National Park Service
U.S. Department of the Interior

Fort Dupont Creek, Fort Dupont Park
Washington, DC

FORT DUPONT CREEK
STREAM AND WETLAND RESTORATION PROJECT

ENVIRONMENTAL ASSESSMENT
AUGUST 2023

Prepared in partnership with the District of Columbia

DEPARTMENT OF ENERGY & ENVIRONMENT
GOVERNMENT OF THE DISTRICT OF COLUMBIA

GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

Note to reviewers and respondents: Comments on this EA may be submitted electronically at https://parkplanning.nps.gov/projectHome.cfm?projectID=68832 or you may mail written comments by October 4, 2023 to:

Superintendent
ATTN: Fort Dupont Creek Stream and Wetland Restoration Project
National Capital Parks – East
1900 Anacostia Drive, SE
Washington, DC 20020

Before including personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

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ACRONYMS AND ABBREVIATIONS

APE	Area of Potential Effects
ATV	All-Terrain Vehicle
AWRP	Anacostia Watershed Restoration Partnership
BANCS	Bank Assessment for Non-point source Consequences of Sediment
BCIV	Building Civil Permit
BMP	Best Management Practice
BOD	Biological Oxygen Demand
CCC	Civilian Conservation Corps
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CLOMR	Conditional Letter of Mapping Revision
CMP	Corrugated Metal Pipe
CR	Cultural Resource
CWA	Clean Water Act
DBH	Diameter at Breast Height
DC/District	District of Columbia
DC SHPO	District of Columbia State Historic Preservation Office
DDOT	District Department of Transportation
DO	Dissolved Oxygen
DOB	Department of Buildings
DOEE	District of Columbia Department of Energy and Environment
ESC	Erosion and Sediment Control
FEMA	Federal Emergency Management Administration
FGDC	Federal Geographic Data Committee
FIRM	Flood Insurance Rate Maps
IP	Implementation Plan
IPaC	Information for Planning and Consultation
MWCOG	Metropolitan Washington Council of Governments
NACE	National Capitol Parks-East
NCR	National Capital Region
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NNI	Non-Native Invasive species
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRDA	Natural Resources Damage Assessment
NRHP	National Register of Historic Places
PA	Projects Area

PALS	Post-Assisted Log Structures
PCB	Polychlorinated Biphenyls
PEM	Palustrine Emergent
PEPC	Planning and Public Comment
PFO	Palustrine Forested
plan/EA	Environmental Assessment
RI/FS	Remedial Investigation and Feasibility Study
RSC	Regenerative Stormwater Conveyance
SWMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WIP	Watershed Implementation Plan
WQD	Water Quality Division

1 Purpose and Need for Action

In partnership with the National Park Service (NPS), the District of Columbia Department of Energy and Environment (DOEE) is proposing stream and wetland restoration activities in the Fort Dupont watershed which consists of Fort Dupont Park (hereafter referred to as the Park) and a ribbon park outside the main unit of the Park. The Park is an administrative unit of National Capital Parks-East, located in southeast Washington, District of Columbia (the District). It is one of a number of NPS parks surrounding land on which Civil War era batteries and forts were built. These are collectively known as the Fort Circle Parks, and the Park is home to one of these defenses (NPS 2017). Fort Dupont, a six-sided earthen structure (hereafter referred to as the fort), was originally constructed with a surrounding moat. The moat remains largely intact, but with a large degree of overgrowth. The fort was named after Samuel F. DuPont, a Flag Officer who commanded the naval victory at Port Royal, South Carolina, in November 1861 (NPS 2017). The fort's earthworks can still be visited by accessing the picnic area on Alabama Avenue in the Park.

In the 1930s, the National Capital Planning Commission acquired the old fort and surrounding land for recreation. A golf course was constructed in 1947, now known as the Fort Dupont Golf Course. In 1970, the golf course gave way to the sports complex along Ely Place. The complex includes tennis and basketball courts, athletic fields, a softball diamond, and an indoor ice rink that offers skating throughout the winter season (NPS 2017a).

The Park encompasses approximately 376 acres and is the second largest urban park owned by the NPS in the District. The Fort Dupont watershed is an important subwatershed of the Anacostia River Watershed and encompasses approximately 443 acres, of which 85% is located on park property (MWCOG and USACE 2009). The proposed project site is located largely in the Park, but also extends to a location west of the Park along the Anacostia River that is a part of Anacostia Park. The project is bound by Ely Place and Ridge Road to the north, Alabama Avenue to the east and southeast, Massachusetts Avenue to the south, and the CSX Benning Yard to the west. Fort Dupont Park contains a diversity of culturally significant resources, recreational facilities, and uninterrupted natural forestland, which forms an integral part of the District’s overall tree canopy. The U.S. Environmental Protection Agency (USEPA) approved Anacostia River Watershed Implementation Plan (WIP) includes the Fort Dupont subwatershed for restoration actions such as stream restoration work.

The purpose of the project is to improve stream, floodplain, and wetland conditions in the Fort Dupont watershed. Specifically, the project aims to reconnect the existing eroded channels to the historic wetland/floodplain elevations, stabilize stormwater outfalls and streambanks to prevent export of sediment and associated nutrients, improve instream water quality and aquatic habitat conditions, remove fish barriers, preserve the existing riparian forest and minimize impacts to the maximum extent practicable, and enhance riparian conditions through establishment of native vegetative communities and invasive species control. The stream network has been divided into 9 project areas (PA-01 to PA-09) as shown in **Figures 1** and **3**. Stream and wetland restoration work would ensure the long-term stability of the stream and floodplain system while creating and maintaining aquatic and terrestrial habitat features and enhancing the riparian forest structure within the Park.

The need for the proposed project is due to excessive, concentrated stormwater flow from outside the Park boundaries entering the Park, and past alterations of the stream network and valley associated with land development within the Park, resulting in high rates of bank erosion and channel incising (downcutting)

along the stream. These high erosion rates lead to poor water quality and aquatic habitat conditions throughout the stream network, the loss of canopy trees, and excessive sediment loads being transported to the Anacostia River, an important subwatershed of the Chesapeake Bay. The severe bank erosion and channel incising has led to collapsing stormwater outfalls in the Park, which is a threat to the trail network and roadway infrastructure in and around the Park. In 2018, stormwater management BMPs, comprised of dry swales and bioretention areas, were constructed where feasible along Fort Dupont Drive, Fort Davis Drive, and the Activity Center parking area to increase the infiltration and treatment of road runoff. With the relatively recent implementation of these stormflow mitigation measures along the Park road network, appropriate stream design approaches and techniques and wetland restoration/enhancement implementation are proposed in order to further stabilize stormflow erosion effects and improve stream, floodplain, and wetland conditions. In addition, the stream and wetland restoration work in the Park will help the District government and NPS to meet their total daily maximum load (TMDL) commitments under the Phase II Chesapeake Bay Watershed Implementation Plan for nitrogen, phosphorus, and sediment.

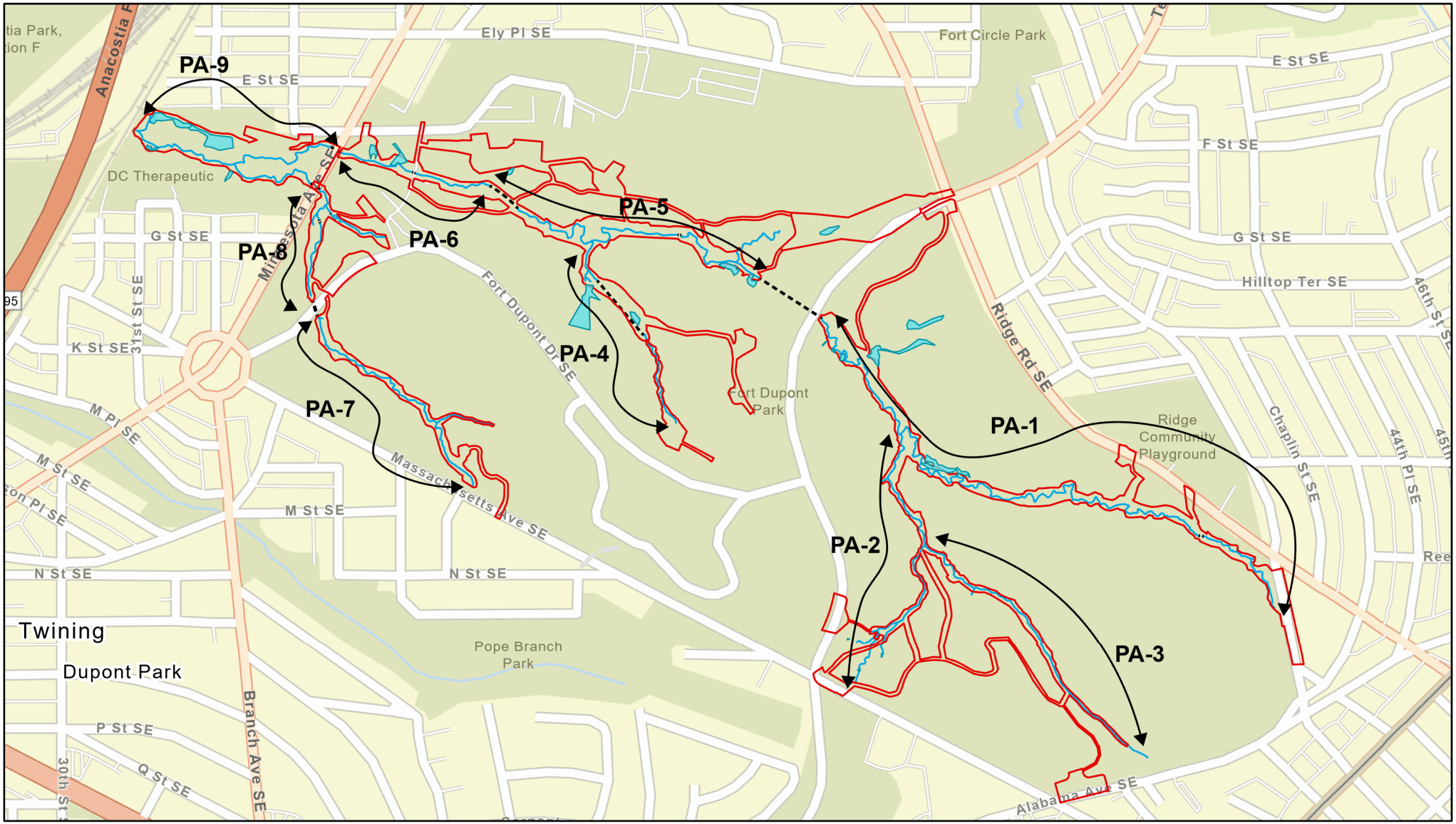

Figure 1: Fort Dupont Creek Stream and Wetland Restoration Project
Area of Potential Effects Map

Overview

Washington, D.C.
July 2023

APE (Direct effects)
Stream
Culverts
Wetlands

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N

0 600 1,200
Feet

1.1 Issues and Impact Topics Retained for Detailed Analysis

The project team, comprised of representatives from NPS and DOEE, identified specific issues and concerns during the internal project scoping process. Issues and concerns were retained for detailed analysis in this Environmental Assessment (plan/EA) and are included in the impact topics discussed in Section 3 Affected Environment and Environmental Consequences. Brief descriptions of the issues and impact topics retained for detailed analysis are provided below along with a summary justification.

- **Historical Structures and Cultural Landscapes:** The proposed project would require vegetation clearing, excavation, and grading to mitigate stream channel erosion and restore wetlands, which could potentially impact historical structures, if present, and the Fort Dupont Park cultural landscape. These issues are analyzed in Section 3 under Historical Structures and Cultural Landscapes.
- **Visitor Use and Experience:** The proposed project would temporarily disrupt vehicular and pedestrian traffic and would require maintenance of traffic trail closure. Construction activity and construction-related noise would also occur in the Park that may temporarily detract from the visitor experience. This issue is analyzed in Section 3 under Visitor Use and Experience.
- **Water Quality:** High rates of erosion in the Fort Dupont watershed contribute to the pollution of the Anacostia River, which is a tributary of the Chesapeake Bay. The proposed stream and wetland restoration would need to be effective in reducing watershed pollutants such as sediment and associated nutrients. This issue is analyzed in Section 3 under Water Quality.
- **Wetlands and Streams:** The proposed project would impact wetlands and streams in the nine project areas in order to implement the proposed restoration approaches. Although vegetation removal, excavation, grading, and placement of fill materials during construction would temporarily reduce stream and existing wetland functions, the proposed restoration approaches are expected to result in substantial improvements to stream and wetland functions. These issues are analyzed in Section 3 under Wetlands and Streams.
- **Vegetation:** Access roads, staging and stockpiling areas, and the stream and wetland restoration would require selective tree removal in forested areas of the nine project areas and removal of existing, partially fallen trees along the stream banks due to channel widening. Native trees would be replanted in areas cleared for construction access and grading to mitigate for the trees that are removed. This issue is analyzed in Section 3 under Vegetation

1.2 Impact Topics Dismissed from Further Analysis

Floodplains

Executive Order 11988, Floodplain Management, requires all federal agencies to evaluate the potential effects of actions it may take in a floodplain. Director's Order #77-2 and Procedural Manual #77-2 guide the NPS's compliance with this Executive Order. In the Procedural Manual for DO #77-2, floodplains are defined as "lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands and areas subject to temporary inundation by a regulatory flood" (NPS 2003). The Federal Emergency Management Agency produces Flood Insurance Rate Maps (FIRM) to help communities understand their risk of flooding. PA-09 is located in Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps 11001 0039C (DC Atlas 2016). Most of PA-09 is located within the 100-year or 500-year flood zone. **Figure 2** shows where the mapped flood zones impact PA-09.

Typical functions and values of floodplains consist of flood flow attenuation alteration (slows high energy water), sediment stabilization (keeps sediment in place), and toxicant retention (reduces ability of toxic material from moving downstream). Healthy floodplains create ecological biodiversity and provide habitat for plant and animal communities. Fort Dupont Creek in PA-09 currently has diminished floodplain function due to the uncontrolled stormwater flows in the project area. During storm events, the deepened stream channel erodes the streambed further from its banks and its natural floodplain causing excessive sediment and pollutants to move downstream within the channel.

The proposed project would benefit floodplain functions and values and would not adversely impact infrastructure or human health and safety. As part of the design process, hydrologic and hydraulic modeling would be completed in accordance with applicable FEMA and DOEE regulations to determine whether the proposed project would change the mapped floodplain limits and base flood elevations and to confirm that the project is consistent with Director's Order #77-2. All required approvals and permits would be obtained. Therefore, preparation of a Floodplain Statement of Findings is not required for this project.

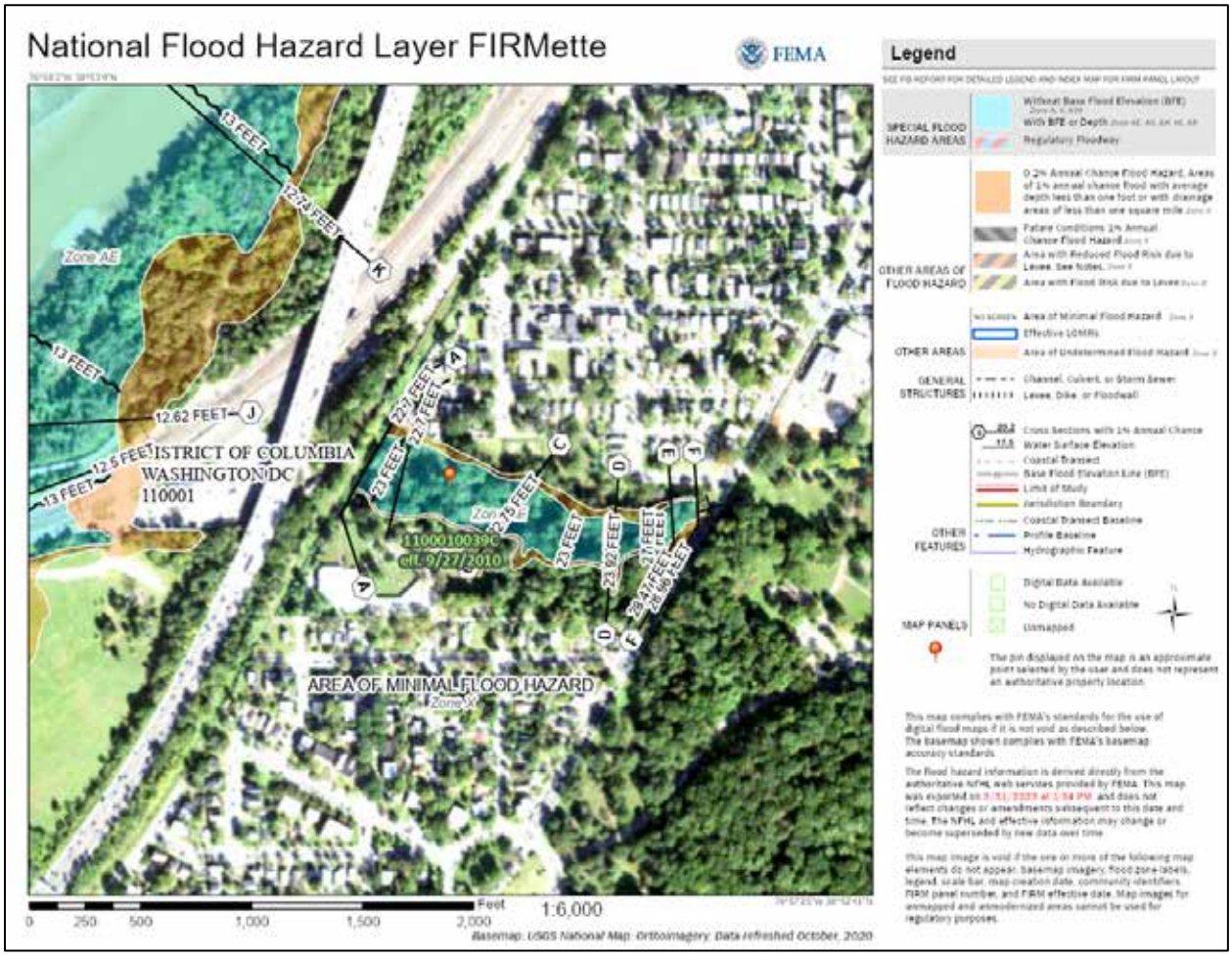

Figure 2. FEMA FIRMette for PA-09

Archeological Resources

A Phase I Archeological Investigation (Berger, 2019) of the project areas was completed, which included a Geographic Information System-based elevation analysis, a targeted geomorphological investigation, and a targeted shovel test survey of the APE. Completion of a Phase IA archeological investigation resulted in the determination that five PAs had the potential to contain significant archeological resources. In these PAs (PA-01, PA-05, PA-06, PA-08, and PA-09), shovel tests identified six archeological sites and one artifact scatter. All of the identified sites are considered insignificant resources and ineligible for listing in the National Register of Historic Places (NRHP). Sites that are not eligible for listing in the NRHP are not considered resources in National Environmental Policy Act (NEPA) impact analyses; therefore, this impact topic was not analyzed in the EA. If previously unidentified archaeological artifacts are identified during construction, all work involving subsurface disturbance in the area of the discovery will stop immediately, and the NPS and District of Columbia State Historic Preservation Office (DC SHPO) will be notified.

2 Alternatives

2.1 Introduction

This section describes the proposed alternatives to mitigate stream channel erosion and collapsing stormwater outfalls within Fort Dupont Park and institute wetland restoration along streams within the Park. **Figure 3** provides a location map depicting the nine project areas (PA-01 to PA-09) and **Figures 4-9** illustrate the Alternative B proposed restoration approaches by project area. **Tables 1, 2,** and **3** quantify Alternative B's proposed restoration approaches and types of construction access and associated staging/stockpiling areas by project area, respectively. The chapter also addresses construction methods and mitigation measures. The National Environmental Policy Act (NEPA) requires federal agencies to evaluate a range of reasonable alternatives and provide an analysis of impacts the alternatives could have on the natural and human environment. Section 3, Affected Environment and Environmental Consequences, presents the results of the impacts analyses.

2.2 Alternative A: No Action Alternative

Alternative A, the no action alternative, represents the continuation of current management. The no action alternative is required under NEPA to compare feasible alternatives to existing conditions. Under the no action alternative, systems would continue to operate as they have been, under their current conditions, and no restoration work would occur in any of the project areas (PA-01 to PA-09). High rates of streambank erosion causing incising (downcutting) stream channels and collapsing stormwater outfalls would continue, as well as the resulting excessive sediment transport to the Anacostia River and loss of canopy trees. Aquatic and riparian habitat would continue to degrade, and barriers to fish passage would remain. Blocked culverts, and trash and debris buildup would also continue throughout the project areas.

2.3 Alternative B: Proposed Action and NPS Preferred Alternative

Several restoration approaches were considered and evaluated for how well each met the purpose at each project area, while minimizing natural, cultural, and historical resource impacts to develop Alternative B. These approaches included floodplain reconnection, valley restoration, natural channel design, and regenerative stormwater conveyance (RSC). After the assessment of site conditions, it was determined that a suite of restoration approaches is necessary at each project area to better meet site specific goals, address specific site constraints, and minimize impacts related to implementation. Fine-tuning of the restoration approaches at each project area will occur during the design process. The proposed restoration approaches are described below and will be applied to the specific project areas for which they are identified and outlined in **Figures 3-9 and Table 1**.

Alternative B was identified as the proposed action and is the NPS preferred alternative. Under Alternative B, NPS would allow several restoration approaches to address the purpose and need and variable conditions and constraints throughout the project areas. The proposed restoration approaches throughout the project areas are founded on a process-based restoration approach. Process-based restoration approaches focus on addressing the root cause of the impacts and reestablish natural stream and floodplain processes to support various aquatic and terrestrial habitats, primarily through floodplain connection and wetland enhancement wherever possible.

The following section summarizes each proposed restoration approach incorporated into Alternative B, designed to ensure channel stability, while creating and maintaining aquatic and terrestrial habitat features and enhancement of the riparian forest structure.

2.3.1 *Base Flow Channel/Regenerative Stream Design*

A baseflow channel/regenerative stream design is a restoration approach similar to the Rosgen Priority 1 (Rosgen, 1997) approach that involves replacing the incised channel with a new, stable stream at the existing floodplain elevation to create a stream and wetland complex with the most potential for long-term stability, while minimizing impacts to adjacent resources within the stream valley. This approach includes significant adjustments to the channel cross section and profile but only requires modification to the stream planform (overall shape as appears in a map view) when avoiding or protecting an existing natural resource.

The proposed channel cross section dimensions of each instream grade control structure are sized to convey the 'normal' base flow (a stream flow supported by groundwater) within a channel. During small, but frequent storm events where increased flows are delivered to the project areas, the increased water within the baseflow channel spills out onto the adjacent vegetated floodplain. This results in a loss of energy due to a slower, broader, and shallower flow with a comparable reduction in erosive forces that cause channel adjustment and sediment capture and transport. The constructed, instream grade control structures are proposed at specific locations along the stream and/or designed in series to maintain continuous water surface elevations with minimal plunging flows below each. The top elevation of each structure is designed to match the existing top of bank elevation to minimize disturbance and maintain maximum floodplain connectivity. By reconnecting the channel to its adjacent floodplain, flows are more frequently delivered to the adjacent vegetated systems, which capitalizes on the natural floodplain functions that are critical to ecosystem health, including sediment trapping, material processing, reduction in downstream flooding, increases in concentration time of floodwaters, and reduction in stormflow volumes through infiltration, evaporative losses, and depressional storage. Furthermore, channel overflow contributes to groundwater recharge and maintenance of typical summer low stream flows which provides support for wetland and vernal pool hydrology and ecology, suppression of non-native invasive plant species, and increased micro-habitat diversity.

The stream layout planform (overall shape as appears in a map view) will remain primarily within the existing channel to utilize the over-widened existing channel extents and associated open corridor that has developed over years due to channel enlargement. This will minimize impacts to the riparian forest and wetlands. Minor alignment changes may be necessary to provide a more stable stream shape in specific locations.

2.3.2 *Regenerative Stormwater Conveyance (RSC)*

In several locations within the project areas, steep confined sections of channel are located immediately below a stormwater outfall. At these locations, the RSC approach involves filling the existing enlarged outfall channel with sand and mulch and building a series of rock structures to form a series of aquatic pools to help maintain the channel bed at a higher elevation and allow the stormwater to seep into the sand and mulch. This approach provides energy dissipation and stormflow conveyance from the outfall to the receiving channel of Fort Dupont Park, both stabilizing the channel and improving water quality. Similarly, the RSC approach can be used where the stream channel transitions to an existing culvert pipe.

2.3.3 *Stage 0/Wetland Complex*

Where site conditions allow, the Stage 0/wetland complex restoration approach is proposed to restore the physical, chemical, and biological processes of a healthy, resilient stream and wetland ecosystem. The term "Stage 0" refers to a time when a stream valley was occupied by a forested wetland complex with many interweaving flow paths and no defined single channel. The Stage 0/wetland complex restoration approach can be accomplished by either filling-in the incised channel to reconnect to the existing floodplain or lowering the existing floodplain to re-activate the historical floodplain; installing valley wide, wood grade controls (e.g., floodplain log sills); rough floodplain grading to provide low spots for water to collect; and planting the restored floodplain with native riparian and wetland species.

When this restoration is accomplished through the lowering of the floodplain, often referred to as legacy sediment removal, the existing stream valley trees are cut down with the grading operation. When this restoration is accomplished through the filling of the stream channel, upland tree species unable to adapt to the wetter floodplain condition will not survive post-restoration and gradually die off. In either scenario, the tree materials are left within the wetland floodplain limits to provide floodplain roughness and support habitat diversity.

This approach restores the floodplain-wide valley bottom, and allows natural erosion, deposition, and channel forming processes to create, maintain, and support resilient instream, wetland, and floodplain habitats that support both aquatic and terrestrial organisms. Benefits of a Stage 0/wetland complex restoration approach includes reducing the flow energy and preventing excess sediment and nutrient pollution downstream by spreading out flows across the floodplain within multiple flow paths.

2.3.4 *Low-tech Process-based Restoration*

A low-tech process-based restoration approach is defined as a cost-effective, hand-built solution that helps repair degraded streams through the addition of wooden structures across the stream channel called Post-Assisted Log Structures (PALS) simulating a natural log jam. The goal of this self-sustaining approach is to roughen the flowpath to slow down the flow and cause deposition of organic matter and sediment on the streambed to spread out flows, thus raising local groundwater, and reducing channel bed and bank erosion.

The locations for this approach are proposed on smaller channels in locations where construction access is severely limited due to natural resources and/or steep topography. Because this approach relies on hand installed wood structures, access can be achieved without impacts related to the movement of large construction vehicles and machinery and by utilizing existing park trails thus avoiding and/or minimizing impacts to riparian forest and wetland resources.

2.3.5 *Channel Realignment/Oxbow Wetland Depressions*

Channel realignment involves modifying stream dimensions and flow paths to provide a more stable and complex shape. For this approach, the existing channel is filled with soil to raise it within a few inches above and below the existing floodplain to provide topographic heterogeneity and provide additional protection against channel abandonment and formation of a new flow path through the pre-existing channels. Then a new channel is excavated to meet the proposed dimensions and flow path. In some areas, realignment of the channel allows a shift away from steep, eroding banks and facilitates reconnection to the floodplain.

In conjunction with channel realignment, oxbow wetland depressional features will be left within the filled

channel areas at intermittent intervals to further enhance topographical variation in the floodplain. Woody debris will be added to these oxbow wetland depressional features to provide additional protection against possible abandonment and formation of a new flow path through the filled channel areas and to enhance habitat diversity.

2.3.6 *Storm Sewer Pipe Daylighting*

Daylighting of a storm drain pipe is defined as the removal of a closed system pipe and exposing the storm flow to the surface rather than keep these flows within the existing storm drain infrastructure. By bringing water to the surface, it is being slowed, filtered, and treated, beneficially used by vegetation, and infiltrated, restoring all the natural stream processes.

2.3.7 *Culvert Replacement*

Culvert replacement, a supporting component of the above-described restoration approaches, is recommended to address degraded pipe and concrete box culvert conditions and to integrate with the stream restoration in the project areas. For example, significant gaps between existing corrugated metal pipes (CMP) are causing the ground above the pipe to collapse, resulting in multiple large holes at the ground surface. At these locations, it is proposed to replace the damaged pipes with a pipe arch culvert at a higher stream elevation to provide a natural stream bed for aquatic organism passage (e.g., fish) while also matching the conveyance capacity of the existing pipe. Where existing concrete box culvert inverts are lower than the proposed stream channel elevation, it is proposed to replace with a concrete box culvert at the higher stream elevation to allow for aquatic organism passage while also matching the conveyance capacity of the existing pipe.

Table 1. Summary of Proposed Restoration Approaches by Project Area

Project Area	Proposed Restoration Approach	Quantity (feet)
PA-01	Low-Tech Process Based Restoration – Hand Installed Post Assisted Log Structures (PALS)	340
	Baseflow Channel/Regenerative Stream Design	3,390
	Channel Realignment/Oxbow Wetland Depressions	2,310
	Regenerative Stormwater Conveyance (RSC)	300
	Storm Drain Daylighting	155
PA-02	Low-Tech Process Based Restoration – Hand Installed Post Assisted Log Structures (PALS)	900
	Base Flow Channel/Regenerative Stream Design	950
	Channel Realignment/Oxbow Wetland Depressions	600
PA-03	Low-tech Process-based Restoration (PALs)	1,700
PA-04	Low-tech Process-based Restoration (PALs)	440
	Baseflow Channel/Regenerative Stream Design	250
	Stage 0/Wetland Complex	300
	Regenerative Stormwater Conveyance (RSC)	375
PA-05	Baseflow Channel/Regenerative Stream Design	2,070
	Channel Realignment/Oxbow Wetland Depressions	700
	Regenerative Stormwater Conveyance (RSC)	60
	Culvert Replacement	150
PA-06	Baseflow Channel/Regenerative Stream Design	2,820
	Regenerative Stormwater Conveyance (RSC)	150
	Storm Drain Daylighting	130
	Culvert Replacement	20
PA-07	Low-tech Process-based Restoration (PALs)	240
	Baseflow Channel/Regenerative Stream Design	1,320
	Channel Realignment/Oxbow Wetland Depressions	150
	Stage 0/Wetland Complex	150
	Regenerative Stormwater Conveyance (RSC)	150
PA-08	Baseflow Channel/Regenerative Stream Design	650
	Stage 0/Wetland Complex	500
	Regenerative Stormwater Conveyance (RSC)	160
PA-09	Baseflow Channel/Regenerative Stream Design	120
	Stage 0/Wetland Complex	1,000
	Regenerative Stormwater Conveyance (RSC)	70
Note: Refer to **Figures 4, 6, and 8** for visual representation of proposed restoration locations within each project area.		

2.3.8 *Construction Method*

Alternative B would require the use of heavy equipment in most project areas to conduct clearing and removal/disposal of unwanted vegetation; removal of trees in poor condition along the top of the stream channel bank and in legacy sediment removal areas using the stage 0/wetland complex restoration approach; and transportation, installation, and grading of restoration materials. **Figures 5, 7, and 9** identify proposed construction activities for each project area. **Table 2** quantifies the proposed type of construction access and associated staging/stockpiling areas by project area and by the park conditions each are proposed to be located (i.e., existing trail, abandoned road, invaded forest, etc.).

For PA-01 through PA-09, material delivery would originate from surrounding public right-of-way and be delivered to the site primarily by dump truck. Temporary construction access would be needed so that heavy construction equipment can access the stream channels, deliver materials, and haul away excess materials and debris. Construction of stream restoration typically occurs from upstream to downstream. Material being transported to the site for use in the restoration may be stored in a staging and stockpile area at the upstream or downstream end of the channel along a nearby roadway or in a parking area, while affirming that appropriate erosion and sediment controls are in place. This would prevent damage to the surrounding forest and floodplain along the stream. Construction and erosion and sediment control best management practices (BMPs), such as silt fences or wattles, would be installed prior to the initiation of work to manage any runoff that may occur due to site activities. After each construction phase is complete, all construction access would be returned to existing trail conditions, be part of the stream or wetland restoration, or be decompacted, covered with topsoil and mulch, and seeded and/or planted with native species.

For baseflow channel/regenerative stream design, regenerative stormwater conveyance areas, channel realignment/oxbow wetland depressions, filling of the stream channel would occur from upstream to downstream. For baseflow channel/regenerative stream design and regenerative stormwater conveyance areas, the sand and woodchip mix placed in the stream channel may also be used as a temporary access path (i.e., in-stream construction access) for the construction portion of the project in order to minimize impacts on the surrounding forest. For channel realignment/oxbow wetland depressions, the existing channel is filled with soil and a new channel is excavated with construction access from a mulch construction access along the stream channel. Clear water diversions, typically consisting of bypass pumping, would be used to pump water around the section of the stream under construction. After the fill material is in place, restoration would occur from the downstream end of the stream channel and move up the stream in successive sections until construction is completed.

For low-tech process-based restoration approach, construction would be limited to hand installation methods and temporary construction access limited to all-terrain vehicles (ATVs). This results in minimal disturbance to surrounding riparian area during implementation by maneuvering around existing trees with low impact ATVs.

Construction access locations begin at surrounding public rights-of-way then target maintained grass/open areas, existing trails, abandoned roads, areas of dense non-native invasive vegetation, and in-stream access to construct the stream and wetland restoration. These previously disturbed park conditions were targeted to limit or avoid new disturbance and tree loss. No forest clear cutting is proposed for construction access. **Table 2** breaks down the park conditions targeted for each proposed construction access type. The following park conditions and level of previous and potential new disturbance is described below:

- “Existing Trails” are existing paths within Fort Dupont. The paths were previously disturbed by visitor use. Any new disturbance would be increased soil compaction and trimming tree limbs.
- “Abandoned Road” are unmaintained roads used for past park maintenance access that have begun revegetation with smaller shrubs and trees. The roads were previously disturbed by past access and clearing. New disturbance would be increased soil compacted, clearing vegetation, and removing any smaller trees within the footprint of the abandoned road to re-establish access.
- “In-Stream” are areas within the stream channel proposed for restoration and will also be used as a temporary access path. The stream channel will already be impacted by restoration and in-stream access also reduces the impacts to accessing through the forested riparian area.

- "Forested" are forested park areas. Impacts would be new disturbance but are minimized and avoided by using access for multiple projects and appropriately sizing the access to match construction equipment. In addition, proposed construction access paths through the forest were field located to avoid and minimize impacts to trees (i.e., locating paths to remove dead, diseased, and NNI trees) and wetlands. Protection measures such as hardwood mulch and hardwood mats will be used to minimize soil compaction and impacts to tree roots and wetlands.
- "Non-native Invasive Species Invaded Forest" are forest patches invaded with NNI that are actively suppressing trees and inhibiting native species establishment. These areas are proposed to receive NNI control and maintenance during and after construction. Any new disturbance (tree loss or soil compaction) for construction would be done in conjunction with the NNI control.
- "Maintained Grass/Open Space" are areas along a road or within the park that are actively mowed and/or maintained. Since these areas are actively maintained and effectively disturbed, there would be little to no new disturbance with respect to tree loss and marginally more soil compaction due to use of heavier construction equipment.

Of the 7.8 acres of total construction access, 5.9 acres are in park conditions that have experienced previous disturbance and 1.9 acres are within the forest that will experience new disturbance but will be minimized and avoided as described above.

For restoration implementation, the project areas will be clustered together based on geographic location and shared temporary construction access. Four distinct clusters of project areas are proposed:

- Cluster A: PA-01, PA-02, PA-03
- Cluster B: PA-04, PA-05, PA-06
- Cluster C: PA-07, PA-08
- Cluster D: PA-09

Estimated completion time for each construction cluster is dependent on the conditions encountered during restoration as well as potential time of year restrictions for wildlife protection. The estimated duration of construction to implement the proposed restoration for each cluster is approximately 1 year, plus or minus a month or two.

Staging and Stockpile Areas

Construction staging and stockpile areas would allow for vehicles, supplies, and construction equipment to be stored in a designated area for access and use during construction. Stream restoration work for this project necessitates the import of soil and rock to the site, which may need to be stockpiled temporarily within staging areas. **Figures 5, 7, and 9** identify locations for proposed staging and stockpile areas. For PA-01 to PA-09, construction staging would occur within the limits of disturbance for each proposed stream channel, or in nearby designated areas outside of the stream channel to prevent impacts to the surrounding forest.

Table 3 breaks down the park conditions targeted for proposed staging and stocking areas. Park conditions that were previously disturbed, without trees, or overrun with NNI were targeted to limit or avoid new disturbance and tree loss. The following park conditions and level of previous and potential new disturbance is described below:

- "Non-native Invasive Species Areas" are areas presently dominated by NNI and actively suppressing native species establishment. These areas are proposed to receive NNI control and maintenance during and after construction. Any new disturbance (tree loss or soil compaction) for construction would be done in conjunction with the NNI control.
- "Maintained Grass/Open Space" is defined as areas along a road or within the park that are actively mowed and/or maintained. Since these areas are actively maintained and effectively disturbed, there would be little to no new disturbance with respect to tree loss and marginally more soil compaction due to use of heavier construction equipment.
- "Open Canopy" is defined as existing gaps in the forest canopy where previous disturbance removed or suppressed trees. The open canopy gaps would experience new ground disturbance and soil compaction but would have no new tree impacts.
- "Roadway" is defined as an area within existing DDOT right-of-way where a section of the existing road will be partitioned off and used for construction. Being that it is an impervious surface, the road was previously disturbed and there would be no tree loss.

Of the 6.3 acres of staging and stockpiling areas, none were proposed in forested areas that would result in significant tree removal.

In general, construction work is intended to be completed in sections, from the bottom of each reach moving upwards to the top of each reach, in order to introduce stable flow conditions through the natural direction of conveyance. In order to limit the size of construction staging areas and to prevent stockpiling of erodible materials, delivery and removal of equipment or materials would occur on a daily or weekly schedule, or as needed. Erosion and sediment control BMPs would be implemented in staging and stockpiling areas. After each construction phase is complete, all disturbed areas would be decompacted, covered with topsoil and mulch, and seeded and/or planted. Maintained grass/open spaces that were maintained as turf grasses prior to construction will be seeded and reestablished as turf grasses. All other areas used for staging and stockpiling will be seeded with a native coastal plain upland hardwood forest mix which includes little bluestem (*Schizachyrium scoparium*), virginia wildrye (*Elymus virginicus*), Indiangrass (*Sorghastrum nutans*), purpletop (*Tridens flavus)* and switchgrass (*Panicum virgatum*) and planted with native trees and shrubs such as American beech (*Fagus gradifolia*), black gum (*Nyssa sylvatica*), various oaks (*Quercus spp.*), pawpaw (*Asimina triloba*), blueberries (*Vaccinium spp.*), arrowwood (*Viburnum dentatum*).

Table 2. Summary of Proposed Construction Access by Project Area and Park Conditions

Project Area	Proposed Construction Access Type	Total Length (Feet)	Area Type (SF) - Subtotal						Total Area (SF)	Total Area (AC)
			Existing Trail	Abandoned Road	In-Stream	Forested	NNI Invaded Forest	Maintained Grass/Open Space		
PA-1	Mulch Construction Access	4,186	15,518	10,949		28,274			54,741	1.26
	Temporary Bridge	71			1,179				1,179	0.03
	In-stream Construction Access	1,358			16,404				16,404	0.38
	Hardwood Mats	21				248			248	0.01
PA-2	Mulch Construction Access	215				2,583			2,583	0.06
	In-stream Construction Access	572			6,861				6,861	0.16
	Access Limited to ATV	1,857	4,455			6,607		58	11,120	0.26
PA-3	Access Limited to ATV	1,814	7,655			2,885		323	10,863	0.25
PA-4	Mulch Construction Access	1,748	9,435	8,896		6,768			25,099	0.58
	In-stream Construction Access	249			3,002				3,002	0.07
	Hardwood Mats	120		616		1,203			1,819	0.04
PA-5	Mulch Construction Access	5,500	46,768	8,351		19,038		4,593	78,750	1.81
	Temporary Bridge	35			571				571	0.01
	In-stream Construction Access	916			11,122				11,122	0.26
PA-6	Mulch Construction Access	2,804	15,331			4,681		19,239	39,251	0.90
	In-stream Construction Access	125			1,504				1,504	0.03
	Hardwood Mats	64				121		649	770	0.02
	Mulch Construction Access	932	4,474			6,796		2,209	13,479	0.31
PA-7	In-stream Construction Access	1,579			18,810				18,810	0.43
PA-8	Mulch Construction Access	750	3,477			5,558			9,035	0.21
	Temporary Bridge	34			576				576	0.01
	In-stream Construction Access	700			8,363				8,363	0.19
PA-9	Mulch Construction Access	1,917					20,728	1,912	22,640	0.52
	Temporary Bridge	61			1,006				1,006	0.02
	Totals	27,628	107,113	28,812	69,398	84,762	20,728	28,983	**339,796**	**7.80**

Descriptions of Area Types:
Existing Trail = existing Fort Dupont Park trail
Abandoned Road = unmaintained road used for past park maintenance access
In-Stream = stream channel used as a temporary access path
Forested = within a forest; field located to avoid and minimize impacts to trees (individual tree removals only, no clear cutting proposed)
NNI Invaded Forest = forest invaded with non-native invasive species
Maintained Grass/Open Space = areas along road or within the park that are actively mowed and/or maintained in some manner

Table 3. Summary of Proposed Construction Access by Project Area Park Conditions Continued

Project Area	Proposed Construction Access Type	Area Type (SF) - Subtotal				Total Area (SF)	Total Area (AC)
		NNI Area	Maintained Grass/ Open Space	Open Canopy	Roadway		
PA-1	Staging and Stockpiling Area		4,734	3,660	10,755	19,149	0.4
PA-2			9,374			9,374	0.2
PA-3			18,370			18,370	0.4
PA-4			9,339	18,662		28,001	0.6
PA-5		63,795	22,073			85,868	2.0
PA-6			75,316			75,316	1.7
PA-7				3,675		3,675	0.1
PA-8			20,698			20,698	0.5
PA-9			15,007			15,007	0.3
Totals		63,795	174,911	25,997	10,755	**275,458**	**6.3**

Descriptions of Area Types:
NNI Area = area invaded with non-native invasive species
Maintained Grass/Open Space = areas along road or within the park that are actively mowed and/or maintained in some manner
Open Canopy = gap in the forest canopy with no trees
Roadway = within existing DDOT right-of-way

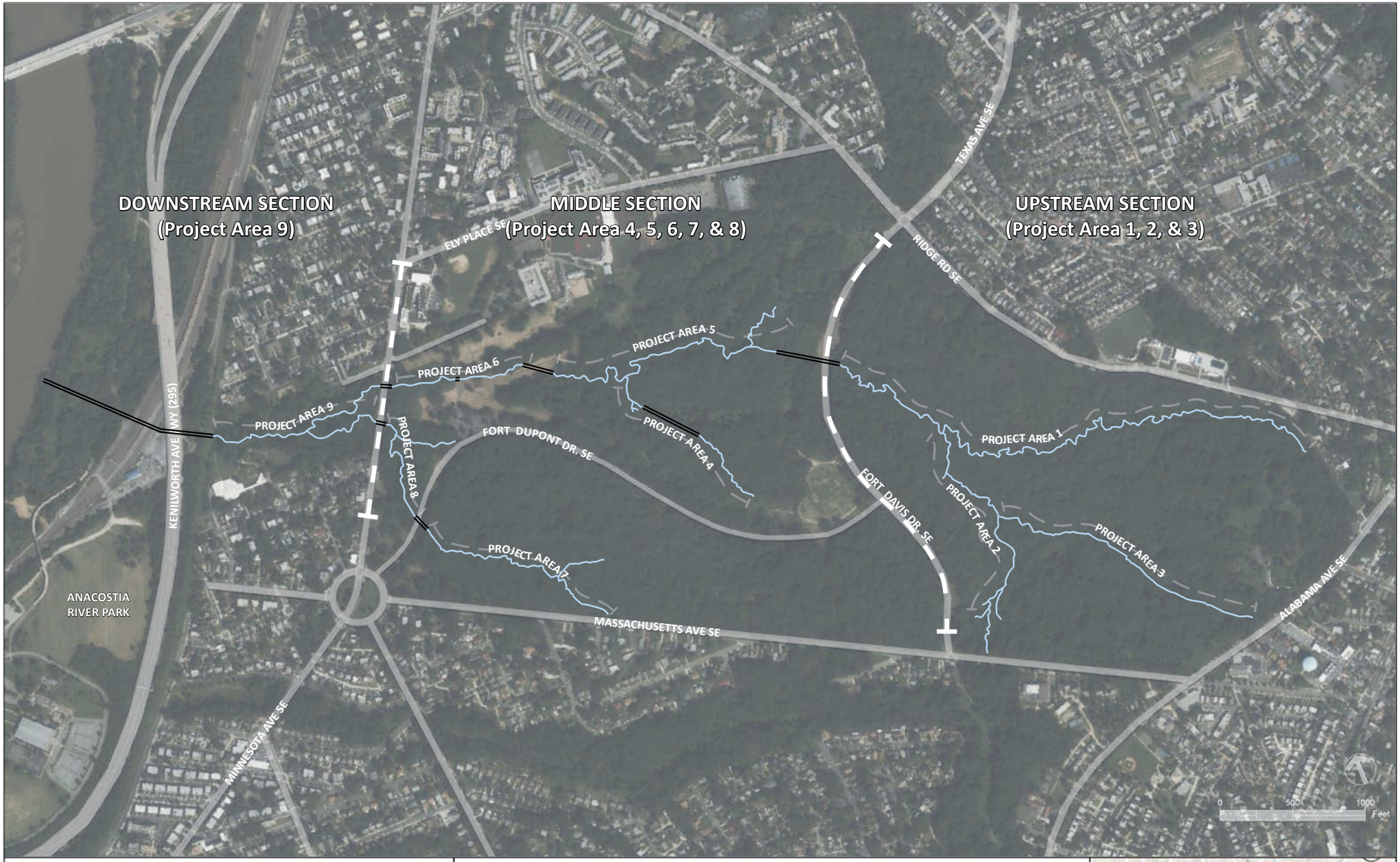

FIGURE 3: FORT DUPONT CREEK
STREAM & WETLAND RESTORATION PROJECT

OVERVIEW

Washington, D.C.
July 2023

EXISTING STREAM ALIGNMENT
CULVERT PIPE

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GOVERNMENT OF THE DISTRICT OF COLUMBIA
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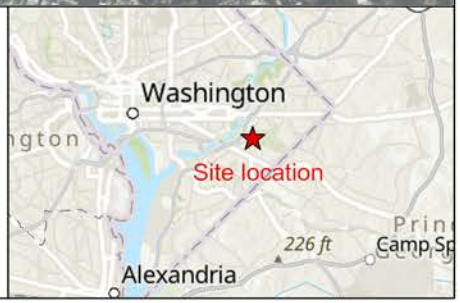

FIGURE 4: FORT DUPONT CREEK
STREAM & WETLAND RESTORATION PROJECT
PROPOSED RESTORATION APPROACHES

UPSTREAM SECTION

Washington, D.C.
July 2023

- LOW TECH PROCESS BASED RESTORATION - HAND INSTALLED POST ASSISTED LOG STRUCTURES (PALS)
- BASEFLOW CHANNEL/REGENERATIVE STREAM DESIGN
- CHANNEL REALIGNMENT/OXBOW WETLAND DEPRESSIONS
- REGENERATIVE STORMWATER CONVEYANCE (RSC)
- STAGE 0/WETLAND COMPLEX
- CULVERT PIPE
- LIMIT OF WORK

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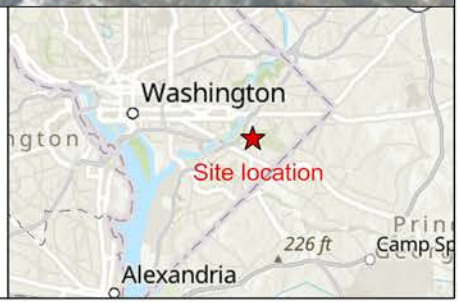

FIGURE 5: FORT DUPONT CREEK
STREAM & WETLAND RESTORATION PROJECT
PROPOSED CONSTRUCTION ACCESS

UPSTREAM SECTION

Washington, D.C.
July 2023

- STAGING AND STOCKPILING AREAS
- MULCH CONSTRUCTION ACCESS
- TEMPORARY BRIDGE
- INSTREAM CONSTRUCTION ACCESS
- HARDWOOD MAT
- ACCESS LIMITED TO ATV
- CULVERT PIPE
- LIMIT OF WORK
- LOW TECH PROCESS BASED RESTORATION - HAND INSTALLED POST ASSISTED LOG STRUCTURES (PALS)
- BASEFLOW CHANNEL/REGENERATIVE STREAM DESIGN
- REGENERATIVE STORMWATER CONVEYANCE (RSC)
- STAGE 0/WETLAND COMPLEX

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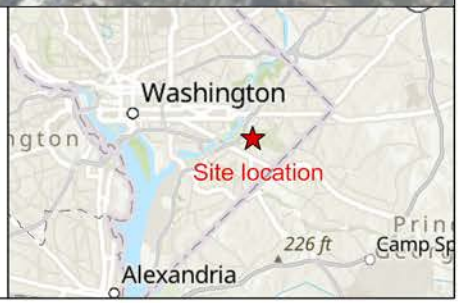

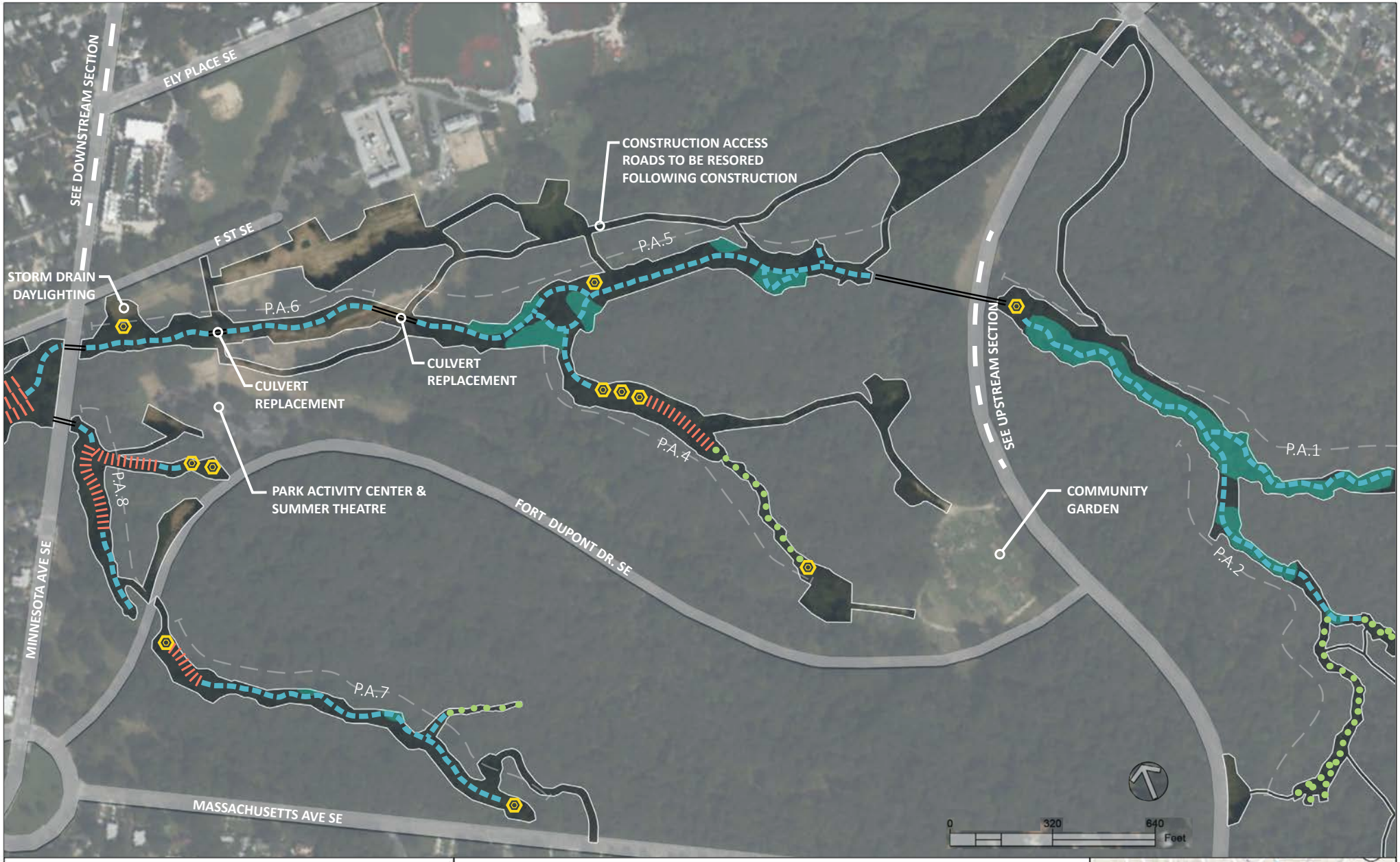

FIGURE 6: FORT DUPONT CREEK
STREAM & WETLAND RESTORATION PROJECT
PROPOSED RESTORATION APPROACHES

MIDDLE SECTION

Washington, D.C.
July 2023

- LOW TECH PROCESS BASED RESTORATION - HAND INSTALLED POST ASSISTED LOG STRUCTURES (PALS)
- BASEFLOW CHANNEL/REGENERATIVE STREAM DESIGN
- CHANNEL REALIGNMENT/OXBOW WETLAND DEPRESSIONS
- REGENERATIVE STORMWATER CONVEYANCE (RSC)
- STAGE 0/WETLAND COMPLEX
- CULVERT PIPE
- LIMIT OF WORK

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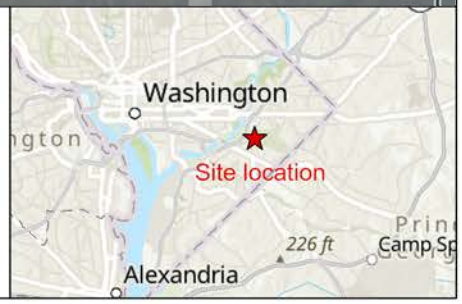

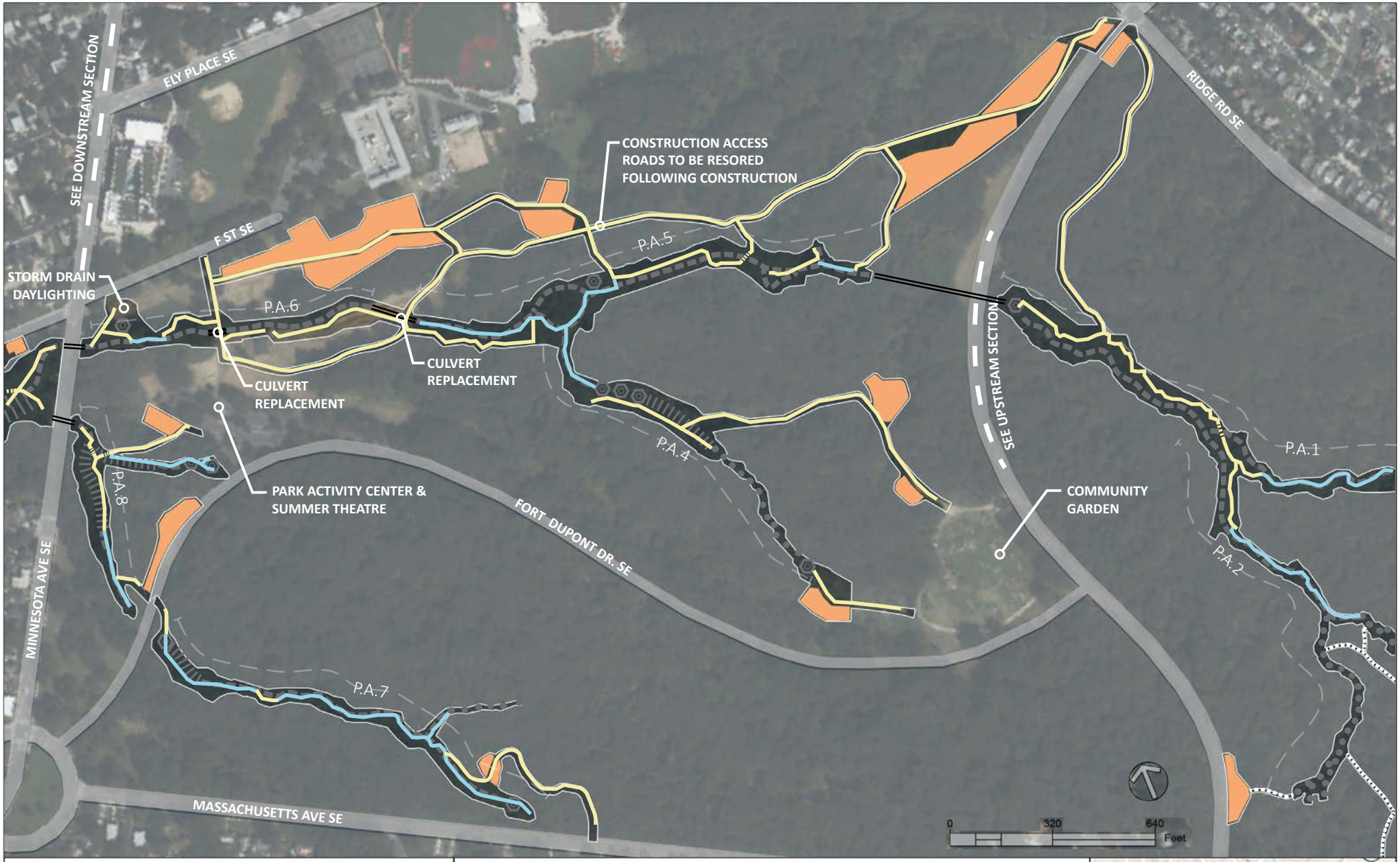

FIGURE 7: FORT DUPONT CREEK
STREAM & WETLAND RESTORATION PROJECT
PROPOSED CONSTRUCTION ACCESS

MIDDLE SECTION

Washington, D.C.
July 2023

- STAGING AND STOCKPILING AREAS
- MULCH CONSTRUCTION ACCESS
- TEMPORARY BRIDGE
- INSTREAM CONSTRUCTION ACCESS
- HARDWOOD MAT
- ACCESS LIMITED TO ATV
- CULVERT PIPE
- LIMIT OF WORK
- LOW TECH PROCESS BASED RESTORATION - HAND INSTALLED POST ASSISTED LOG STRUCTURES (PALS)
- BASEFLOW CHANNEL/REGENERATIVE STREAM DESIGN
- REGENERATIVE STORMWATER CONVEYANCE (RSC)
- STAGE 0/WETLAND COMPLEX

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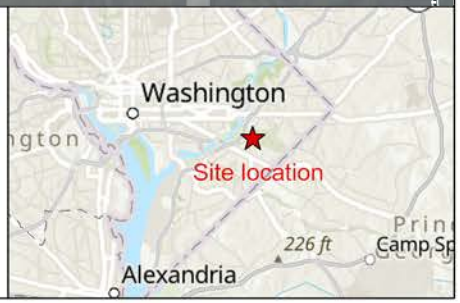

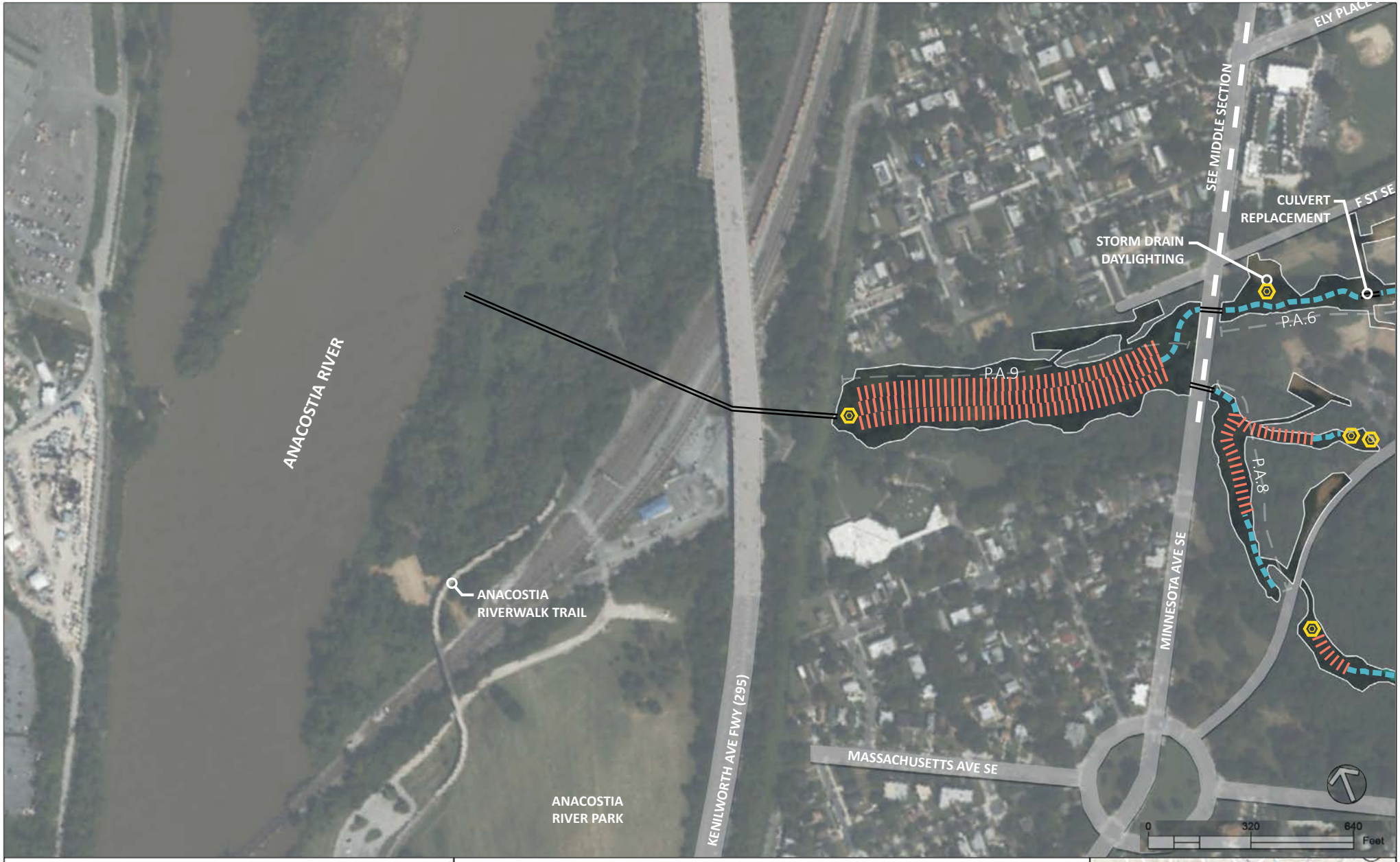

FIGURE 8: FORT DUPONT CREEK
STREAM & WETLAND RESTORATION PROJECT
PROPOSED RESTORATION APPROACHES

DOWNSTREAM SECTION

Washington, D.C.
July 2023

- LOW TECH PROCESS BASED RESTORATION - HAND INSTALLED POST ASSISTED LOG STRUCTURES (PALS)
- BASEFLOW CHANNEL/REGENERATIVE STREAM DESIGN
- CHANNEL REALIGNMENT/OXBOW WETLAND DEPRESSIONS
- REGENERATIVE STORMWATER CONVEYANCE (RSC)
- STAGE 0/WETLAND COMPLEX
- CULVERT PIPE
- LIMIT OF WORK

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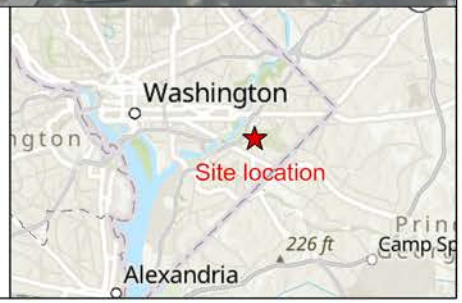

FIGURE 9: FORT DUPONT CREEK
STREAM & WETLAND RESTORATION PROJECT
PROPOSED CONSTRUCTION ACCESS

DOWNSTREAM SECTION

Washington, D.C.
May 2023

- STAGING AND STOCKPILING AREAS
- MULCH CONSTRUCTION ACCESS
- TEMPORARY BRIDGE
- INSTREAM CONSTRUCTION ACCESS
- HARDWOOD MAT
- ACCESS LIMITED TO ATV
- CULVERT PIPE
- LIMIT OF WORK

- LOW TECH PROCESS BASED RESTORATION - HAND INSTALLED POST ASSISTED LOG STRUCTURES (PALS)
- BASEFLOW CHANNEL/REGENERATIVE STREAM DESIGN
- REGENERATIVE STORMWATER CONVEYANCE (RSC)
- STAGE 0/WETLAND COMPLEX

DEPARTMENT OF ENERGY & ENVIRONMENT
GOVERNMENT OF THE DISTRICT OF COLUMBIA
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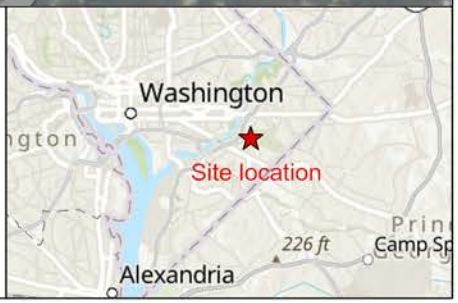

2.4 Mitigation Measures Associated with the Action Alternative

Mitigation measures will be implemented under the proposed action, whenever feasible, for natural, historical, and cultural resources protection. The exact mitigation measures will depend upon the final design and plan approvals by relevant agencies. The following mitigation measures will be implemented as part of the action alternative to avoid, minimize, and mitigate potential adverse impacts:

- A mandatory erosion and sediment control (ESC) plan would be developed prior to construction that would clearly depict the limits of disturbance.
- The limits of disturbance would include the locations of all clearing, removal/disposal of unwanted vegetation, grading, and excavation related to the restoration activities as well as the locations of construction access, laydown/staging, and material stockpiling.
- The ESC plan would include the location of BMPs designed to reduce the potential for erosion of bare soils and minimize sedimentation of areas outside of the construction limits. BMPs would consist of silt fence, wattles, and rolled erosion control matting. Permanent stabilization would be achieved in disturbed areas prior to the removal of BMPs.
- Vegetation clearing limits and tree removals would be clearly marked in the field by the contractor and approved by NPS.
- All proposed planting zones will be planted with native species of trees, shrubs and seed from sources within the same ecoregion.
- The CCC fireplace in PA-01 will be protected from damage during construction by not being within the limits of disturbance.
- The bridges in PA-05 will be removed by the contractor during construction due to unsafe conditions (i.e., piers undermined from streambank erosion and collapsed decking).
- If unanticipated archeological resources are discovered during construction, work in the immediate vicinity of the discovery would stop and NPS would be contacted. Work would not resume until the resources are identified and documented, and an appropriate mitigation strategy is developed. In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (25 United States Code [U.S.C.] 3001) of 1990 would be followed.

3 Affected Environment and Environmental Consequences

3.1 Overview

This section documents the current environmental conditions in PA-01 through PA-09, and is focused on resources that could potentially be affected by implementation of the alternatives considered in this plan/EA. The resource topics presented in this section correspond to the issues described in the Purpose and Need section. This section also includes an analysis of the short- and long-term, beneficial and adverse environmental consequences (impacts) of the no action and proposed action alternatives.

In accordance with the Council on Environmental Quality (CEQ) regulations, the impact analysis includes the direct, indirect, and cumulative impacts potentially resulting from the proposed alternatives (40 CFR 1502.16). The intensity of the impacts is assessed in the context of the Park's purpose and significance, and any resource-specific context that may be applicable (40 CFR 1508.27). The methods used to assess impacts vary depending on the resource but are generally based on past studies and scientific literature, field studies, information provided by subject matter experts, and professional judgement. Impacts were assessed with the assumption that the mitigation measures described in the analyses in the section, and summarized in the Alternatives section would minimize, reduce, and/or avoid impacts to resources. If the required mitigation measures were not implemented, the potential for resource impacts and the magnitude of those impacts would increase.

3.1.1 *Cumulative Impact Analysis Methodology*

Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions" (40 CFR 1508.7). As stated in the CEQ handbook, Considering Cumulative Effects under the National Environmental Policy Act (CEQ 1997), cumulative impacts need to be analyzed in the context of the specific resource, ecosystem, and human community being affected and should focus on effects that are truly meaningful. Cumulative impacts are considered for both the no action alternative and proposed action alternative.

Cumulative impacts were determined for each resource by combining the impacts of the alternative being analyzed with other past, present, and reasonably foreseeable future actions that would also result in beneficial or adverse impacts. Therefore, it was necessary to identify other past, present, and reasonably foreseeable future actions.

3.1.2 *Past, Present, and Reasonably Foreseeable Actions*

The following list of projects and actions (past, present, and reasonably foreseeable) were considered in the cumulative impact analysis for each resource topic and are considered for the no action alternative and the proposed action:

NPS – Fort Circle Parks General Management Plan (2004)

This plan provides broad direction for the use, management, and development of the Fort Circle Parks, which includes Fort Dupont Park. The plan will guide management of the park over the next 10-15 years. While the plan lays out management actions for cultural and natural resources, visitor use, recreation, interpretation and education, the focus is on cultural resources and recreation. Natural resources management actions included removal of exotic vegetation, retaining forest canopy, eliminating illegal dumping, managing stormwater and controlling erosion (NPS 2004).

District of Columbia – Anacostia Watershed Implementation Plan (2012)

The Anacostia has been determined to be impaired by several pollutants; therefore, the District has developed several TMDLs to meet federally mandated clean-up goals. To implement the Anacostia WIP, each of the 14 major tributaries that flow into the Anacostia have either a watershed implementation plan, sub-watershed action plan or restoration project inventory completed. To date, two baseline studies (MWCOG and USGS 2000; AWRP and MWCOG 2009), a Subwatershed Restoration Plan (MWCOG and USACE 2009) have been completed for the Fort Dupont watershed. Proposed projects should be reviewed for consistency and compliance with guidance in the appropriate watershed restoration documents.

District of Columbia – Phase III Watershed Implementation Plan (2019)

The District of Columbia's Phase III Watershed Implementation Plan for the Chesapeake Bay describes the actions the District and its partners (i.e., DC Water, federal agencies, and government, private, and community partners serving on the Chesapeake Partner Advisory Group) are taking to reduce nitrogen, phosphorus, and sediment pollution to levels that will meet the water quality goals established in the 2014 Chesapeake Watershed Agreement. Fort Dupont Stream and Wetland Restoration project is identified as a DOEE planned stream restoration project as part of the strategy to meet and maintain planning targets.

District of Columbia – Consolidated TMDL Implementation Plan (2022)

The District developed a Consolidated TMDL Implementation Plan (IP) in 2016 for the Anacostia River and its tributaries, the Potomac River, Oxon Run, and Rock Creek and its tributaries. The District's MS4 permit required an update to the 2016 IP. This update (2022 IP) focused on incorporating new information and updating all required elements, including the MS4 wasteload allocation (WLA) inventory, WLA attainment dates, and the achievement of existing programmatic milestones. The 2022 IP summarized progress to date in implementing best management practices to reduce loads and provided projections and attainment strategies to guide future implementation.

District of Columbia – Anacostia River Corridor Restoration Plan (2021)

Initiated in 2021, DOEE is preparing a comprehensive restoration plan for the Anacostia River corridor that will serve as a roadmap for holistically improving habitat, enhancing resiliency, improving water quality, and enhancing public access and recreation. The river corridor is defined as the entire tidal section of the Anacostia River in D.C. from the river channel to the upland edge of the 500-year flood plan. The comprehensive plan will be informed by both assessment and stakeholder input.

3.2 Impact Analyses

3.2.1 *Historic Structures and Cultural Landscapes*

Affected Environment

Fort Dupont Park is a contributing site of the Civil War Defenses of Washington. As such, the Park is an individually eligible historic district under Criteria B, C, and D. The unit of Fort Dupont Park is a National Capital Region (NCR) Cultural Resource (CR) identified cultural landscape that, while requiring additional documentation, is known to contains layers of development including Civil War fortifications, CCC/New Deal infrastructure, Mission 66 recreational facilities, and venues associated with the Summer in the Parks program.

To identify potentially affected historic structures and cultural landscapes, an APE that was developed in accordance with Section 106 of the National Historic Preservation Act was used. The APE or geographic

area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any exist, encompassed all nine project areas. The APE has been refined over the duration of the proposed stream and wetland restoration project to the version shown in **Figure 1** that is confined to the proposed restoration areas and associated construction access. The historical resources and cultural landscapes were assessed based on APEs defined during the Phase IA Archeologic Inventory (Louis Berger, 2018) and Phase IB Archeologic Survey (WSP, 2019) that encapsulate each of the nine project areas. Historic resources within approximately 0.25 mile of the project areas include Civil War related resources, including forts, as well as the Civilian Conservation Corps and prehistoric camp and domestic sites. Improvements were made to the park in the mid-1900s (1955-1966), during the Mission 66 development period, where the National Park Service decided to "expand visitor services and 'modernize' park facilities" across the National Park system. The Park was also used as a site for the Summer in the Parks Program, which was an arts and recreation program from 1968 to 1976.

Fort Dupont was a fortification that was part of the Civil War defenses of Washington. The Park is named for the fort; however, the fort is outside the area of potential impacts. Fort Dupont Park was never densely settled prior to the Civil War and experienced limited residential development into the early twentieth century.

The notion of turning the capital's surviving forts into a connected park was first proposed in the 1870s and was incorporated into the McMillan Plan of 1901, whereby the Senate established a commission to advise Congress and the District on methods to improve the District's parks, monuments, memorials, and infrastructure, and on planning for urban renewal, economic growth, and expansion of the federal government (Finnigan 2012). This plan provided the impetus for the government to reacquire some of the forts, including Fort Dupont, which was purchased in 1916 (McCormick 1967). During the early 1900s, several schemes were proposed, many of them focusing on a circular drive or parkway, referred to as Fort Drive, which would connect all the surviving forts (Finnigan 2012).

During the Park's early years, from 1916 to 1933, it had few amenities to offer its visitors. The D.C. Street Trees and Parking Department used the property as a tree nursery from 1918 through the 1920s (Davidson and Jacobs 2004). In 1933, all the capital's surviving forts under government ownership passed to NPS, which envisioned developing the forts as recreational areas accessible to the public. The Park was developed as part of a plan to incorporate the numerous Civil War forts surrounding the District into a "Fort Circle Drive" around the city. The National Capital Park and Planning Commission developed a plan for the Park in 1929 (Davidson and Jacobs 2004). The plan featured two park drives, a golf course, picnic areas, playgrounds, and bridle paths; it was unfunded and not immediately implemented.

Between 1933 and 1941, the Civilian Conservation Corps (CCC) built roads and picnic areas in the Park and was involved in landscape beautification and restoration projects. Between October 1933 and March 1942, the Park was home to CCC Camp NP-7-DC, located in the northwest corner of the Park near the intersection of Minnesota Avenue SE and E Street, SE (Davidson and Jacobs 2004). The camp compound included six wood-frame barracks and associated structures (e.g., mess hall, latrine) (Davidson and Jacobs 2004). Camp enrollees used the 1929 park plan to guide projects in the Park (Davidson and Jacobs 2004) and constructed picnic areas, comfort stations, park roads, bridle paths, a "council ring," and a play area (Davidson and Jacobs 2004). Sewage and water lines were run through the Park (Davidson and Jacobs 2004), and the CCC constructed numerous park fixtures, including 40 "table units" (groupings of tables), 15 drinking fountains with a rustic design, and 53 stone fireplaces following two standardized designs

(Davidson and Jacobs 2004). Although previously used informally, the Park officially opened for public use in spring 1937 (Davidson and Jacobs 2004).

The CCC also worked to create a golf course at the Park. A golf course had been included in the 1929 plan for the Park; however, the plan was not implemented until after 1938, when the National Capital Park and Planning Commission released an updated plan for public golf courses in the District (Babin 2017). Nine holes were planned for construction in the Park, to be connected to an additional nine holes in Anacostia Park. CCC enrollees worked on the course between 1938 and 1940 but did not proceed beyond initial land clearing and the installation of 450 feet of concrete pipe (Robinson & Associates 2004).

NPS worked to redesign the golf course in the 1940s, eventually hiring notable designer William F. Gordon to develop design plans in 1946-1947. Golf course construction was undertaken from 1947 to 1948. According to historical accounts, the golf course was designed for a white clientele, while other public courses were built for use by black golfers (Babin 2017; Robinson & Associates 2004). The golf course was closed in 1971, and most of it has since reverted to woodland (Davidson and Jacobs 2004).

The idea for a Fort Drive connecting all the forts was finally abandoned in 1962 because of the increase in traffic around Washington and the number of streets the drive would have to cross. Instead, NPS began to speak of the "Fort Circle Parks," which would be developed for recreational and educational purposes. One of the recommendations in the 1968 Master Plan for the Parks was a bicycle and pedestrian trail connecting as many of the forts as practical. The trail plan has been partially implemented in recent years (Finnigan 2012).

Several historic structures have been identified in the vicinity of the Fort Dupont Stream and Wetland Restoration project. These structures are summarized in **Table 4**. Seven of the eight structures were identified in the WSP survey conducted for the present project (WSP 2020). Resources related to the Fort Dupont Golf Course were evaluated as part of the Historic Resource Study conducted by Robinson & Associates (2004) and were determined not eligible for listing in the National Register of Historic Places (NRHP). CCC fireplaces in District parks were determined eligible as part of a HABS survey conducted in 2004. The CCC fireplace identified in PA-01 was not inventoried in the HABS survey and was discovered in the woods during the WSP survey of the area of potential impacts (WSP 2020).

DC SHPO has indicated that the site falls within National Register boundaries; however, NPS has determined that work done within the project areas will have no adverse effects on historic, cultural, or archaeological resources (refer to Section 4.2.2). Per the Phase IB Archeological Survey Stream and Wetland Restoration Areas in Fort Dupont Parks prepare for NPS-NACE by Louis Berger US, Inc in 2019, the Study Area is not eligible for listing in The National Register of Historic Places (NRHP) and no further study of the sites is recommended.

Table 4. Summary of Historic Structures in the Area of Potential Impacts

Structure	Note/Description	Project Area	NRHP Status	Reference
CCC Fireplace	Brick and stone, CCC design.	PA-01	Eligible	Davidson and Jacobs 2004; WSP 2020
Golf Course Fairway	Landscape feature. Current summer concert lawn.	PA-06	Not eligible	Robinson & Associates 2004; WSP 2020
Golf Course Tee or Green	Landscape feature.	PA-05; PA-06	Not eligible	Robinson & Associates 2004; WSP 2020
Water Fountain	Concrete. Thought to be related to the golf course.	PA-05	Not eligible	Robinson & Associates 2004; WSP 2020
Wooden Bridge (Ruins)	May be related to the golf course.	PA-05	Not eligible	Robinson & Associates 2004; WSP 2020
Bridge Piers (pair)	Concrete. May be related to the golf course.	PA-05	Not eligible	Robinson & Associates 2004; WSP 2020
Bridge Abutment (solo)	Concrete. May be related to the golf course.	PA-05	Not eligible	Robinson & Associates 2004; WSP 2020

Environmental Consequences

Impacts of Alternative A

Under Alternative A, the no action alternative, storm events, erosion, and sedimentation would continue to degrade stormwater outfalls, streams and wetlands. Of the historical structures identified, only structures in PA-05 (i.e., wooden bridge, bridge piers, bridge abutments) are likely to be affected by their proximity to stream bank erosion and collapsing stormwater outfalls in the Park (Table 4). These structures were most likely associated with previous use of the area as a golf course and were constructed outside the periods of significance for the Park. Thus, the PA-05 structures have been determined to be ineligible for the NRHP. Therefore, no contributing historical resources to the cultural landscape historical district are in danger of being lost or damaged by streambank erosion or collapsing stormwater outfalls.

Cumulative Impacts

Since no historical structures or contributing historical resources to the cultural landscape historical district are in danger of being lost or damaged under Alternative A, the no action alternative, there would be no cumulative impacts.

Impacts of Alternative B

While several potential historic structures were located (**Table 4**) within the APE, these structures were constructed outside the periods of significance for the Park and have been determined to be ineligible for the NRHP. Regardless, Alternative B would preserve in place a concrete abutment and a separate set of bridge piers for pedestrian bridges in PA-05, which are most likely associated with the area's prior use as a golf course. During construction, effort would be made to avoid affecting historic resources and structures (e.g., CCC fireplace in PA-01) and construction equipment would access the project areas via existing trails and previously disturbed areas to the maximum extent practicable. If any previously unknown historic resources are unearthed during construction, Park Management as well as the Regional Archeologist will be notified in addition to the DC SHPO regarding any archeological finds. An approved plan for

unanticipated discoveries will be in place prior to the start of construction. No contributing historic structures to the cultural landscape historical district will be altered or destroyed by the proposed project.

Cumulative Impacts

Past use, management, and development guidance in the Fort Circle Parks General Management Plan has likely contributed to the maintenance and preservation of historical structures and the cultural landscape within the Park (NPS 2004). Other present and reasonably foreseeable actions in the Park such as proposed stream and wetland restoration projects identified in the Anacostia River WIP (DOEE 2012) are anticipated to have a minimal potential to affect historic structures and the cultural landscape since resources within the Park are federally protected. The Phase III Watershed Implementation Plan (DOEE 2019) identifies this proposed restoration project as a reasonably foreseeable action which will be avoiding historical structures as described herein. Overall implementation of the proposed action, combined with the past, present, and reasonably foreseeable future projects, would result in overall beneficial cumulative impact on historic resources or cultural landscapes.

3.2.2 *Visitor Use and Experience*

Affected Environment

For this proposed restoration project, visitor experience includes enjoyment and satisfaction of park resources, access, and safety. The project areas are largely confined to the stream corridor except where construction access and staging and stockpiling are needed (**Figures 5, 7, and 9**). Even then, construction access, staging, and stockpiled areas will minimize the footprint and target open areas, areas with existing paths, and areas of dense non-native invasive vegetation while avoiding natural areas. Since the project areas avoid administrative and recreational structures, impacts to visitor experience would be affected by construction traffic, construction noise, visual aesthetics, and trail closures.

Access from main roads were targeted for ease of access, proximity to staging and stockpiling, and minimizing access roads through the Park. The access from the main road will be visible to adjacent residents and visitors. Maintenance of traffic measures would be implemented as required to ensure safety.

The project areas are located within the District of Columbia which is an urban setting that experiences higher than typical ambient noise generated by airplanes, vehicular traffic, construction, and other noise generating activities. While noise monitoring was not performed at the Park for this environmental assessment, noise associated with construction would be confined within a certain timeframe on weekdays and would be similar in noise level to other urban construction activities.

The built environment component of the visitor experience includes administrative and recreation structures, landscape structures, site furnishings, structures on roads and trails, and signage. No administrative and recreation structure will be affected by the proposed restoration project. In particular, remaining golf cart stream crossings in PA-05 from Fort Dupont Golf Course will be preserved. However, work within several project areas will involve the replacement or removal of culverts (i.e., PA-01, PA-04, PA-05, PA-06, and PA-08), removal of valley-wide bridge paths in PA-05, and replacement of footbridges in PA-08 with boardwalks (refer to March 10, 2023, memorandum to DC SHPO in Appendix A). These replacements are based on structural failure and degradation observed during field studies as well as the goal of creating a more natural stream system.

There is a trail network throughout Fort Dupont Park. Severe stream bank erosion and channel incising has led to collapsing stormwater outfalls in the Park, which is a threat to the trail network at these locations. The proposed restoration outlines using existing trails for construction access. During construction, there would be temporary closures to accommodate construction access and for visitor safety. The construction would create temporary visual nuisance to park visitors using the trails.

Following completion of construction as native vegetative communities establish, the restored streams and wetlands will offer a more diverse aquatic habitat and riparian corridor condition that will support a diversity of flora and fauna. This will ultimately enhance the visitor experience seen from the trail network.

Environmental Consequences

Impacts of Alternative A

Under Alternative A, the no action alternative, visitors would experience the same eroding stream channels, collapsing stormwater outfalls, and wetland conditions from the trail network. The trail network would continue to have unsafe passage for visitors in the vicinity of collapsing stormwater outfalls and across streams due to bridge structures being undermined from streambank erosion. Noise levels would not change under the no action alternative. The no action alternative would also lead to the continued collapse and sedimentation of several culverts and unsafe passage for visitors across streams due to bridge structures being undermined from streambank erosion. The trail network in the vicinity of failing stormwater outfalls would continue to deteriorate, be unsafe for visitors, and be a visual nuisance. The built environment associated with existing culverts, footbridges, and trail network would continue to degrade; however, the no action alternative would have no new impact on these structures.

Cumulative Impacts

Visitor access, safety, and aesthetic enjoyment of the park would continue to degrade with continuation of eroding of stream channels and collapsing stormwater outfalls; however, the no action alternative would have no new impact on visitor use and experience. Therefore, there would be no cumulative impact.

Impacts of Alternative B

Under Alternative B, visitors would experience maintenance of traffic measures at construction accesses along the main roads, observe active staging and stockpiling areas at construction entrances, experience trail closures, and experience additional construction noise and visual nuisance. These impacts would be temporary. Some are only associated with construction activity while others may occur over a few years as native vegetation establishes. However, following construction, the visitor experience would be improved with more diversity of microorganisms and biota within the streams and wetlands, newly constructed bridges and boardwalks at stream crossings, more diverse forested riparian corridor, and more opportunities for stream and wetland interaction through floodplain reconnection. Additionally, signage will be added throughout the Park to share information about the restoration and the history of the site.

Localized disturbance of the soils in these areas will occur during removal and replacement of the culverts and footbridges associated with the implementation of stream and wetland restoration. During construction, sediment and erosion control measures would be adhered to per permit requirements.

Culvert replacement would address degraded pipe and concrete box culvert conditions and to integrate with the stream restoration in the project areas. For example, significant gaps between existing corrugated metal pipes (CMP) are causing the ground above the pipe to collapse, resulting in multiple large holes at the ground surface. At these locations, a pipe arch culvert at a higher stream elevation would replace the

damaged culvert providing a natural stream bed for aquatic organism passage (e.g., fish) while also matching the conveyance capacity of the existing pipe. Where existing concrete box culvert inverts are lower than the proposed stream channel elevation, the concrete box culvert would be replaced at the higher stream elevation to allow for aquatic organism passage while also matching the conveyance capacity of the existing pipe. Footbridges associated with culverts would be replaced with boardwalks more suitable for crossing streams, wetlands, and culverts.

Trail network impacts and closures for construction access will be temporary. Trails will be returned to a similar condition or better condition and will either be mulched or bare earth as determined in coordination with NPS. The severe stream bank erosion and channel incision causing collapsing stormwater outfalls would be addressed by the restoration implementation alleviating a visual nuisance to park visitors and threats to the trail network at these locations.

Cumulative Impacts

Past use, management, and development guidance in the Fort Circle Parks General Management Plan has likely contributed to beneficial improvements of visitor use, recreation, and education within the Park (NPS 2004). The proposed action would temporarily contribute cumulative impact to visitor experience during construction activities in the project areas related to traffic, noise, visual aesthetics, and trail closures. The function of the built environment associated with existing culverts and footbridges would be improved, threats to the trail network from collapsing stormwater outfalls would be addressed, and the trails would be returned to a similar or better condition, which would have a long-term beneficial impact to these built environment features. Overall implementation of the proposed action combined with the past projects would have a beneficial cumulative impact on the visitor used and experience through improved trail crossings and more educational opportunities from enhanced integrated stream and wetland conditions and more diversity of microorganisms and biota to observe.

3.2.3 *Water Quality*

Affected Environment

The District DOEE, Water Quality Division (WQD) has a mission to restore and protect the surface and ground waters of the District of Columbia. The DC Water Quality Program was established under the authorities of the DC Water Pollution Control Act and the federal Clean Water Act (CWA). Water quality standards and beneficial uses are determined for each water body by the DOEE WQD, as prescribed by USEPA's 2003 guidance, *Elements of a State Water Monitoring and Assessment Program* (USEPA 2003). For the purposes of the water quality standards, the surface waters of the District were classified based on 1) current uses and 2) future uses to which waters will be restored. Title 21, Chapter 11 of the DC Code contains the current uses and classes of all waters in the District. For purposes of this plan/EA, we have shown information from this chapter for the Anacostia River (receiving water of Fort Dupont Stream) and Fort Dupont Stream (which is a tributary to the Anacostia River).

The DC surface water designated use classifications for the Anacostia River and its tributaries are shown below in **Tables 5 and 6**.

Table 5. Water Quality Standard Use Categories & Classes

Uses	Classes
Primary contact recreation – swimming, wading	A
Secondary contact recreation and aesthetic enjoyment – boating	B
Protection and propagation of fish, shellfish, and wildlife	C
Protection of human health related to consumption of fish and shellfish	D
Navigation	E

Table 6. Classification of Project Area Waters

Surface Water of the District	Current Use	Designated Use
Anacostia River (receiving water of Fort Dupont Stream)	B, C, D, E	A, B, C, D, E
Anacostia River Tributaries (Fort Dupont Stream)	B, C, D	A, B, C, D
Wetlands	C, D	C, D

The District has adopted water quality standards for dissolved oxygen, water clarity and *chlorophyll-a* in accordance with the Chesapeake Bay Water Quality Criteria Guidance Document published in 2003 (USEPA 2003) for the Potomac Tidal Fresh and Anacostia Tidal Fresh (Chesapeake Bay Program). Because pollutants in the Anacostia River and its tributaries exceed city standards, the District was required to develop TMDLs for each of the pollutants that impair the waterways. The WQD has undertaken development of the TMDLs through required monitoring and modeling studies for the Anacostia and Potomac Rivers and their tributaries including Rock Creek.

Current TMDLs and the year they were developed for the Anacostia River and its tributaries (includes Fort Dupont Creek) in the proposed work area are:

- Bacteria (E. coli) TMDLs for the Anacostia River and Tributaries (2003, 2014)
- Organics and Metals for Anacostia River and Tributaries (2003)
- Oil and Grease TMDL in Anacostia River (2003)

Several regional TMDLs for water quality in the Chesapeake Bay apply to the project area as well:

- Chesapeake Bay TMDL (2010)
- Polychlorinated Biphenyls (PCBs) TMDLs for Tidal Portions of the Potomac and Anacostia Rivers (2007)
- Sediment/total suspended solids (TSS) TMDLs for the Anacostia River Basin (2007)
- Nutrients/biological oxygen demand (BOD) for the Anacostia River Basin (2008)
- Trash TMDLs for the Anacostia River Watershed (2010)

In addition, Section 303(d) of the federal CWA and regulations establish the water quality standards and TMDL programs. States, territories, and tribes set water quality standards, designated uses and standards to support those uses. The law requires states to prepare a list of waterbodies or waterbody segments that do not meet water quality standards, even after all the pollution controls required by law are in place. Waterbodies or waterbody segments not meeting the appropriate water quality standards are considered to be impaired. The law requires that states place the impaired waterbody segments on a list referred to as the

303(d) list and develop TMDLs for the waterbodies on the list in Category 5. The Anacostia River is divided into two segments (upper and lower) for assessment purposes and has been included on the list since 2002. The project site is located within the Lower Anacostia watershed and is in Category 4a (a State developed TMDL has been approved by USEPA or a TMDL has been established by USEPA for any segment-pollutant combination) of the 303(d) list. The Category 4a designation is representative of the fact that the Chesapeake Bay TMDL was issued in 2010.

The 16 Anacostia pollutants that have a TMDL can be classified into six typical groups that include oil and grease, nutrients/BOD, sediment/TSS, pathogens, metals, and organic chemicals.

There are 13 major streams and small tributaries that contribute about 50 percent of the lower Anacostia River sediment load. Fort Dupont Stream (a tributary) is 1.9 miles in length and drains a watershed of approximately 443 acres (0.72 square miles).

Environmental Consequences

Impacts of Alternative A

Under the Alternative A, the no action alternative, storm runoff through degraded stream channels of Fort Dupont Creek would continue to transport sediment-laden water and associated nutrients (total nitrogen and total phosphorus) to the Anacostia River and the Chesapeake Bay watershed. There would be no new impacts to water quality.

Cumulative Impacts

Past environmental trends documented in baseline studies as a result of the Anacostia River WIP (DOEE 2012) concluded poor stream and habitat conditions within the Fort Dupont watershed. Water quality will continue to degrade with additional sediment and nutrient inputs originating from bank erosion; however, the no action alternative would have no new impact on water quality. Therefore, there would be no cumulative impact.

Impacts of Alternative B

Part of the impetus for the proposed restoration project is to improve water quality and reduce pollutant loads generated from the stream network through Fort Dupont Park that ultimately releases into the Chesapeake Bay watershed. **Table 7** summarizes the predicted annual load reductions in total nitrogen (TN), total phosphorus (TP), and total suspended solids (TSS) for the project. The load reduction was calculated based on the Bank Assessment for Non-point Source Consequences of Sediment (BANCS) analysis and associated erosion rate along with the nutrient concentration and bulk density from the sediment sampling performed within the project areas. The load reduction values were calculated using guidelines outlined in the 2020 Recommendations of the Expert Panel to Define Removal Rates for Individual Stream Restoration Projects for prevented sediment referred to as Protocol 1 and assumes 50% removal efficiencies with no delivery factor applied. These pollutant load reduction values will be used as the baseline for potential water quality benefits of the proposed restoration project and will be updated as design progresses.

Table 7. Pollutant Load Removal Rate Predictions Using Expert Panel Protocols

Cluster*	Project Areas (PA-0#)	TN (lbs/yr)	TP (lbs/yr)	TSS (tons/yr)
Cluster A	1, 2, & 3	15,469	1,446	2,455
Cluster B	4, 5, & 6	6,020	245	654
Cluster C	7 & 8	2,681	137	505
Cluster D	9	1,356	140	241
*Project areas grouped by proposed construction sequence. Refer to Chapter 2 for detail on construction clusters.				

Wetlands are also known to remove nitrogen, phosphorus, and pesticides from runoff. The restoration proposes to restore and enhance wetlands throughout the project areas resulting in improvements to water quality. Alternative B would likely have an immediate reduction in sediment/TSS pollutants and may also result in a minor reduction in nutrient pollutants. Therefore, Alternative B would have long-term beneficial impacts to water quality.

Cumulative Impacts

Decades of uncontrolled stormwater flows from undeveloped areas have contributed to the current diminished water quality of the Anacostia River and Fort Dupont Creek. These past environmental trends of poor stream and habitat conditions within the Fort Dupont watershed are documented in baseline studies as a result the Anacostia River WIP (DOEE 2012). Present and reasonably foreseeable actions, such as stream and wetland restoration efforts completed as part of the Anacostia River WIP (DOEE 2012), Consolidated TMDL Implementation Plan (DOEE 2022), and/or the Anacostia River Corridor Restoration Plan (Biohabitats 2021), would result in the reduction of pollutants. The Phase III Watershed Implementation Plan (DOEE 2019) identifies this proposed restoration project as a reasonably foreseeable action. Any restoration project would be required to comply with local and state erosion and sediment control regulations minimizing their impacts to water quality in the watershed during construction. In addition, current and future development projects would be required to comply with stormwater management and erosion and sediment control regulations, minimizing their overall impacts to water quality in the watershed. When the impacts of the proposed action are combined with the impacts of other recent past, present, and reasonably foreseeable future projects, water quality would be beneficially impacted.

3.2.4 *Wetlands*

Affected Environment

Wetlands are areas where water covers the soil or is present either at or near the surface of the soil all year or for varying periods of time during the year, including during the growing season. Over the past two hundred years, a large percentage of the historical wetlands in the District have been drained, filled, or impacted by colonial practices and/or urbanization. While historic trends have shown a decline in wetlands in the District, current and future trends suggest a no net loss of wetlands due to federal and District-level wetland protections, requirements for avoidance and minimization, and compensatory mitigation for unavoidable impacts.

In the District, wetlands are protected under the CWA (Section 404), Sections 5 and 21 of the Water Pollution Control Act, and the Mayor's Order 98-50. In addition, the District regulates federally non-jurisdictional waters and is responsible for issuing water quality certifications in accordance with Section 401 of the Clean Water Act.

All federal agencies are responsible for wetland protection practices under Executive Order 11990. The NPS meets this requirement through implementation of Director's Order #77-1: Wetland Protection and adherence to Procedural Manual #77-1: Wetland Protection, which requires use of the Federal Geographic Data Committee (FGDC) Wetlands Classification Standard when identifying and classifying wetlands (NPS 2016). The NPS Procedural Manual #77-1 also requires mitigation to compensate for conversion, degradation, or loss of wetland area and / or function (NPS 2016). The U.S. Army Corps of Engineers (USACE) and/or DOEE may also stipulate mitigation requirements through the Section 404 and Section 401 of the Clean Water Act permitting processes. However, as this is a restoration project, mitigation is not anticipated to be required under Procedural Manual #77-1 or the Clean Water Act.

A wetland investigation was conducted to determine the presence, extent, and classification of federally jurisdictional wetlands and waterways within the Fort Dupont Stream and Wetland Restoration Project study area (Biohabitats 2023). In March 2016, August-September 2017, January-June 2021, and June 2023, wetlands and waters of the US/waterways in the project area were delineated according to the guidance in NPS Director's Order #77-1: Wetland Protection (2002) respectively. Wetlands were identified in accordance with the 1987 Corps of Engineers Wetland Delineation Manual (USACE 1987), the current Atlantic Gulf Coastal Plain Regional Supplement (Version 2.0) and with U.S. Fish and Wildlife Service's (USFWS) Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979).

All delineated wetlands are described in the Wetland Delineation Report prepared by Biohabitats (Biohabitats 2023). Since the restoration is considered an excepted action, it is therefore exempt from the requirement to prepare a Wetland Statement of Findings in accordance with NPS Procedural Manual #77-1. The delineated wetlands meet the NPS definition of a wetland described above as well as the definition of the USACE wetlands. While all wetlands identified are located within NPS lands, not all wetlands are within the proposed limits of disturbance for each project area. Fourteen Palustrine Forested (PFO) or Palustrine Emergent (PEM) wetlands are present within the proposed limits of disturbance in five out of the nine project areas. Additional details regarding each impacted resource are provided in **Table 8** below.

Environmental Consequences

Impacts of Alternative A

Under Alternative A, the no action alternative, existing wetlands within the proposed limits of disturbance for five out of nine project areas (i.e., PA-01. PA-04, PA-05, PA-06, and PA-09) would remain undisturbed by construction. However, the groundwater and seep supported wetlands could become drier in the long-term as the source of water lowers due to channel incision thus reducing the size and/or not functioning as a wetland.

Cumulative Impacts

The no action alternative would have no new impact to wetlands; therefore, there are no cumulative impacts.

Impacts of Alternative B

Under Alternative B, wetlands present in PA-01, PA-04, PA-05, PA-06, and PA-09 would be impacted as indicated below in **Table 8**. Alternative B would result in a total of 0.90 acres of wetland impacts. The wetlands would be temporarily impacted by excavation, placement of fill material, and grading conducted to implement the stream and wetland restoration project. After construction is completed, wetland areas would be restored and revegetated with native wetland species. It is anticipated that overall wetland acreage would be increased in association with stream restoration approaches that will raise the groundwater table (i.e., improve wetland hydrology). The proposed wetland enhancement of each would result in improved wildlife habitat, ecological integrity, educational potential, scenic quality, floodwater storage, and sediment trapping abilities.

All impacted wetlands shall be restored in-kind and enhanced on site. As a result of restoration and associated rise in groundwater, up to an additional 2 acres of emergent (herbaceous) and 5 acres of forested wetlands could be restored. The final extent of wetland restoration and timeframe for establishment will be variable based on the complexity and variability of nature and the landscape to support wetland hydrology, hydrophytic vegetation and hydric soils (i.e., the three criteria for wetland conditions). Overall, the proposed restoration approaches would improve wetland hydrology and function and potentially increase wetland acreage within the watershed, having a long-term beneficial impact to wetlands.

Table 8. Wetland Areas and Impacts Summary

Wetland ID	Project Area (PA-0#)	Waters Type (Cowardin Classification)	Tidal or Non-Tidal	Total Wetland Delineated		Wetland Impacts	
				Area (SF)	Area (AC)	Area (SF)	Area (AC)
PA1 Wetland 1	1	PFO	NT	8846.64	0.20	2237.45	0.05
ER	1	PFO	NT	16855.04	0.39	967.42	0.02
ET	1	PFO	NT	479.93	0.01	98.40	0.002
EU	1	PFO	NT	729.22	0.02	620.60	0.01
EV	1	PFO	NT	1429.95	0.03	1429.95	0.03
D	2	PFO	NT	Outside Proposed Limits of Disturbance			
DA	2	PFO	NT				
DB	2	PFO	NT				
DC	2	PFO	NT				
PA4 Wetland 1	4	PFO	NT	19303.35	0.44	353.38	0.01
PA4 Wetland 2	4	PEM	NT	2390.10	0.05	2390.10	0.05
PA5 Wetland 1	5	PFO	NT	3660.17	0.08	1001.71	0.02
PA5 Wetland 2	5	PFO	NT	2500.85	0.06	493.22	0.01
PA5 Wetland A	5	PFO	NT	2992.20	0.07	2992.20	0.07
PA6 Wetland 1	6	PEM	NT	2327.99	0.05	2327.99	0.05
FB	6	PFO	NT	4594.72	0.11	3248.05	0.07
FB	6	PEM	NT	Outside Proposed Limits of Disturbance			
FH	6	PFO	NT				
PA9 Wetland 1	9	PFO	NT	903.85	0.02	903.85	0.02
FI	9	PFO	NT	Outside Proposed Limits of Disturbance			
FJ	9	PFO	NT	23224.20	0.53	23224.20	0.53

Cumulative Impacts

Past urbanization actions have contributed to the degradation and filling of wetlands within the proposed project areas. These past environmental trends of poor stream and habitat conditions within the Fort Dupont watershed are documented in baseline studies as a result of the Anacostia River WIP (DOEE 2012). Past use, management, and development guidance in the Fort Circle Parks General Management Plan has not likely impacted wetlands as part of Park maintenance. Present and reasonably foreseeable actions, such as stream and wetland restoration efforts completed as part of the Anacostia River WIP (DOEE 2012), Consolidated TMDL Implementation Plan (DOEE 2022), Phase III Watershed Implementation Plan (DOEE 2019), and/or the Anacostia River Corridor Restoration Plan (Biohabitats 2021), would result in temporary wetland impacts with a net increase in wetland extent.

Wetlands in the project areas are located within the Park and protected by NPS ownership for the foreseeable future. When the impacts of the proposed action are combined with the impacts of other recent past, present, and reasonably foreseeable future projects, wetlands would be beneficially impacted. All impacted wetlands will be restored in-kind and enhanced. A net increase in wetland extent due to groundwater restoration is anticipated. The proposed action would have a noticeable contribution to the beneficial impact to wetlands.

3.2.5 *Streams*

Affected Environment

Fort Dupont Creek generally flows north and west toward the culvert under the Anacostia Freeway and CSX railroad bridge before being piped to the Anacostia River. Observations along the channel network suggest the flow regime is primarily perennial along the main stream network with some upper reaches appearing to be intermittent or ephemeral. The relative permanence of the main stream channel indicates a frequent influence of ground water on the system. According to the Baseline Condition and Restoration Report prepared by the Metropolitan Washington Council of Governments (MWCOG) in November 2009, there are three major tributaries (unnamed) to Fort Dupont (AWRP and MWCOG 2009). The headwaters of the smaller tributaries often begin from groundwater seeps, typical of sandy soils in the coastal plain. Ground water flows are often supplemented by uncontrolled stormwater flows from undeveloped areas, frequently creating erosive conditions.

Elevations within the watershed range from 308 feet to 29.5 feet at the CSX line, with an average gradient of 2.2 percent. The main stem base flow ranges from 3.6 to 20 cubic feet per second (cfs) with an average of 11.9 cfs. However, in severe drought periods, the stream goes completely dry.

Decades of uncontrolled stormwater runoff from urbanized catchment areas draining to the headwaters of Fort Dupont Creek and its tributaries have adversely impacted the stream and its biota. The uncontrolled runoff, combined with highly erosive streambank and bed materials, along with a high stream gradient have created a condition of extreme channel downcutting, forest cover loss and sedimentation in the main stem. During field investigations, vertical banks of heights 10 feet or more were observed along the main channel. The erosion has caused undercutting of banks, trees to fall into and across the stream channel, and utility lines to become exposed in the main stem. The resulting conditions are barriers to fish passage and water flow. Currently, 13 barriers remain in the watershed causing differences in water elevations and backwater conditions upstream of the barriers. Full descriptions of the barriers can be found in the Fort Dupont

Subwatershed Restoration 1999 Baseline Stream Assessment Study prepared by MWCOG in April 2000 (MWCOG and USGS 2000).

Shallow streams (aquatic environments where soils and/or vegetation is absent, but wetland hydrology is present) are considered riverine wetlands by NPS in accordance with Director's Order #77-1 (NPS 2002). All streams identified are located within NPS lands. The Wetland Delineation Report prepared by Biohabitats in 2023 provides a more detailed description of the identified streams and their functions.

Environmental Consequences

Impacts of Alternative A

Under Alternative A, the no action alternative, high rates of streambank erosion causing incising (downcutting) stream channels and collapsing stormwater outfalls would continue, as well as the resulting excessive sediment transport to the Anacostia River and loss of canopy trees along eroding streambanks. Aquatic habitat would continue to be degraded by these conditions and fish passage barriers would remain in place.

Cumulative Impacts

The no action alternative would have no new impacts to streams; therefore, there would be no cumulative impacts.

Impacts of Alternative B

Under Alternative B, approximately 18,900 linear feet of stream in PA-01 to PA-09 would be restored to improve stream, floodplain and wetland conditions (**Table 9**). Several restoration approaches were evaluated during the Alternative B development process to determine which approach would best meet the project purpose for each project area while also minimizing impacts to natural, historical, and cultural resources. These stream restoration approaches included floodplain reconnection, valley restoration, natural channel design, and regenerative stormwater conveyance (RSC) and are described in more detail in Chapter 2. After the assessment of site conditions, it was determined that a suite of restoration approaches is necessary at each project area to better meet site specific goals, address specific site constraints, and minimize impacts related to implementation. The proposed combination of restoration approaches at each project area would restore the stream in a manner that would ensure channel stability, while creating and maintaining aquatic and terrestrial habitat features and enhancement of the riparian forest structure.

Table 9. Stream Length and Impacts Summary

System Name	Project Area (PA-0#)	Waters Type (Cowardin Classification)	Tidal or Non-Tidal	TOTAL DELINEATED STREAMS			PROPOSED ACTION STREAM IMPACTS		
				Length (LF)	OHWM Area (SF)	OHWM Area (AC)	Length (LF)	OHWM Area (SF)	OHWM Area (AC)
Fort Dupont Main stem (MS)	1, 5, 6, 9	R2/R3 - Lower/upper perennial stream	NT	10291	78779.81	1.81	9777	78779.81	1.81
TM-1	1	R4 - Intermittent stream	NT	278	0.00	0.00	0	0.00	0.00
TM-2	5	R4 - Intermittent stream	NT	519	1687.78	0.04	502	1687.78	0.00
TM-3	9	R4 - Intermittent stream	NT	206	632.80	0.01	147	632.80	0.01
MS Total							**10426**	**81100.40**	**1.83**
Tributary T1	2, 3	R3/R4 - Upper Perennial/Intermittent stream	NT	2546	17536.24	0.40	2400	16640.31	0.38
T1-1	2	R4 - Intermittent stream	NT	1595	7610.99	0.17	380	4815.49	0.11
T1-2	2	Ephemeral	NT	383	1438.57	0.03	357	1438.57	0.03
T1 Total							**3137**	**22894.36**	**0.53**
Tributary T2	4	R4 - Intermittent stream	NT	1499	5832.89	0.13	1418	5936.11	0.14
T2-1	4	R4 - Intermittent stream	NT	241	103.22	0.00	48	103.22	0.00
T2-2	4	R4 - Intermittent stream	NT	178	297.99	0.01	136	297.99	0.01
T2 Total							**1602**	**6337.31**	**0.15**
Tributary T3	7, 8, 9	R3 - Upper Perennial stream	NT	3326	22242.88	0.51	3154	22242.88	0.51
T3-1	7	Ephemeral	NT	367	1097.99	0.03	115	404.00	0.01
T3-2	8	R4 - Intermittent stream	NT	467	4782.28	0.11	467	4782.28	0.11
T3-3	8	Ephemeral	NT	47	0.00	0.00	0	0.00	0.00
T3-4	7	Ephemeral	NT	21	81.50	0.00	21	89.00	0.00
T3-5	7	Ephemeral	NT	99	0.00	0.00	0	0.00	0.00
T3-6	7	Ephemeral	NT	0.00	0.00	0.00	0	0.00	0.00
T3 Total							**3758**	**27518.16**	**0.12**
Project Total							**18,922**	**137,850**	**2.62**

Cumulative Impacts

Past urbanization actions have contributed to the degradation of streams in the project areas. Development throughout the watershed has increased the amount of impervious area, which results in a higher volume of stormwater discharge and a faster stormwater runoff peak discharge during storm events. These past environmental trends of poor stream and habitat conditions within the Fort Dupont watershed are documented in baseline studies as a result the Anacostia River WIP (DOEE 2012). Past use, management, and development guidance in the Fort Circle Parks General Management Plan has not likely impacted streams as part of Park maintenance. Present and reasonably foreseeable actions, such as stream and wetland restoration efforts completed as part of the Anacostia River WIP (DOEE 2012), Consolidate TMDL Implementation Plan (DOEE 2022), Phase III Watershed Implementation Plan (DOEE 2019), and/or the Anacostia River Corridor Restoration Plan (Biohabitats 2021), would result in stream impacts but would provide substantial improvements to stream functions.

The streams are located within the Park and protected through NPS ownership for the foreseeable future. In addition, current and future development projects would be required to comply with stormwater management and erosion and sediment control regulations, minimizing the potential for increased volumes of stormwater to be discharged downstream. When the impacts of the proposed action are combined with the impacts of other recent past, present, and reasonably foreseeable future projects, streams would be beneficially impacted. The proposed action would have a noticeable contribution to the beneficial impact.

3.2.6 *Vegetation*

Affected Environment

Upland forest occupies much of project areas PA-01 through PA-08 growing on the steep side slopes and ridges in this part of the Park. The species composition of these upland areas, within and around the proposed limits of disturbance, consist of mature chestnut oak (*Quercus montana*), black gum (Nyssa sylvatica), white oak (*Quercus alba*), red oak (*Quercus rubra*), American beech (*Fagus grandifolia*), and mockernut hickory (*Carya tomentosa*). Mesic areas within ravines associated with small stream channels contain a mix of tulip poplar (*Liriodendron tulipifera*), sweetgum (*Liquidambar styraciflua*), American beech, elm (*Ulmus spp.*), and red maple (*Acer rubrum*). Although the understory is relatively bare from heavy deer pressure, some north facing slopes and ravines contain small stands of mountain laurel (*Kalmia latifolia*). Forest edges and areas of recent disturbance contain abundant non-native invasive species (NNIs) including multiflora rose (*Rosa multiflora*), Japanese honeysuckle (*Lonicera japonica*), shrub honeysuckle (*Lonicera nitida*), oriental bittersweet (Celastrus orbiculatus), and others, as well as other native vines such as poison ivy (*Toxicodendron radicans*) and common greenbrier (*Smilax rotundifolia*).

In PA-09, although some upland species are present at the periphery much of the project area is flatter, wetter, and more disturbed than the remaining upland project areas. PA-09's proposed limits of construction contain more Coastal Plain floodplain species such as American sycamore (*Platanus occidentalis*), sweetgum, silver maple (*Acer saccharinum*), red maple, boxelder (Acer negundo), black willow (*Salix nigra*), ironwood (*Carpinus caroliniana*), river birch (*Betula nigra*) and elm species in the canopy. Non-native invasive species are abundant in PA-09 and include species such as white mulberry (*Morus alba*), shrub honeysuckle and Siberian elm (*Ulmus pumila*).

Invasive species control and management measures will be taken during and after construction within the limits of disturbance. Manual removal and chemical treatment of NNI will occur over a minimum of two growing seasons and will be detailed in an associated Invasive Species Control Plan. Chemical treatment

will be executed using a professional chemical application by a licensed contractor in the District of Columbia.

In addition, Biohabitats completed a tree impact assessment for project areas PA-01, PA-02, and PA-03 over a 50-year period to assess the effect on forest impacts with and without stream restoration activities implemented. PA-01, PA-02, and PA-03 were selected for the assessment as this proposed construction cluster has the most forest cover and would provide a worst-case scenario for the proposed restoration project. Pre-restoration/existing tree numbers were based on data obtained through a tree survey of trees greater than 5 inches in diameter at breast height (DBH) and a series of 1/100th acre sample plots. The assessment accounts for losses due to initial construction impacts, bank erosion, attrition (die off) due to poor conditions such as disease and deer or NNI pressure, anticipated hydromodification or increase in wet conditions, as well as gains due to restoration plantings and natural recruitment up to 50-years post construction. Biohabitats assumed any stream restoration would significantly reduce the rate of erosion and that stream bank erosion and subsequent tree losses would continue unabated in a non-restoration scenario. With restoration, it was assumed some tree loss would occur as mature trees are unable to tolerate increased wetland conditions in the first 5 years and some loss would occur throughout post-construction from poor conditions (such as disease and deer or NNI pressure). It was also assumed that natural tree recruitment would be minimal in both scenarios because dense deer populations and competition from non-native invasive vegetation would prevent significant numbers of seedlings from reaching the sapling stage. **Table 10** presents the assessment findings over the 50-year period. The restoration scenario within PA-01, PA-02, and PA-03 compared to the non-restoration scenario consistently provides more total trees for each year calculated.

Table 10. Tree Impact Assessment Summary

Time Period	Forest Impacts without Restoration (Number of Trees)	Forest Impacts with Restoration (Number of Trees)
Pre-Restoration	4,517	4,517
Post-Restoration	4,497	7,346
5 Years Post-Restoration	3,568	6,682
10 Years Post-Restoration	2,891	6,424
20 Years Post-Restoration	1,723	5,942
50 Years Post-Restoration	-459*	4,644
*A negative value indicated all trees would be lost to stream bank erosion or poor conditions even with accounting for natural recruitment.		

Environmental Consequences

Impacts of Alternative A: No Action

Under Alternative A, erosion of the streambanks would continue to cause a steady increase in tree loss and invasive species coverage within the Park; however, Alternative A would have no new impact on vegetation.

Cumulative Impacts

The no action alternative would have no new impact on vegetation. Therefore, there would be no cumulative impacts.

Impacts of Alternative B

Under Alternative B, the following vegetation related considerations and best practices would be implemented as a result of the impacts associated with the proposed restoration project:

- Invasive species will be controlled and monitored for a minimum of two growing seasons via manual and chemical applications as detailed in an associated Invasive Species Control Plan.
    - Pre- and post-construction treatment for invasive species would be completed within each of the project areas.
- Existing open areas and paths will be temporarily unavailable for public use in select locations during construction and returned to prior condition after completion of the project.
    - Construction access locations off surrounding public rights-of-way would target open areas, areas with existing paths, abandoned roads, and areas of dense non-native invasive vegetation. Likewise staging and stockpiling areas will target existing open areas.
    - As discussed in section 2.3.8 Construction Methods, approximately 19,500 linear feet or 2.5 acres of existing trails and approximately 0.7 acres of open space will be temporarily unavailable when used for construction access and approximately 4.0 acres of open space will be temporarily unavailable when used for staging and stockpiling during construction.
- Temporary access paths will go through natural areas.
    - Construction access paths through natural areas would be field located to avoid and minimize impacts to vegetation (tree and native vegetation) and wetland areas.
    - As discussed in section 2.3.8 Construction Methods, natural areas refer to the approximately 1.9 acres of forested areas where proposed construction access is proposed. Of that 1.9 acres, 1.7 acres will be mulch construction access, 0.04 acres will be hardwood mats, and the remainder be limited to low impact ATVs.
    - Protection measures such as hardwood mulch and hardwood mats will be used to minimize soil compaction and impacts to tree roots.
- Vegetation will be cleared and trees will be removed in select areas.
    - Vegetation clearing limits and tree removals would be clearly marked in the field by the contractor and approved by NPS.
    - Native trees removed would be reused onsite within the wetland floodplain limits to provide floodplain roughness and support habitat diversity.
    - At the completion of construction, all proposed planting zones will be planted with native species of trees, shrubs and seed from sources within the same ecoregion. All impacted forested areas would be replanted as forest.
    - Vegetation clearing and tree removals will occur within approximately 7.2 acres where grading is proposed and within approximately 1.5 acres of a non-native invasive species invaded forest in PA-05 proposed for NNI control and staging and stockpiling use during construction.

Cumulative Impacts

Past urbanization actions have contributed to the impacts on forested conditions and establishment of non-native invasive species. These past environmental trends of tree fall/loss on highly erosive stream banks and invasive species presence within the Fort Dupont watershed are documented in baseline studies as a result of the Anacostia River WIP (DOEE 2012). Past use, management, and development guidance in the Fort Circle Parks General Management Plan addressed the need for invasive species control as part of Park maintenance. While present and reasonably foreseeable actions, such as restoration efforts completed as part of the Anacostia River WIP (DOEE 2012), Consolidate TMDL Implementation Plan (DOEE 2022), Phase III Watershed Implementation Plan (DOEE 2019), and/or the Anacostia River Corridor Restoration Plan (Biohabitats 2021), would result in some tree loss during construction, each would reforest the riparian area with native tree species and decrease the non-native invasive species coverage after implementation.

When the impacts of the proposed action are combined with the impacts of other recent past, present, and reasonably foreseeable future projects, vegetation would be beneficially affected in the long-term, but would experience adverse impacts during and immediately after construction until the forested areas are re-established and non-native invasive species control is implemented. The proposed action would have a noticeable contribution to the beneficial cumulative impacts to the forest community and vegetation diversity.

4 Consultation and Coordination

4.1 Public Involvement

Public scoping for the project was completed through NPS's Planning and Public Comment (PEPC) website. A virtual public scoping meeting was held on January 31, 2023, using the Cisco WebEx platform, from 6 p.m. to 8 p.m. The public was invited to submit any issues or concerns online at the project webpage (https://parkplanning.nps.gov/projectHome.cfm?projectID=68832) or via U.S. Mail to the attention of the superintendent Fort Dupont Creek Restoration Project Comments National Capital Parks – East 1900 Anacostia Drive, SE Washington, DC 20020 . The 30-day public comment period extended from January 31, 2023, to March 2, 2023.

4.2 Agency Consultation and Coordination

4.2.1 *Section 7 of the Endangered Species Act*

Coordination with USFWS in accordance with Section 7 of the Endangered Species Act through the Information for Planning and Consultation (IPaC) database occurred on August 4, 2021. According to the species list provided by the US Fish and Wildlife Service, there are no critical habitats within the area of interest under the office's jurisdiction for the northern long-eared bat. According to the associated consistency letter provided for the project area, "your project has reached the determination of "No Effect" on the northern long-eared bat. If there are no updates on listed species, no further consultation/coordination for this project is required with respect to the northern long-eared bat." The consistency letter was generated through the US Fish and Wildlife Service ECOS-IPaC system on August 4, 2021; however, both the species list and the consistency letter were updated on March 16, 2023 and May 17, 2023 respectively, as species lists need to be updated every 90 days and the uplisting of the Northern Long-eared Bat from threatened to endangered required a new letter.

Results from the more recent screening states that the project may affect bat populations and the consistency letter was sent to a USFWS representative for review. The IPaC determination fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). This determination is considered interim as all current guidance regarding the Northern Long Eared Bat is also interim until April of 2024. Should new guidance be presented for projects concerning the District of Columbia, all restrictions will be observed as applicable.

4.2.2 *Section 106 of the National Historic Preservation Act*

Pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations (36 CFR Part 800), NACE initiated consultation with the DC SHPO in a letter dated October 10, 2022. The letter briefly described the Project, defined the APE, and identified historic properties within the APE.

On January 20, 2023, DC SHPO responded acknowledging Project Area 10 (PA-10) located in Anacostia Park along the banks of the Anacostia River and adjacent to the historic seawall had been removed from this EA and agreeing with the list of proposed consulting parties. DC SHPO also concurred with the draft APE boundary but recommended that "it be expanded slightly to include the areas outside of park boundaries where the direct and indirect effects of construction and the fully completed project will be perceptible (e.g., across Massachusetts and Alabama Avenues, SE)." DC SHPO also requested photographs and any information that may determine if culverts and other built environment features in the vicinity of proposed stream daylight are historically significant.

NACE and DOEE responded on March 10, 2023, with a letter (Appendix A). A photographic log of each stream daylighting location with associated culvert and/or footbridge and a map with a revised APE extending the boundary across the adjacent street at construction access and staging areas was enclosed.

On March 14, 2023, DC SHPO responded with an effects determination letter indicating "this overall undertaking will have 'no adverse effect' on historic properties." The response and effects determination letter from DC SHPO are provided in Appendix A.

4.2.3 *Tribal Consultation*

Tribal consultation initiation letters dated October 10, 2022, were sent to state and federal recognized tribes. State recognized tribes included Piscataway Conoy Tribe, Piscataway Indian Nation, Rappahannock Tribe, and Upper Mattaponi Indian Tribe. Federal recognized tribes included the Catawba Indian Nation, Cedarville Branch of the Piscataway Conoy (Piscataway Conoy Tribe), Chickahominy Indian Tribe, Chickahominy Tribe Eastern Division, Choptico Band of Piscataway (Piscataway Conoy Tribe), Delaware Nation, Monacan Indian Nation, Nansemond Indian Nation, Pamunkey Indian Tribe, Shawnee Tribe and Absentee Shawnee Tribe of Indians of Oklahoma.

The Monacan Indian Nation responded via email on January 3, 2023. The Nation "does not wish to actively participate in this consultation project because this project is outside our ancestral territory." The response is included in Appendix A. Responses have not been received from the other tribal contacts.

4.3 Required Permits, Approvals, and Plans for Proposed Action

Anticipated permits and approvals for construction associated with the stream and wetland restoration project at the park are summarized in **Table 11**. Design plans are typically submitted as a requirement or as supporting documentation for permit applications. Design plans submitted with permit applications may include the following:

- Existing conditions (e.g., utilities, property lines and ownership, delineated wetlands and waters of the United States, and major topographic features)
- Proposed conditions including stream alignment, detailed grading, and type and location of instream structures
- Longitudinal profile of the existing and proposed stream bed conditions showing utility and instream structure locations
- Typical design cross sections through the project
- Erosion and sediment control plans show locations of controls, construction access, and staging and stockpiling areas
- Standard erosion and sediment control details
- Standard and project specific stream and wetland restoration details (e.g., instream structures)
- Sequence of construction

Table 11. Permits and Approvals

Permit/Approval	Issuing Agency	Description
Section 404 Permit for Discharge of Dredged or Fill Material into Waters of the US	USACE	Permit required for any activity that involves filling Waters of the U.S., including wetlands. Authorizes only necessary and unavoidable impacts.
Section 401 Water Quality Certification	DOEE	Before issuing a Section 404 permit, the applicant must obtain a certification from DOEE pursuant to CWA § 401 that the discharge will comply with the District water quality criteria (33 U.S.C. § 1341).
Special Use Permit	NPS	Permit required for any work within a NPS owned or controlled area.
Erosion and Sediment Control Permit	DOEE	Permit required prior to construction for projects that involve land disturbance of at least 5,000 square feet.
Stormwater Management Permit	DOEE	A Stormwater Management Plan (SWMP) may be required for restoration work, depending on the detailed design plans.
National Pollutant Discharge Elimination System (NPDES) Construction General Permit and Stormwater Pollution Prevention Plan (SWPPP)	EPA	Permit required for all activities that have more than one acre of land disturbance. Notice of Intent (NOI) and SWPPP required to be submitted to the USEPA Region 3 office. Copy of the SWPPP to be submitted to DOEE.
Floodplain Management Review	DOEE	A floodplain management review may be required for restoration work, depending on the detailed design plans.
Conditional Letter of Mapping Revision (CLOMR)	FEMA	Review and comment required if the project would affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective Base Flood Elevations, or the Special Flood Hazard Area. Based on the proposed project analysis, it is not anticipated to be needed as initial models predict no rises within the FEMA regulated flood zone. Water surface increases outside of FEMA zone are expected to remain on park property, requiring no changes to the District Floodplain.
Building Civil Permit (BCIV)	DOB	Permit required for grading activity associated with the proposed restoration project.
Public Space Permit	DDOT	For staging, stockpile and construction access from a public right-of-way

4.4 List of Preparers

U.S. Department of the Interior, National Park Service
Michael Commisso, Deputy Superintendent National Capital Parks-East
Joel Gorder, Regional Environmental Coordinator
Daniel Weldon, Cultural Resources Program Manager
Mikaila Milton, Biologist, Resource Management Division
Robert Mocko, Environmental Protection Specialist
Matthew Schley, Regional Hydrologist
Lara Hannon, Program Manager - Natural Resources and Environmental Compliance
Sean McGinty, Public Information Officer
Vince Vaise, Public Information Officer

District of Columbia, Department of Energy and Environment
Josh Burch, Environmental Protection Specialist

Federal Highway Administration, Eastern Federal Lands Highway Division
Lisa Landers, Environmental Protection Specialist

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Richard O'Gara, Senior GIS Analyst
Bipin Pokharel, Senior Environmental Scientist and GIS Specialist
Janmayjay Ranjit, Environmental Scientist and GIS Specialist
Jordan Rivers, Environmental Engineer
Pratigya Upadyaya, Project Manager and Senior Environmental Scientist

Amec Foster Wheeler (Cultural Resources Overview)
Hank McKelway, Cultural Resource Manager
Richard Stallings, Senior Archeologist

NSpiregreen Inc. (Public Scoping)
Jimena Larson, Senior Environmental Engineer
Chancee Lundy, Principal Environmental Manager
Stacy Weisfeld, Planner II

WSP
Gregory Katz, Senior Archeologist
Susan Van Dyke, Environmental Scientist
Meredith McCulley, Assistant Architectural Historian
Rudi Byron, Director

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