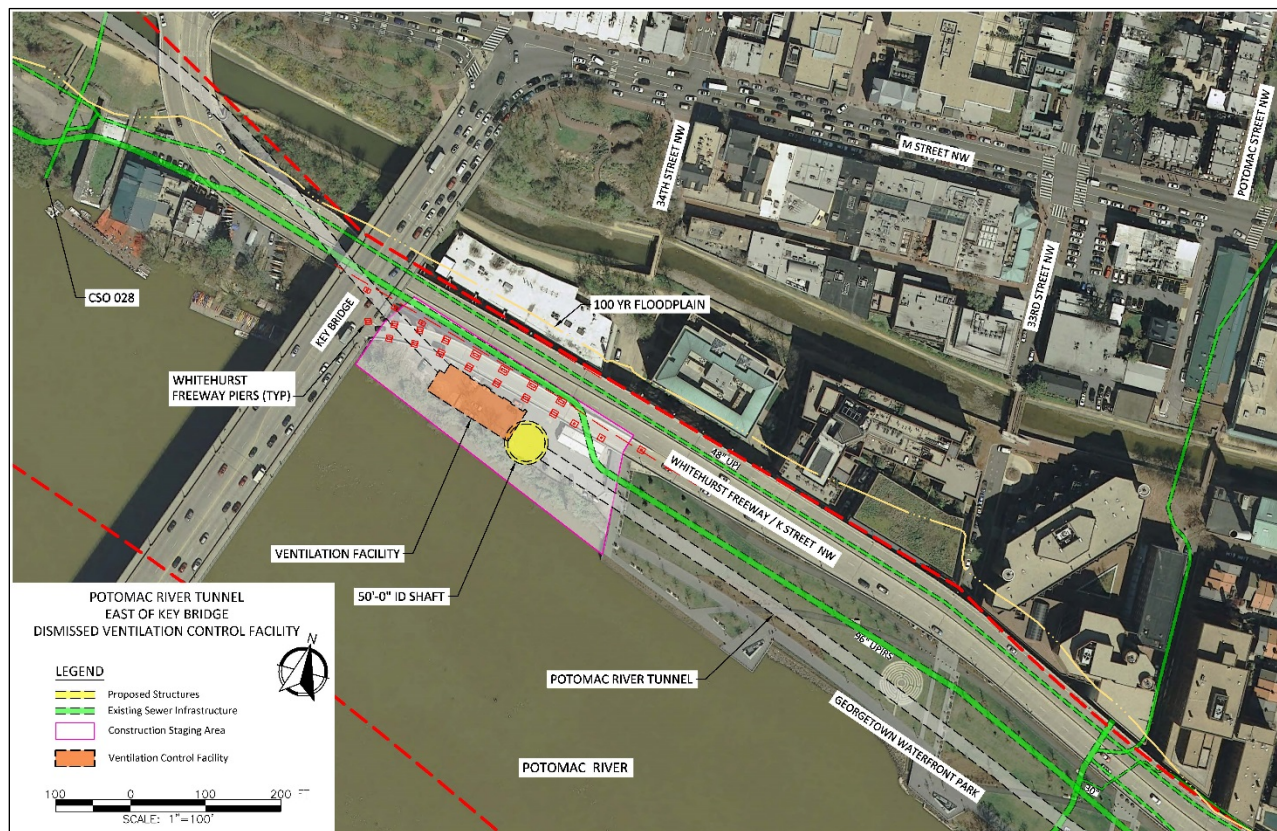


Figure 5: Dismissed Ventilation Control Facility Site Option East of Key Bridge

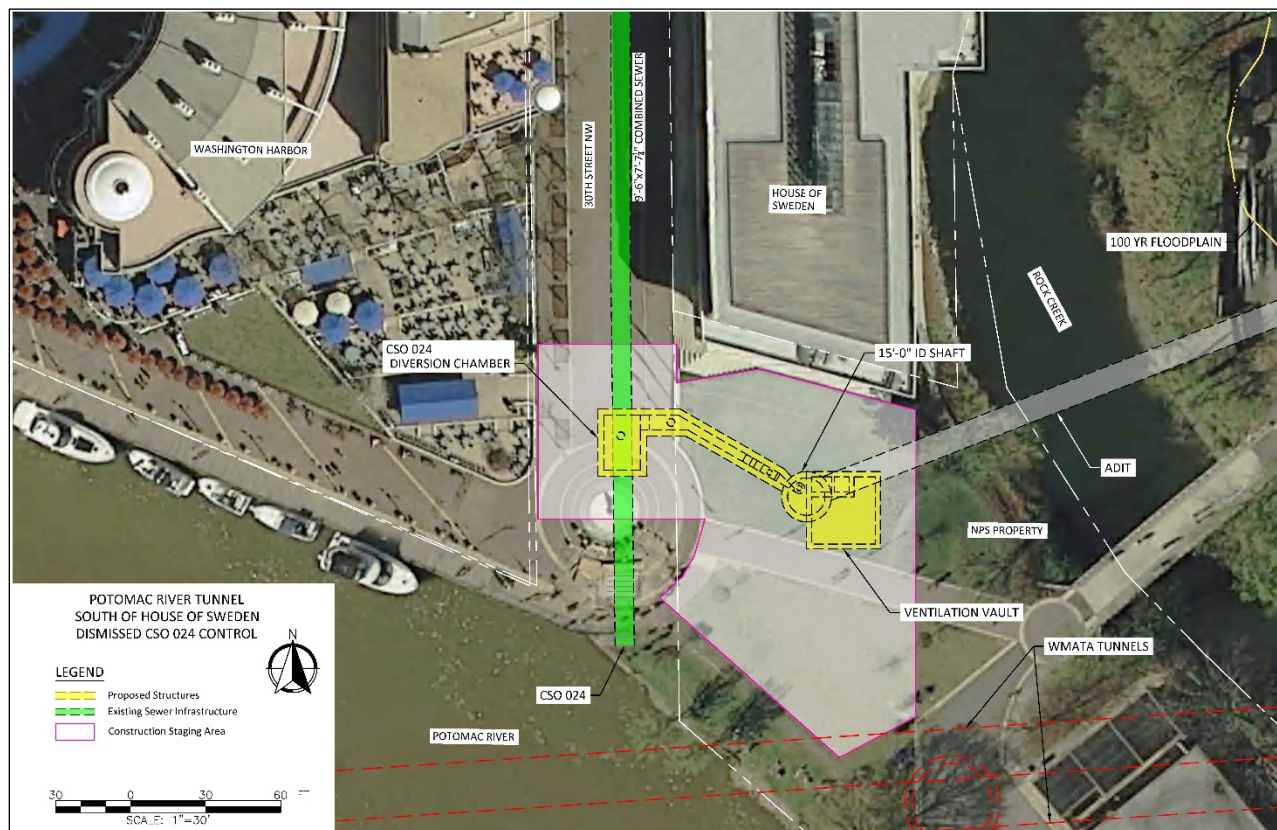


Figure 6: Dismissed CSO 024 Control Site Option South of House of Sweden

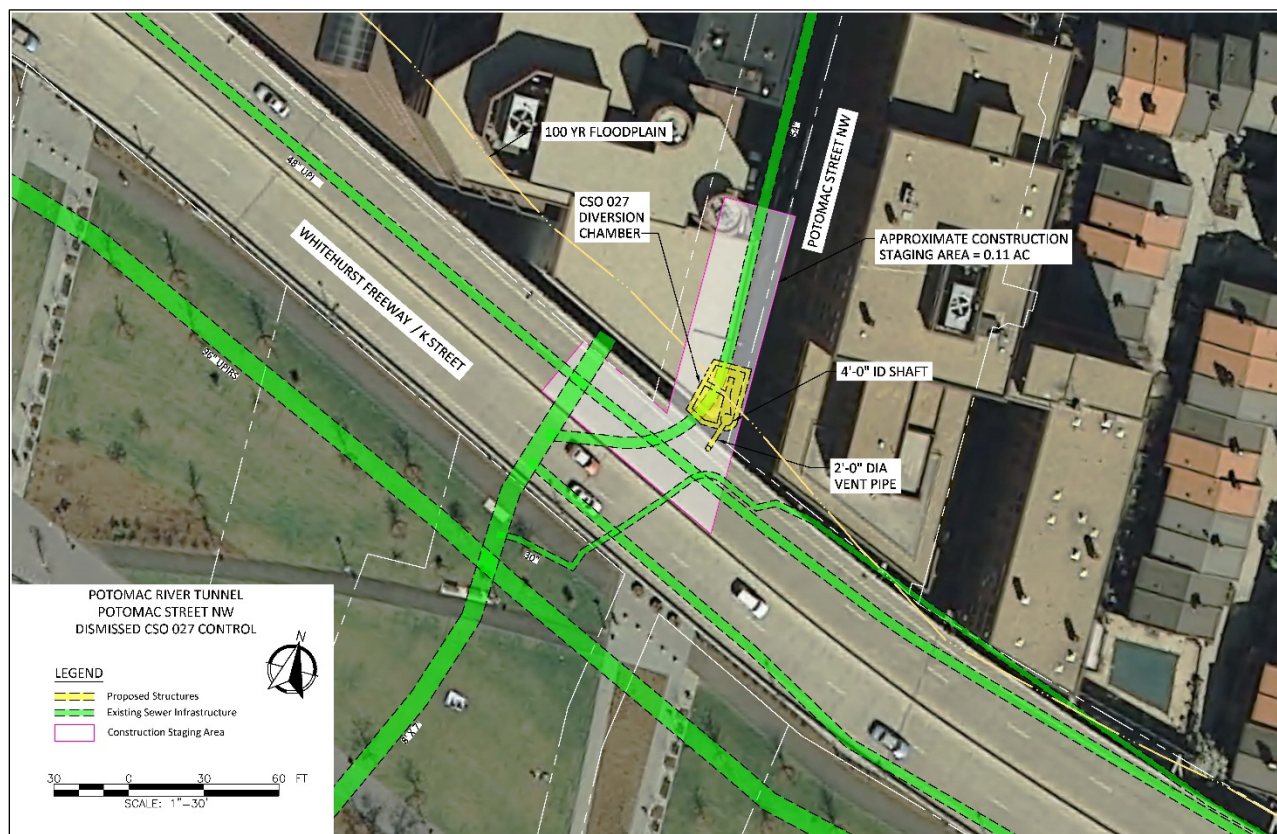


Figure 7: Dismissed CSO 027 Control Site Option Potomac Street NW

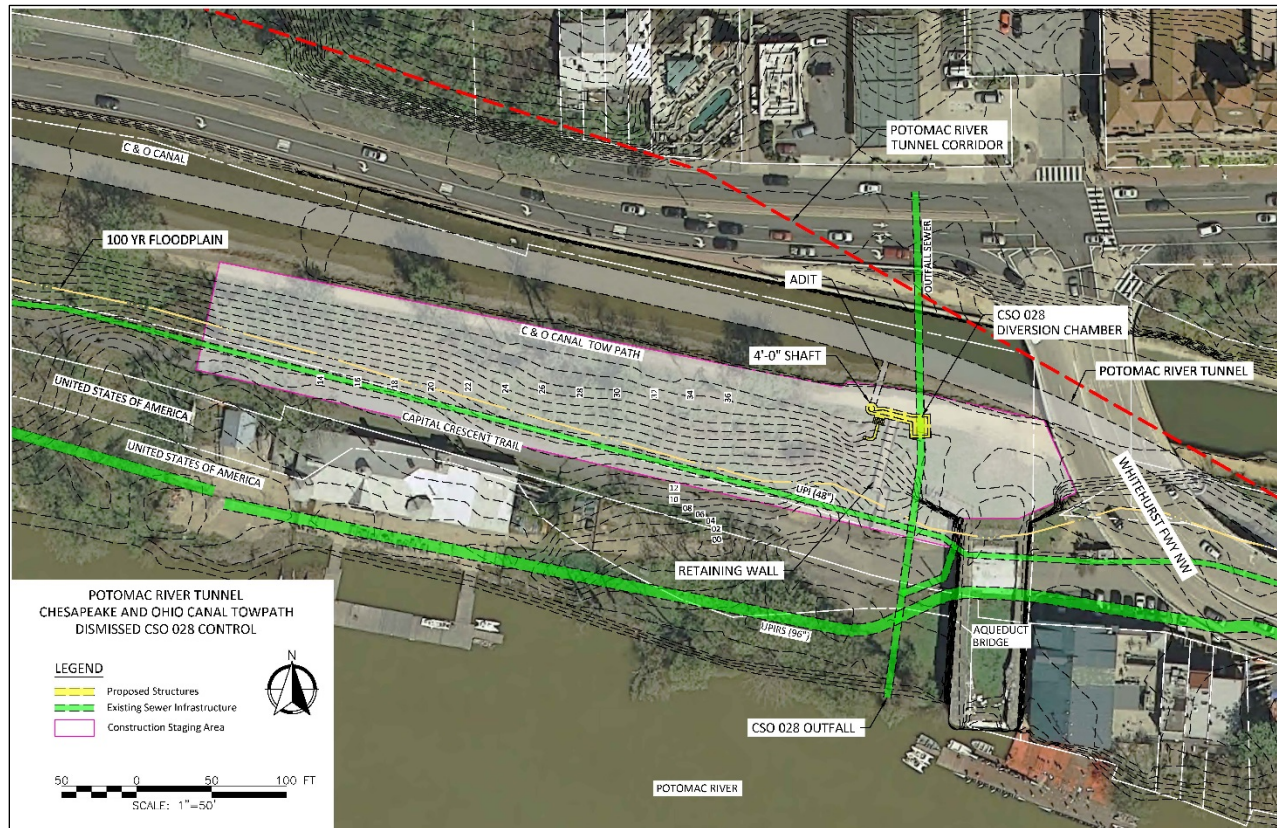


Figure 8: Dismissed CSO 028 Control Site Option along the C&O Canal Towpath

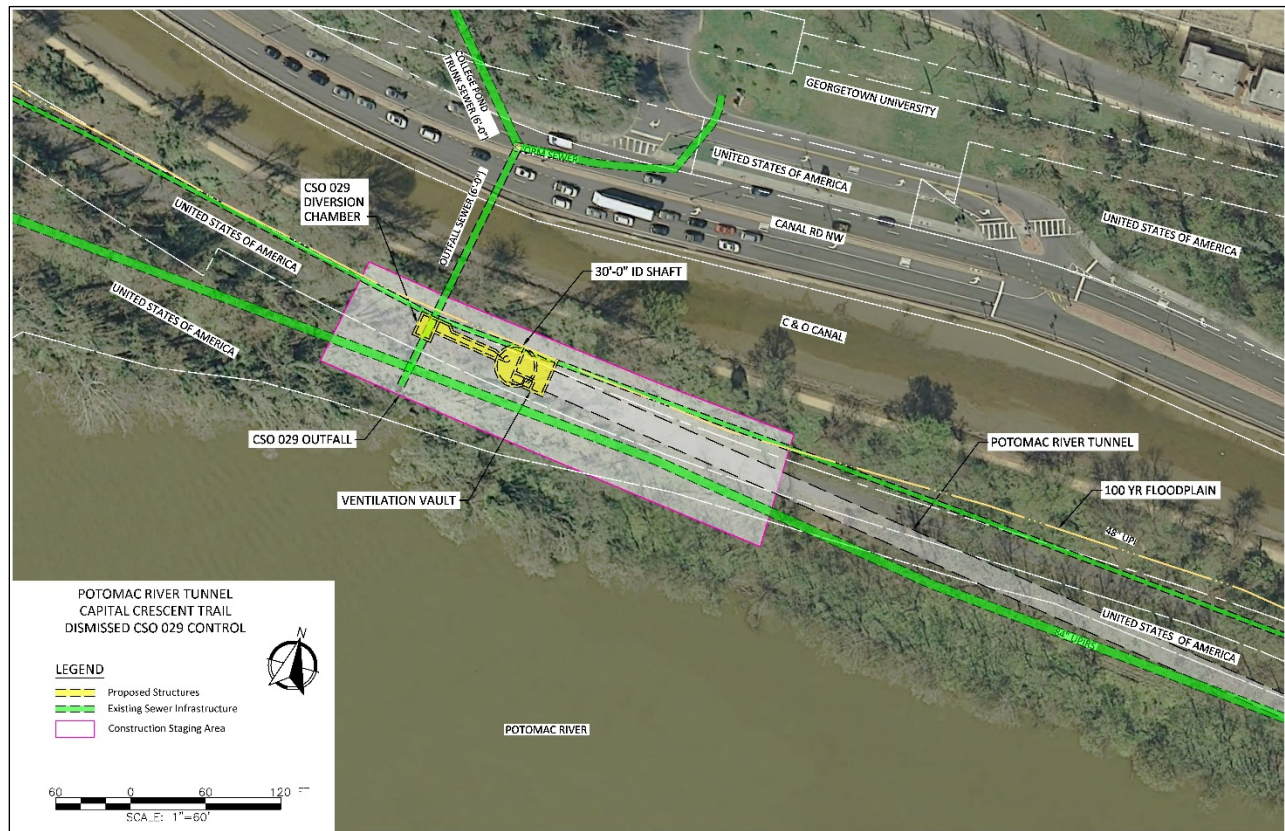


Figure 9: Dismissed CSO 029 Control Site Option along the Capital Crescent Trail

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APPENDIX C WETLAND STATEMENT OF FINDINGS

Prepared in cooperation with the District of
Columbia Water and Sewer Authority



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STATEMENT OF FINDINGS
FOR
EXECUTIVE ORDER 11990 (PROTECTION OF WETLANDS)

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
POTOMAC RIVER TUNNEL

National Mall and Memorial Parks
National Capital Region

Recommended:

Superintendent

Date

National Mall and
Memorial Parks

Certification of
Technical Adequacy and
Servicewide Consistency:

Water Resources Division

Date

Approved:

Regional Director

Date

National Capital Region

1.0 INTRODUCTION

Pursuant to the National Environmental Policy Act of 1969 (NEPA), the District of Columbia Water and Sewer Authority (DC Water), in cooperation with the National Park Service (NPS), are evaluating the proposed construction of the Potomac River Tunnel, a major component of DC Water's Long Term Control Plan (LTCP), also known as the DC Clean Rivers Project. The purpose of the project is to substantially reduce untreated discharges from the combined sewer system to the Potomac River by increasing combined sewer overflow (CSO) storage and conveyance capacity. The project is needed to reduce CSOs that contribute to water quality impairment of the Potomac River and ultimately the Chesapeake Bay; and to comply with the 2005 Federal Consent Decree, entered into by DC Water, the District of Columbia (the District), the Environmental Protection Agency (EPA), and the US Department of Justice, as amended January 2016.

Executive Order 11990 - Protection of Wetlands (published in 1977) requires the NPS and other federal agencies to evaluate the likely impacts of actions in wetlands. NPS Director's Order #77-1: *Wetland Protection* (effective October 2002) and Procedural Manual #77-1: *Wetland Protection* (reissued June 2016) provides NPS policies and procedures for complying with Executive Order 11990. This Statement of Findings was prepared per Director's Order #77-1: *Wetland Protection* for the proposed Potomac River Tunnel project and documents compliance with the NPS wetland protection procedures. A Statement of Findings has been completed because some of the proposed construction would take place in the Potomac River resulting in wetland impacts on NPS property.

2.0 PROPOSED ACTION

The proposed action involves construction of the Potomac River Tunnel and supporting infrastructure to provide control for seven CSO outfalls along the Potomac River. The project would include construction of diversion facilities to redirect CSOs from the existing combined sewer system to a new underground storage tunnel when the capacity of the existing sewer system is exceeded. Once diverted to the tunnel, excess flows would be conveyed by gravity to DC Water's Blue Plains Advanced Wastewater Treatment Plant to be treated before being discharged to the Potomac River. Other supporting infrastructure, including ventilation control facilities, emergency overflow structure(s), and drop, mining, and ventilation shafts would also be constructed. Implementation of the Potomac River Tunnel project would reduce CSO discharges to the Potomac River by 93% by volume and limit their frequency to an estimated four times in a year of average rainfall, resulting in significant water quality benefits.

Most of the construction activities required to complete the project would not affect wetlands. The tunnel would be constructed underground beneath any wetlands that may exist along the tunnel alignment, and a wetland delineation performed by Coastal Resources Inc. in 2017 did not identify any palustrine wetlands where construction is proposed at the ground surface. Portions of the Potomac River within the project area are considered riverine wetlands according to the Federal Geographic Data Committee (FGDC) Wetlands Classification Standard (2013). The FGDC Wetlands Classification Standard defines riverine wetlands as areas within a waterway of a depth of 2.5 meters (8.2 feet) or less at low water, or at the limits of emergent or woody vegetation extending beyond this depth (FGDC 2013). To identify riverine wetlands, NOAA nautical charts were used to determine approximate water depths within the Potomac River. **Figure 1** provides the extent of riverine wetlands within the Potomac River in the vicinity of the project area.

As part of the Potomac River Tunnel project, DC Water would construct an emergency overflow structure along the east bank of the Potomac River to provide an outlet to relieve the tunnel system when the capacity of the tunnel is exceeded. DC Water performed an assessment along the proposed tunnel alignment to identify potential emergency overflow structure sites with available open space along the waterfront, practicability for construction access and mobilization, and hydraulic practicability. After completing the assessment, and in coordination with the NPS, three emergency overflow structure site options were selected for evaluation in accordance with NEPA (**Figure 1**). Ultimately, only one option will be selected for construction of an emergency overflow structure for the Potomac River Tunnel. Also, due to low grade elevation, an emergency surge relief pipe is required to protect the low-lying area between CSO 024 and 028 from flooding due to transient flows within the tunnel system during extreme filling events. The emergency surge relief pipe would be constructed as part of the CSO 027 or CSO 028 Control.

Emergency Overflow Structure Option 1 at West Potomac Park (North) within National Mall and Memorial Parks has been identified as the preferred option and is the focus of the evaluation in this Statement of Findings. Construction of the preferred emergency overflow structure option would result in impacts that would require Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act permits from the US Army Corps of Engineers, Section 401 of the Clean Water Act water quality certification by the District Department of Energy and Environment and would require compliance with NPS Director's Order #77-1: *Wetland Protection*. It should be noted that although not the

preferred option, Emergency Overflow Structure Option 2 would also result in riverine wetland impacts if ultimately selected for implementation rather than Option 1. It should also be noted that due to the water depths where Emergency Overflow Structure Option 3 and the emergency surge relief pipe at either the CSO 027 Control or the CSO 028 Control would be constructed, these areas are considered deepwater habitat according to the FGDC Wetland Classification Standard (2013) and are therefore not subject to Director's Order #77-1: *Wetland Protection*. These structures would be subject to Section 10 of the Rivers and Harbors Act and Section 401 and 404 of the Clean Water Act.

Under the preferred emergency overflow structure option (Option 1), the structure would be combined with the construction of a shaft used to insert the tunnel boring machine and conduct tunnel mining operations. The majority of the overflow construction would occur landward of the Potomac River. This work would result in impacts to NPS property and resources, including reduced capacity for permitted and non-permitted activities at West Potomac Park, closures and / or detours of Ohio Drive SW and the Rock Creek Trail, increased traffic congestion along haul routes on Ohio Drive SW and Independence Avenue SW, removal of Japanese cherry trees and other landscape vegetation, and construction-related noise and visual impacts.

The emergency overflow structure would be constructed below grade except for the outlet, which would be partially exposed along the riverbank. The underground facility would be fitted with an approximately 200-foot horizontal weir to limit discharge velocities to the river, a baffle wall and bar screens to remove solids / floatables, bulkhead gates to isolate portions of the facility for maintenance, and tide gates to prevent backflow from the river to the tunnel system. To construct the overflow structure, a cofferdam would be installed to dewater and protect the construction area within the Potomac River. Cofferdam installation would occur behind a turbidity curtain to contain disturbed river bottom sediments within the construction area, as well as a marine life exclusion barrier to prevent aquatic species from entering the construction area. Once the cofferdam is installed and the construction area dewatered, sediment would be excavated to obtain the required design elevations. Excavated sediments would be tested for contaminants and properly disposed of at an appropriate location determined by the contractor and with the approval of DC Water. As part of the overflow structure construction, a riprap apron would be installed on the river bottom at the structure headwall for velocity dissipation and to reduce the potential for scour during tunnel overflow events.

Upon completion of construction, the landward portion of the site would be restored substantially to existing conditions, except for at-grade manholes and hatches to provide access to the operable portions of the facility for maintenance and repair. A planting plan would be implemented to replace trees and other vegetation removed for construction, roads and trails would be reconstructed, and the turf fields of West Potomac Park would be reestablished for permitted and non-permitted uses. Site restoration would be closely coordinated between NPS and DC Water.

3.0 SITE DESCRIPTION

Emergency Overflow Structure Option 1 would be constructed along the east bank of the Potomac River at West Potomac Park within National Mall and Memorial Parks. Water depths within the impact area range from approximately 1 to 2 meters (3 to 6 feet), and riprap is currently present for shoreline stabilization. Within the project limits, riverine wetlands consist of unconsolidated bottom habitat. Unconsolidated bottom habitat includes environments where the bottom substrate consists of fine grain sediments, sand, and mud. Biodiversity and productivity varies within these habitats depending upon depth, light exposure, temperature, sediment grain size, and abundance of microalgae and bacteria (Ocean Health Index 2015). In a final rule published in the Federal Register on August 17, 2017, the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) designated this portion of the Potomac River as critical habitat for the Chesapeake Bay Distinct Population Segment of the Atlantic sturgeon (*Acipenser oxyrinchus*) under the Endangered Species Act. In a letter dated July 27, 2018, NMFS concurred with the NPS determination that even though these species are likely to occur within the action area, the project is not likely to adversely affect the Atlantic or shortnose sturgeon and is not likely to destroy or adversely modify critical habitat of the Atlantic sturgeon. There are no other mapped habitat types or vegetative communities, such as essential fish habitat (NOAA Fisheries 2017) or submerged aquatic vegetation (VIMS 2016) within the limits of construction.



4.0 EVALUATION OF WETLAND FUNCTIONS AND VALUES

The riverine wetlands within the project area primarily function to provide freshwater habitat for fish and other wildlife. Unconsolidated bottom habitat typically supports high densities of clams, worms, crustaceans, and other benthic invertebrates; however, the upper Potomac River is not considered a shellfish harvesting area by the Maryland Department of the Environment (MDE 2015). Benthic microalgae are also present in this habitat when shallow enough that light can penetrate to the bottom (VIMS 2015). The organisms that dwell in this habitat are important to the overall food chain and diversity of the system. Also, as the Atlantic sturgeon and shortnose sturgeon (*Acipenser brevirostrum*) have been documented to occur in the Potomac River, which has been designated as critical habitat for the Atlantic sturgeon, riverine wetlands within the project area may also function as endangered species habitat. Other important functions associated with riverine wetland systems, such as flood flow alteration (storage of flood waters), sediment / toxicant retention, nutrient removal / retention / transformation, production export, and shoreline stabilization are not provided by the riverine wetlands within the project area. The Potomac River does have recreational value for certain water-based activities, such as canoeing and kayaking, and contributes to the visual and aesthetics qualities of the area.

5.0 IMPACTS TO WETLANDS

Construction of Emergency Overflow Structure Option 1 would result in approximately 27,375 square feet (0.63 acres) of short-term (temporary) minor adverse wetland impacts from construction activities required for dewatering and containment of sediments (i.e. cofferdams), and approximately 22,000 square feet (0.51 acres) of long-term (permanent) minor adverse impacts due to the placement of approximately 200 feet of riprap outfall stabilization for velocity dissipation and protection from scour (see **Figure 2**). The riprap apron would alter the roughness of the riverbed and remove a small portion of unconsolidated bottom habitat from within the wetland, but the lost habitat area is very small compared to the total amount of this type of habitat within the Potomac River, and may also provide habitat structures for aquatic organisms, such as juvenile fish. Also, the structure would harden 110 feet of the Potomac River shoreline, which has already been modified from a natural condition by riprap stabilization. Ultimately, these impacts are vastly outweighed by the substantial water quality improvements that would result from implementation of the project. It is anticipated that changes in local hydraulics and associated natural sediment transport processes of the Potomac River would be negligible.

6.0 JUSTIFICATION FOR THE USE OF WETLANDS

Construction of Emergency Overflow Structure Option 3 at CSO 022 would not result in riverine wetland impacts, as the Potomac River is considered deepwater habitat at that location based on water depths. See **Figure 3** for waterway / deepwater habitat impacts that would occur under Emergency Overflow Structure Option 3. Even though selecting Emergency Overflow Structure Option 1 would impact riverine wetlands, this option minimizes impacts in other ways that justify the use of wetlands. The emergency overflow structure location at CSO 022 is directly adjacent to Rock Creek and less than 200 feet from Thompson Boat Center. Overflows, though infrequent, would have a higher potential for effects on boaters, canoers, kayakers, etc., than would an overflow event at West Potomac Park, farther downstream from high volume nonmotorized use areas. Additionally, due to limited space at the CSO 022 outfall for construction inland from the river, greater temporary construction-related impacts to deepwater habitat would be necessary when compared with Emergency Overflow Structure Option 1. Furthermore, Option 1 is preferred over Option 2, which would have similar riverine wetland impacts (**Figure 4**), due primarily to greater site accessibility for construction activities.



Figure 2: Waterway / Riverine Wetland Impacts, Emergency Overflow Structure Option 1

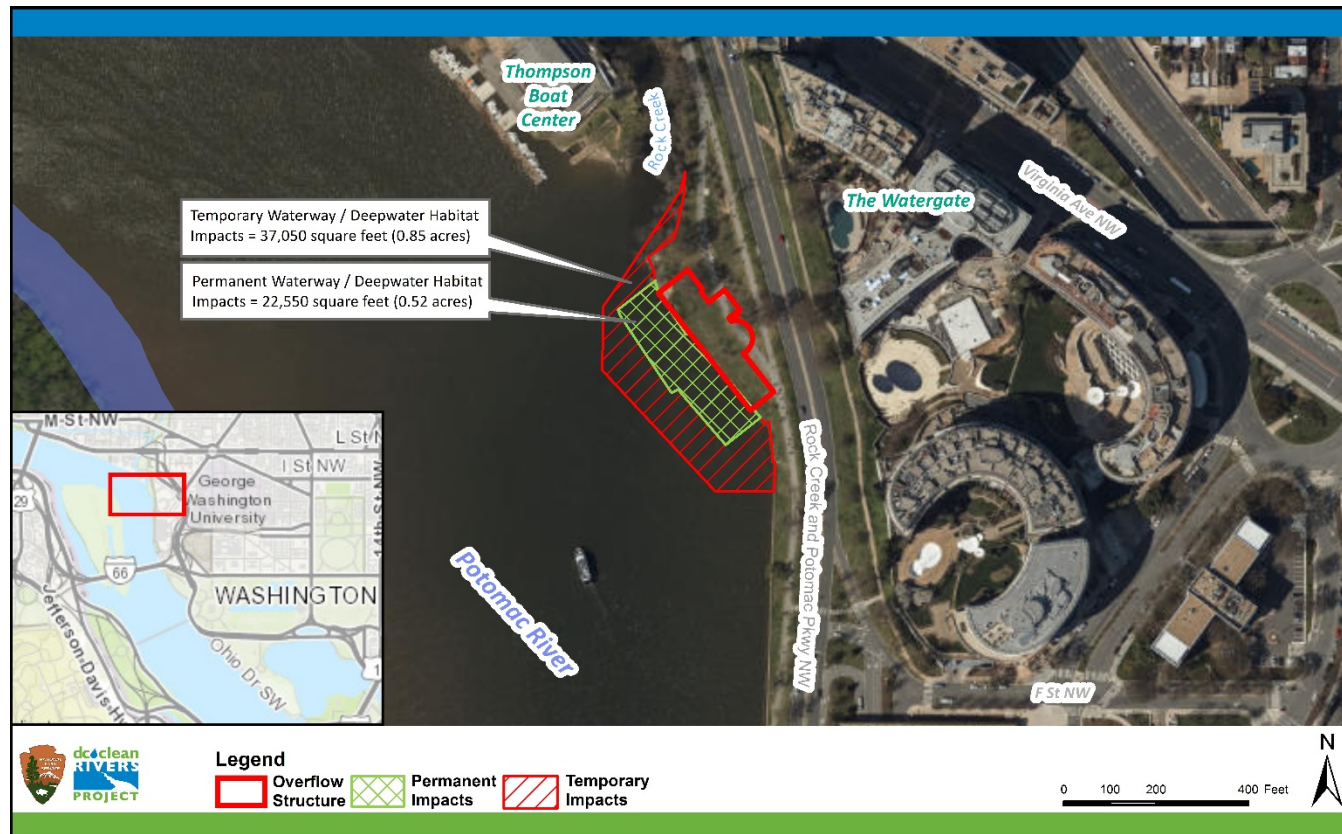


Figure 3: Waterway / Deepwater Habitat Impacts, Emergency Overflow Structure Option 3



Figure 4: Waterway / Riverine Wetland Impacts, Emergency Overflow Structure Option 2

7.0 MITIGATION

In accordance with Procedural Manual #77-1, NPS requires a 1:1 mitigation ratio for the replacement of lost wetland functions and values. Section 401 and Section 404 of the Clean Water Act permits authorizing impacts to waters of the US may also stipulate mitigation requirements of the US Army Corps of Engineers or the DC Department of Energy and the Environment. Construction of Emergency Overflow Structure Option 1 would result in approximately 22,000 square feet of unavoidable long-term impacts to riverine wetlands and would require mitigation as described above. Impacted wetlands consist of unconsolidated bottom habitat consisting primarily of fine-grained sediments. It would be difficult to develop a mitigation strategy to replace lost functions of this type of wetland habitat with a high probability of success. Therefore, in lieu of the required mitigation based on existing wetland function, NPS and DC Water propose to employ a similar approach to mitigate wetland impacts that was implemented for the Anacostia River Projects (NPS 2010). DC Water would provide funding to the NPS, who would be responsible for the implementation of 5 acres of invasive species management within riverine and floodplain areas of Rock Creek Park, with the objective of improving the functionality of wetlands on lands administered by the NPS. The invasive species removal would occur within the area of Rock Creek Park identified on **Figure 5**. The invasive species removal would take place during the appropriate time of year to maximize the potential treatment of one or more invasive plant species. Pesticides or other treatment types used for invasive species control would be required to meet NPS standards. Pesticide applications would be documented using Pesticide Use Logs.

8.0 CONCLUSION

As part of the Potomac River Tunnel project, DC Water would construct Emergency Overflow Structure Option 1 (the preferred option) along the east bank of the Potomac River at West Potomac Park within National Mall and Memorial Parks. The construction of Emergency Overflow Structure Option 1 would result in approximately 27,375 square feet (0.63 acres) of temporary impacts and approximately 22,000 square feet (0.51 acres) of permanent impacts to riverine wetlands. To compensate for the impacts, DC Water would provide funding to NPS for implementation of invasive species removal to improve the function of 5 acres of riverine wetland and floodplain areas within Rock Creek Park.



9.0 REFERENCES

Federal Geographic Data Committee (FGDC)

- 2013 Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.

Ocean Health Index

- 2015 Soft Bottom Habitats (subtidal). Accessed September 22, 2017.
<http://www.oceanhealthindex.org/methodology/components/soft-bottom-habitats>

Maryland Department of the Environment (MDE)

- 2015 Maryland's Shellfish Harvesting and Closure Area Map. Accessed September 22, 2017.
<http://mde.maryland.gov/programs/Marylander/fishandshellfish/Pages/shellfishmaps.aspx>

National Park Service (NPS)

- 2010 Statement of Findings for Floodplains and Wetlands. Anacostia River Projects. Long Term Combined Sewer Overflow Control Program. District of Columbia Water and Sewer Authority. Accessed September 29, 2017.
<https://parkplanning.nps.gov/projectHome.cfm?projectID=31539>

National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries)

- 2017 Summary of Essential Fish Habitat (EFH) Designation: Major Estuaries, Bays, and Rivers along the Northeast United States Coast. Accessed October 9, 2017. <https://www.greateratlantic.fisheries.noaa.gov/hcd/est.htm>

Virginia Institute of Marine Science (VIMS)

- 2015 Shallow Water Habitats. Accessed September 22, 2017.
http://web.vims.edu/bio/shallowwater/physical_characteristics/habitat_types.html
- 2016 2015 Distribution of Submerged Aquatic Vegetation in Chesapeake Bay and Coastal Bays. Accessed October 9, 2017. <http://web.vims.edu/bio/sav/sav15/index.html>

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APPENDIX D POTENTIALLY AFFECTED HISTORIC PROPERTIES & CULTURAL LANDSCAPES

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HISTORIC PROPERTIES POTENTIALLY AFFECTED BY THE POTOMAC RIVER TUNNEL

<u>Number</u>	<u>Historic Property</u>	<u>Location</u>	<u>Designation</u>	<u>Period of Significance</u>
N / A	The Plan of the City of Washington	Original boundaries of the Federal City	National Register (No. 97000332), DC Inventory	1790 – 1942
A	National Mall Historic District	Roughly bound by 3 rd Street NW / SW to the east, Independence Avenue SW, Raoul Wallenberg Place SW, CSX Railroad, Potomac River to the south and west, and Constitution Avenue NW, 17 th Street NW, White House Ground, and 15 th Street NW to the north	National Register (No. 66000031), DC Inventory	1791 – present (Criterion A); 1791 – 1965 (Criterion C)
B	East and West Potomac Parks Historic District	Roughly bound by Constitution Avenue NW to the north, the Potomac River to the west, the Washington Channel to the south, and 17 th Street NW to the east	National Register (No. 73000217), DC Inventory	1882 – 1997
C	Mount Vernon Memorial Highway	15.2-mile roadway that extends from Memorial Circle south to Mount Vernon	National Register (No. 81000079), DC Inventory, Virginia Landmarks Register	1929 – 1932
D	George Washington Memorial Parkway	Extends from Memorial Circle south to Mount Vernon, and north on both side of the Potomac River to the Capital Beltway	National Register (No. 95000605), Virginia Landmarks Register	1930 – 1966
E	Arlington National Cemetery Historic District	One Memorial Avenue, Arlington, Virginia	National Register (No. 14000146)	1964 – Present
F	Rock Creek and Potomac Parkway Historic District	Along the Potomac River and Rock Creek from the Lincoln Memorial to the National Zoo	National Register (No. 05000367), DC Inventory	1828 – 1951
G	Observatory Hill Historic District	23 rd and E Streets NW	National Register (No. 100000479), DC Inventory	1844 – 1961
H	Theodore Roosevelt Island National Memorial (Anacostan Island)	Potomac River west of Georgetown Channel	National Register (No. 66000869), DC Inventory, National Monument (NM)	1749 – 1833; 1861 – 1865; 1931 – Present
I	Foggy Bottom Historic District	Roughly bound by 25 th Street NW to the east, New Hampshire Avenue NW and H Street NW to the south, 26 th Street NW to the west, and K Street NW to the north	National Register (No. 87001269), DC Inventory	1870 – 1911
J	Georgetown National Historic Landmark District	Roughly bound by Reservoir Road NW and Dumbarton Oaks Park to the north, Rock Creek Park to the east, the Potomac River to the south, and Glover-Archbold Parkway to the west	National Register (No. 67000025), DC Inventory, National Historic Landmark (NHL)	1751 – 1950
K	C&O Canal NHP	Georgetown extending west from Rock Creek	National Register (No. 66000036), DC Inventory, NM, Contributes to Georgetown NHL District, Contributes to Potomac Gorge	9000 BCE-1500 CE; 1928 – 1924; 1938 – 1942; 1964 – 1965
L	The Potomac Gorge	Potomac River upstream from the Francis Scott Key Bridge	DC Inventory	18 th – 19 th cent.
1	Lady Bird Johnson Park	157-acre island located in the District of Columbia along the west shore of Potomac River, directly across from West Potomac Park in Washington, D.C.	Determined eligible for listing in the National Register	1915 – 1979
2	Cuban Friendship Urn	Reservation 332, Ohio Drive at 14 th Street Bridge SW, in West Potomac Park	National Register (No. 07001053), DC Inventory, Contributes to East & West Potomac Parks Historic District	1928

<u>Number</u>	<u>Historic Property</u>	<u>Location</u>	<u>Designation</u>	<u>Period of Significance</u>
3	Thomas Jefferson Memorial	Southeast side of Tidal Basin, bounded by Ohio Drive SW to east, East Basin Drive SW to south	National Register (No. 66000029), DC Inventory, Contributes to East & West Potomac Parks Historic District	1947
4	Franklin Delano Roosevelt Memorial	West Potomac Park, west end of Tidal Basin	National Register (No. 01000271), Contributes to East & West Potomac Parks Historic District	1997
5	Martin Luther King, Jr. Memorial	West Potomac Park, south of Independence Avenue SW	Contributes to East & West Potomac Parks Historic District	2011
6	Auditor's Complex (Bureau of Engraving and Printing)	231 14 th Street SW	National Register (No. 78003051), DC Inventory	1878 - 1912
7	Korean War Veterans Memorial	West Potomac Park, north of Independence Avenue SW	Contributes to East & West Potomac Parks Historic District	1995
8	Arlington Memorial Bridge (and Related Features)	Spans the Potomac River on the axis between the Lincoln Memorial in Washington, DC and Arlington House in Arlington, VA	National Register (No. 80000346), DC Inventory, Contributes to East & West Potomac Parks Historic District	1926 – 1932
9	Lincoln Memorial (Statue of Lincoln)	West Potomac Park within Lincoln Memorial Circle NW	National Register (No. 66000030), DC Inventory, Contributes to East & West Potomac Parks Historic District	1912 – 1922
10	John F. Kennedy Center for the Performing Arts	2700 F Street NW	Determined eligible for listing in the National Register	1964 – Present
11	Watergate Complex	2500, 2600, 2650, and 2700 Virginia Avenue NW; 600 and 700 New Hampshire Avenue NW	National Register (No. 05000540), DC Inventory	1964 – 1972
12	Francis Scott Key Bridge	Over the Potomac River, connects Georgetown in Washington, DC to Rosslyn in Arlington County, Virginia	National Register (No. 96000199), DC Inventory, Virginia Landmarks Register	1917 – 1939
13	Dodge Warehouses (and Adjacent Structures)	1000-1006, 1008, and 1010 Wisconsin Avenue NW, and 3205 K Street NW	DC Inventory, Contributes to Georgetown NHL District	Late-18 th – 19 th cent.
14	Brickyard Hill House	3134-3136 South Street NW	DC Inventory, Contributes to Georgetown NHL District	c. 1800
15	Grace Church (Grace Protestant Episcopal Church)	1041 Wisconsin Avenue NW	National Register (No. 71001001), DC Inventory, Contributes to Georgetown NHL District	c. 1866 – 1895
16	Duvall Foundry	1050 30 th Street NW	DC Inventory, Contributes to Georgetown NHL District	c. 1856 – c. 1870
17	West Heating Plant	1051 29 th Street NW	DC Inventory, Contributes to Georgetown NHL District	1942 – 1968
18	Henry McCleery House	1068 30 th Street NW	DC Inventory, Contributes to Georgetown NHL District	c. 1800
19	District of Columbia Paper Manufacturing Company (Paper Mill)	3255-3259 K Street NW	DC Inventory, Contributes to Georgetown NHL District	1900 – 1902
20	Bomford Mill (Pioneer Flour Mills)	3261 K Street NW	DC Inventory, Contributes to Georgetown NHL District	1845 – 1922
21	Potomac Boat Club	3530 Water Street NW	National Register (No. 91000786), DC Inventory, Contributes to Georgetown NHL District, Potomac Gorge	1908 – 1941

<u>Number</u>	<u>Historic Property</u>	<u>Location</u>	<u>Designation</u>	<u>Period of Significance</u>
22	Potomac Aqueduct Bridge Abutment and Pier	Potomac River west of Key Bridge	DC Inventory	1833 – 1962
23	Washington Canoe Club	3700 K Street NW	National Register (No. 90002151), DC Inventory, Contributes to Georgetown NHL District, Potomac Gorge	1904 – 1939
24	Wisconsin Avenue Bridge (High Street Bridge)	Wisconsin Avenue over the C&O Canal	DC Inventory, Contributes to Georgetown NHL District	1831

HISTORIC PROPERTIES POTENTIALLY AFFECTED BY GREEN INFRASTRUCTURE

Number	Historic Property	Sewershed	Location	Designation	Period of Significance
J	Georgetown National Historic Landmark District	027, 028, 029	Roughly bound by Reservoir Road and Dumbarton Oaks park to the north, Rock Creek Park to the east, the Potomac River to 1990 the south, and Glover-Archbold Parkway to the west	National Register (No. 67000025), NHL, DC Inventory	1751 – 1950
K	C&O Canal NHP	027, 028, 029	Georgetown extending west from Rock Creek	National Register (No. 66000036), DC Inventory, NM, Contributes to Georgetown NHL District, Contributes to Potomac Gorge	9000 BCE-1500 CE; 1928 – 1924; 1938 – 1942; 1964 – 1965
L	The Potomac Gorge (Potomac Palisades)	028, 029	Potomac River upstream from the Francis Scott Key Bridge	DC Inventory	18 th – 19 th cent.
M	Glover-Archbold Park	029	Foundry Branch from Potomac River to Van Ness Street NW	National Register (No. 06001260), DC Inventory	1890 – 1943
N	Georgetown Visitation Convent and Preparatory School	027, 029	1524 35 th Street NW	National Register (No. 900002146), Contributes to Georgetown NHL District	1819 – 1932
O	Washington Cathedral Historic District	029	Wisconsin Avenue at Massachusetts Avenue NW	National Register (No. 74002170), DC Inventory	1907 – 1990
12	Francis Scott Key Bridge	028	Over the Potomac River, connects Georgetown in Washington, DC to Rosslyn in Arlington County, Virginia	National Register (No. 96000199), DC Inventory, Virginia Landmarks Register	1917 – 1939
19	District of Columbia Paper Manufacturing Company (Paper Mill)	027	3255 – 3259 K Street NW	DC Inventory, Contributes to Georgetown NHL District	1900 – 1902
20	Bomford Mill (Pioneer Flour Mills; Flour Mill)	027	3261 K Street NW	DC Inventory, Contributes to Georgetown NHL District	1845 – 1922
24	Wisconsin Avenue Bridge (High Street Bridge)	027	Wisconsin Avenue over the C&O Canal	DC Inventory, Contributes to Georgetown NHL District	1831
25	Vigilant Firehouse	027	1066 Wisconsin Avenue NW	National Register (No. 71001008), DC Inventory, Contributes to Georgetown NHL District	1844 – 1883
26	Old Engine Company No. 5 (Bank of Columbia, Georgetown Town Hall & Mayor's Office)	027	3210 M Street NW	DC Inventory, Contributes to Georgetown NHL District	1796 – 1946
27	City Tavern	027	3206 M Street NW	National Register (No. 91001489), DC Inventory, Contributes to Georgetown NHL District	1796 – 1875
28	Georgetown Commercial Buildings, M Street and Wisconsin Avenue	027	2919, 3068, 3056, 3072, 3112, 3116 M Street NW & 1218, 1219, 1221, 1249, 1304, 1515, 1517, 1522, 1524, 1527, & 1529 Wisconsin Avenue NW	DC Inventory, Contributes to Georgetown NHL District	c. 1780 – 1820
29	Georgetown Market	027	3276 M Street NW	National Register (No. 71001000), DC Inventory, Contributes to Georgetown NHL District	1865

<u>Number</u>	<u>Historic Property</u>	<u>Sewershed</u>	<u>Location</u>	<u>Designation</u>	<u>Period of Significance</u>
30	Joseph Carleton House	027	1052 – 1054 Potomac Street NW	DC Inventory, Contributes to Georgetown NHL District	c. 1794
31	Forrest-Marbury House	027	3350 M Street NW	DC Inventory, National Register (No. 73002084), Contributes to Georgetown NHL District	1788 – 1790
32	Halcyon House (Benjamin Stoddert House)	028	3400 Prospect Street NW	National Register (No. 71001002), DC Inventory, Contributes to Georgetown NHL District	1787
33	Prospect House (Lingan-Templeman House)	028	3508 Prospect Street NW	National Register (No. 72001430), DC Inventory, Contributes to Georgetown NHL District	1788 – 1793
34	Quality Hill (John Thomson Mason House; Charles Worthington House)	027	3425 Prospect Street NW	National Register (No. 72001431), DC Inventory, Contributes to Georgetown NHL District	1797 – 1798
35	William Wilson Corcoran Store	027	1300 Wisconsin Avenue NW	DC Inventory, Contributes to Georgetown NHL District	1817
36	Barber-Caperton House (& Gazebo)	027	3233 N Street NW	DC Inventory, Contributes to Georgetown NHL District	c. 1813 – 1816; Gazebo c. 1830
37	St. John's Church, Georgetown	027	3240 O Street NW	DC Inventory, Contributes to Georgetown NHL District	Church, 1809; Rectory, 1875
38	Smith Row	027	3255 – 3267 N Street NW	DC Inventory, Contributes to Georgetown NHL District	c. 1815
39	Bodisco House (Clement Smith House)	027	3322 O Street NW	DC Inventory, Contributes to Georgetown NHL District	1815 – 1854
40	Cox's Row	027	3327 – 3339 N Street NW	DC Inventory, Contributes to Georgetown NHL District	c. 1817 – 1818
41	Smith-Bruce House	027	1405-11 34 th Street NW	DC Inventory, Contributes to Georgetown NHL District	c. 1810
42	Old Holy Trinity Church (Convent of Mercy)	027	3513-15 N Street NW	DC Inventory, Contributes to Georgetown NHL District	c.1787 – 1794
43	Georgetown University Healy Hall	028, 029	37 th and O Streets NW	National Register (No. 71001003), NHL, DC Inventory, Contributes to Georgetown NHL District	1879; 1899
44	Georgetown University, Old North	029	37 th and O Streets NW	DC Inventory, Contributes to Georgetown NHL District	c. 1795 – 1797
45	Georgetown University, Astronomical Observatory	029	Georgetown University	National Register (No. 73002087), DC Inventory, Contributes to Georgetown NHL District	1841 – 1844
46	Foxall-McKenney House	027	3123 Dumbarton Avenue NW	DC Inventory, Contributes to Georgetown NHL District	1819
47	Christ Church (& Rectory)	027	3112 & 3116 O Street NW	National Register (No. 72001421), DC Inventory, Contributes to Georgetown NHL District	Church, 1885 – 1887; Rectory, c. 1810
48	Bowie-Sevier House	027	3124 Q Street NW	DC Inventory, Contributes to Georgetown NHL District	c. 1800 – 1805
49	The Yellow House	027	1430 33 rd Street NW	DC Inventory, Contributes to Georgetown NHL District	c.1800

<u>Number</u>	<u>Historic Property</u>	<u>Sewershed</u>	<u>Location</u>	<u>Designation</u>	<u>Period of Significance</u>
50	The Yellow Tavern	027	1524 33 rd Street NW	DC Inventory, Contributes to Georgetown NHL District	c. 1795
51	Volta Laboratory (Alexander Graham Bell Laboratory; Bell Carriage House)	027	3414 Volta Place NW	DC Inventory, Contributes to Georgetown NHL District	1854 - 1922
52	Alexander Melville Bell House	027	1527 35 th Street NW	DC Inventory, Contributes to Georgetown NHL District	1854 – 1920
53	Georgetown Visitation Convent and Preparatory School – Monastery and Academy Building	027	1524 35 th Street NW	DC Inventory, Contributes to Georgetown NHL District, Contributes to Georgetown Visitation Convent and Preparatory School	Mid-19 th cent. - 1932
54	Georgetown Visitation Convent and Preparatory School – Chapel	027	1524 35 th Street NW	DC Inventory, Contributes to Georgetown NHL District, Contributes to Georgetown Visitation Convent and Preparatory School	1821 – 1932
55	Volta Bureau	027	1537-41 35 th Street NW (3417 Volta Place NW)	National Register (No. 0022080), NHL, DC Inventory, Contributes to Georgetown NHL District	1893 – 1922
56	Mackall-Worthington House	027	3406 R Street NW	DC Inventory, Contributes to Georgetown NHL District	1820
57	Western High School (Duke Ellington School of the Arts)	029	1698 35 th Street NW	National Register (No. 03000673), DC Inventory	1898 – 1978
58	Western High School Field Houses	029	1700 38 th Street NW	Determined eligible for listing in the National Register	1929 – 1932
59	Hillandale (Main Residence and Gatehouse)	029	3905 Mansion Court NW; 3905 Reservoir Road NW	National Register (No. 94001595), DC Inventory	1922 – 1968
60	Burleith Historic District	029	Whitehaven Parkway NW on the north, Reservoir Road NW on the south, 35 th Street NW on the east, and 39 th Street NW on the west	Determined eligible for listing in the National Register	1895 – 1939
61	Holy Rood Cemetery	029	2126 Wisconsin Avenue NW	Determined eligible for listing in the National Register	1832 – 1984
62	Whitehaven Parkway	029	Whitehaven Parkway between MacArthur Boulevard NW and Massachusetts Avenue NW	Determined eligible for listing in the National Register	1928 – 1950
63	Glover Park Historic District	029	Tunlaw Road NW on the north, Whitehaven Parkway and Holy Rood Cemetery on the south, Wisconsin Avenue NW on the east, Glover Archbold Park on the west	Determined eligible for listing in the National Register	1909 – 1955
64	Alban Towers (and Interiors)	029	3700 Massachusetts Avenue NW	National Register (No. 94001040), DC Inventory	1928 – 1929

SUMMARY OF RESULTS OF PHASE IA ARCHEOLOGICAL ASSESSEMENT AND PHASE IB SURVEY WITH RECOMMENDATIONS FOR THE POTOMAC RIVER TUNNEL

Component Number	Area	Rationale	Recommendations
1	Tunnel Corridor	Constructed 75–100 feet below surface	Create action plan to be implemented in cases of subsidence during construction
2	Tunnel Mining Site Option 1 -West Potomac Park (North)	Made land; no potential for late Pleistocene/early Holocene deposits; few intact deposits associated with temporary structures	No additional investigations
2	Tunnel Mining Site Option 2 -West Potomac Park (South)	Made land; no potential for late Pleistocene/early Holocene deposits; few intact deposits associated with temporary structures	No additional investigations
3	Emergency Overflow Structure Option 1 – West Potomac Park (North)	Made land; no potential for deeply buried late Pleistocene floodplain horizons within made land and in adjacent river	No additional investigations
3	Emergency Overflow Structure Option 2 – West Potomac Park (South)	Made land; no potential for deeply buried late Pleistocene floodplain horizons within made land and in adjacent river	No additional investigations
3	Emergency Overflow Structure Option 3 – CSO 022	Structure remains found at two locations; potential for buried bulkhead	Phase II NRHP evaluation
4	Ventilation Control Facility and UPIRS Diversion Structure	Known Historic period resources present; numerous additional Historic period structures mapped adjacent to the known site area	Phase II at any locations within and adjacent to known site 51NW120; Phase IB survey in areas adjacent to known archaeological site 51NW120
5	CSO 020 Control Option 1 – 23 rd Street NW / Constitution Avenue NW	Made land; no potential for late Pleistocene/early Holocene deposits	No additional investigations
5	CSO 020 Control Option 2 – Lincoln Memorial Volleyball Courts	Made land; no potential for late Pleistocene/early Holocene deposits	No additional investigations
6	CSO 021 Control	Proximity to Potomac River for Native American resources; mapped structures and wharves dating to the mid-nineteenth century	Completed
7	CSO 022 Control Option 1 – Waterfront / Existing Outfall	Structure remains found at two locations; potential for buried bulkhead	Phase II NRHP evaluation
7	CSO 022 Control Option 2 – Virginia Avenue NW / 27 th Street NW	Known Historic period resources present; mapped structures indicate high potential for additional Historic period resources	Phase IB survey east of 27th Street NW
8	CSO 024 Control and UPI Diversion Structure	Proximity to creek indicates high potential for Native American resources; mapped structures indicate high potential for Historic period resources	No further work if subsurface impacts confined to roadways; if not, Phase IB survey in non-roadway areas
9	CSO 027 Control Option 1 – K Street NW / Georgetown Waterfront Park (with or without emergency surge relief pipe)	Known Historic period and Native American archaeological site 51NW075 present; potential for docks, wharves, and bulkheads in river	Phase II NRHP evaluation (terrestrial) of 51NW075; evaluate results of terrestrial investigations to determine if underwater geophysical survey is needed
9	CSO 027 Control Option 2 – Georgetown Waterfront Park (with or without emergency surge relief pipe)	Known Historic period and Native American archaeological site 51NW075 present; potential for docks, wharves, and bulkheads in river	Phase II NRHP evaluation (terrestrial) of 51NW075; evaluate results of terrestrial investigations to determine if underwater geophysical survey is needed
10	CSO 028 Control (with or without emergency surge relief pipe)	Layer of soft-paste brick in three core profiles and artifact concentration in fourth at 7.5 feet below surface; Native American artifact in core at 13.5 feet below surface	Phase II NRHP evaluation (terrestrial); monitoring or geotechnical core extraction and analysis (submerged)

<u>Component Number</u>	<u>Area</u>	<u>Rationale</u>	<u>Recommendations</u>
11	CSO 029 Control Option 1 – Canal Road NW / Georgetown University Southwest Entrance	Layer of soft paste bricks at 16 feet below surface in core extracted at location of mid-nineteenth-century structure location; expanded construction area contains Historic period archaeological site 51NW112	Phase IB survey in expanded construction area; Phase II NRHP evaluation at diversion chamber
11	CSO 029 Control Option 2 – South of Georgetown University	Proximity to Potomac River for Native American resources	Phase IB survey
12	JBAB Connection	Geoarchaeological assessment identified buried terrestrial landform in close proximity to Anacostia River	Phase IB investigations did not locate archaeological resources. Section 106 consultation was concluded.

NPS-INVENTORIED CULTURAL LANDSCAPES POTENTIALLY AFFECTED BY THE POTOMAC RIVER TUNNEL

Lincoln Memorial Grounds

The Lincoln Memorial Grounds cultural landscape is composed of the grounds immediately surrounding the Lincoln Memorial, as well as other nearby areas designed as part of the West Potomac Park landscape including the Reflecting Pool, Rainbow Pool, radial roads, and Watergate Steps. The grounds were originally conceived as an element of the McMillan Commission's 1902 plan for the Federal City. From 1914 to 1933, designs for the grounds were refined and construction was completed. Several changes have occurred to the grounds, but much of the original design can still be recognized. The Lincoln Memorial Grounds cultural landscape is significant for its association with the McMillan Commission's design and the wider "City Beautiful" movement; racial justice, including the Civil Rights movement; as part of a citywide park system; as well as for its association with Abraham Lincoln and Martin Luther King, Jr. and for its design (NPS 1999).

Thomas Jefferson Memorial

Situated along the south boundary of the Tidal Basin, the 19.2-acre Thomas Jefferson Memorial cultural landscape is composed of the Neoclassical memorial and its adjacent grounds. The site was originally established as a memorial location in the McMillan Commission's 1902 plan for the Federal City. The memorial is significant as the nation's most important memorial to the country's third president, for its architecture, and as a key landmark within the monumental core of the District. The memorial and landscape's period of significance stretches from 1934 to 1943, beginning with the memorial and landscape's design development and ending with the memorial's dedication on April 13, 1943 (NPS 2003).

Memorial Avenue Corridor

The Memorial Avenue Corridor cultural landscape is a mile-long axial composition that includes Arlington Memorial Bridge, Memorial Circle, Memorial Avenue Bridge over the Boundary Channel, Memorial Avenue, and the entrance to Arlington National Cemetery at the Hemicycle. The corridor, almost entirely designed by the renowned New York City architecture firm of McKim, Mead, and White, was to serve as both "a monumental entry to the federal city and a formal, processional route to Arlington National Cemetery" (NPS 2004). The notable design exception is Memorial Circle, which was the work of Gilmore D. Clarke, an early parkway designer. The corridor's features are significant as "important elements in the neoclassical urban design of the National Capital as it evolved during the first third of the 20th century" (Mackintosh 1979).

East Potomac Golf Course

The East Potomac Golf Course is a contributing element to the East and West Potomac Parks Historic District. The golf course was initially conceived in 1911, and the original nine-hole course, designed by the well-known golf course architect Walter J. Travis, was constructed from 1917 to 1920. Two, nine-hole additions were constructed in 1923 and 1925. In the following years, the courses have undergone several changes, alterations, and updates. The landscape continues to retain integrity from the golf course's period of significance from 1917 to 1941 (NPS 2017).

Potomac Waterfront Section, Rock Creek and Potomac Parkway

The Potomac Waterfront Section of the Rock Creek and Potomac Parkway extends south from Virginia Avenue NW to the Belvedere, the historic terminus of Constitution Avenue. This section of the parkway is listed on the National Register as part of the Rock Creek and Potomac Parkway Historic District. An original element of the McMillan Commission's 1902 plan, the parkway was designed as a pleasure drive connecting Rock Creek Park, established in 1890, and Potomac Park, now known as East and West Potomac Parks, established in 1897. The parkway's design was revised several times, including revisions to better accommodate the automobile, before its completion in the 1930s. Significant as an early parkway in the District, as well as the United States, this section of the parkway is significant for its early design and construction dating to the 1930s, as well as its later design and alteration in relation to the construction of the Kennedy Center (NPS 2018).

Lady Bird Johnson Park

Lady Bird Johnson Park, originally known as Columbia Island, is a 157-acre island that was created between 1915 and 1930 in association with the construction Arlington Memorial Bridge. The park, which is within the District despite being on the west side of the Potomac River, is situated across the river from West Potomac Park. In the 1960s, as part

of the Johnson Administration's Beautification Program, landscaping of the entire island was undertaken following the planting plan developed by landscape architect Edward D. Stone, Jr. The park's period of significance is 1915 through 1979, from the island's original construction to the last known planting plan revision completed by Stone, Jr. (NPS 2005).

Theodore Roosevelt Island

Theodore Roosevelt Island is a naturally formed island with a long history, including as John Mason's estate and its occupation during the Civil War before it was made into a memorial to the 26th president. Landscape architect Frederick Law Olmsted, Jr. is primarily responsible for the designed landscape, which he envisioned would evolve into a "native 'climax' forest." The Theodore Roosevelt Memorial, located in the northern portion of the island, was designed by architect Eric Gugler, sculptor Paul Manship, and Lee Skillman, an NPS landscape architect (Fanning 1999).

POTENTIALLY AFFECTED NON-NPS-INVENTORIED CULTURAL LANDSCAPES

<u>Cultural Landscape</u>	<u>Location</u>	<u>Description</u>
George Washington Memorial Parkway	Extends from Memorial Circle south to Mount Vernon, and north on both sides of the Potomac River to the Capital Beltway	The George Washington Memorial Parkway is a scenic parkway initially envisioned as an element of the McMillan Commission's 1902 plan for the Federal City. The first section of the parkway, the Mount Vernon Memorial Highway, was constructed between 1929 and 1932. The remainder of the highway, located to the north of Arlington Memorial Bridge, was completed by 1965. The parkway is significant for its landscape architecture, as well as for its commemoration of George Washington and Clara Barton (Krakow 1995).
Mount Vernon Memorial Parkway	15.2-mile roadway that extends from Memorial Circle south to Mount Vernon	The Mount Vernon Memorial Highway, constructed between 1929 and 1932, is significant as the first parkway constructed by the United States government, and for its commemorative function connecting Arlington Memorial Circle to Mount Vernon, George Washington's estate. The memorial highway was, "designed and landscaped to maximize scenic, [a]esthetic, and commemorative qualities and continues to retain much of its originally intended character" (Mackintosh 1980).
Franklin Delano Roosevelt Memorial	West Potomac Park	The memorial was designed by Lawrence Halprin, with sculptures by Leonard Baskin, Neil Estern, Robert Graham, Thomas Hardy, and George Segal. Dedicated by President Clinton in 1997, the 7.5-acre memorial is situated next to the Cherry Tree Walk on the west side of the Tidal Basin. The memorial is comprised of four "rooms" that sequentially tell the story of the president's four terms in office. Primarily constructed of red South Dakota granite, the memorial also features several water features, landscaped areas, 10 bronze sculptures, and 21 quotations from the president inscribed throughout the memorial (CLF 2018a).
Plan of the City of Washington	Original 1791 plan for the Federal City, bound by the Potomac River and the Anacostia River	The Plan of the City of Washington, commonly referred to as L'Enfant's Plan, is the basis for the plan of the national capital, and many of its elements are still extant. L'Enfant's Baroque plan was composed of an orthogonal grid overlaid with radiating avenues, parks, and vistas. The plan was further improved by the McMillan Commission's 1902 design for the Federal City. Based on City Beautiful principles, the Commission's plan served as the blueprint for later improvements to the District (Leach and Barthold 1994).
Watergate Complex	2500, 2600, 2650, and 2700 Virginia Avenue NW; 600 and 700 New Hampshire Avenue NW	The Watergate Complex, constructed between 1964 and 1971, was designed by the Italian Modernist architect Luigi Moretti with associate architects Corning, Elmore, Moore, and Fischer, with the landscape design by landscape architect Boris Timchenko. Only three acres of the 10-acre site are occupied by buildings. The other 7 acres are separated into several distinct areas by the curvilinear and angular building footprints. These public, semi-public, and private areas are designed in a park-like setting, with features including open courtyards, flowers, pools, and fountains (CLF 2018b).
East and West Potomac Parks	Roughly bound by Constitution Avenue NW to the north, the Potomac River to the west, the Washington Channel to the south, and 17 th Street NW to the east	East and West Potomac Parks were created by a 30-year reclamation project by the U.S. Army Corps of Engineers that began in 1882. An 1897 Act of Congress reserved the reclaimed land for recreational use. The plan for the parks was a primary feature of the McMillan Commission. The parks are characterized by large turfed areas framed by mature landscape plantings, historic boulevards, and drives. The parks serve as the setting for various nationally significant memorials and landscape features including the Lincoln Memorial and Reflecting Pool, the Jefferson Memorial, the Franklin Delano Roosevelt Memorial, the Vietnam Veterans and Women's Memorials, and the Tidal Basin, among others (Bobeczko and Robinson 1998).

<u>Cultural Landscape</u>	<u>Location</u>	<u>Description</u>
John F. Kennedy Center for the Performing Arts	2700 F Street NW	The Kennedy Center, constructed between 1964 and 1971, was designed by Edward Durrell Stone, Jr. The grounds' landscape design was completed by Stone, Jr., with consulting landscape architects Sasaki, Walker & Associates. The landscape design for the "interior and podium areas of the building" was completed by landscape architect Lester Collins (NPS 1971). Although much of the Kennedy Center grounds have been altered since the 1970s, mainly by several large additions to the north and south of the building, several elements of the original design plan remain. The raised planting boxes with willow trees at the main terrace level are a key historic feature.
Francis Scott Key Memorial Park	Between M Street and the C&O Canal in Georgetown	This 1-acre park commemorates Francis Scott Key, writer of the "Star Spangled Banner." The park, designed by Oehme, van Sweden & Associates, was dedicated in 1993 and donated to the NPS. The park is designed around a sculpture of Key by Betty Mailhouse Dunston, set within a central plaza with a limestone pergola with wisteria. Vistas to the C&O Canal and the Potomac River are framed by the magnolia trees and perennials that encircle the plaza (CLF 2018c).
C&O Canal National Historic Park	Georgetown extending west from Rock Creek	The C&O Canal was originally constructed between 1828 and 1850. After the canal closed in 1924, it was purchased by the federal government in 1938 and improved by the Civilian Conservation Corps into a recreational greenway, eventually becoming a National Monument in 1961. Within the Potomac River Tunnel study area, the park is mainly characterized by a section of the canal, which in total measures over 22 miles in length, as well as the former towpath that is now used as a pedestrian trail (CLF 2018d).
McMillan Plan	Throughout Washington, DC	The McMillan Commission was comprised of designers considered leaders of their respective fields, including architect Charles McKim, architect Daniel Burnham, landscape architect Frederick Law Olmsted, Jr., and sculptor Augustus Saint-Gaudens. Senator James McMillan of Michigan served as commission chair and Charles Moore served as the commission's secretary. Using the City Beautiful principles popularized by the 1893 Columbian Exposition (each of the commission's members were involved in the planning and design of the exposition), the McMillan Commission created a 1902 plan for the Federal City. Improving upon L'Enfant's original plan, many of the plan's recommendations were implemented during the twentieth century, and the plan still serves as a guideline today for improvements to the Federal City (CLF 2018e).
Potomac River Landscape	From West Virginia highlands 385 miles southeast to the Chesapeake Bay	The Potomac River basin lies in five separate geological provinces: Appalachian Plateau, Ridge Valley, Blue Ridge, Piedmont Plateau, and Coastal Plain. The river has supported civilizations for centuries, and continues to support the District, as well as 12 smaller cities and towns throughout West Virginia, Pennsylvania, Virginia, and Maryland. The vernacular landscape is significant for its influence on multiple cities, including the District of Columbia (Zachary 1996).

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