Anacostia Park
Anacostia Riverwalk Trail
Environmental Assessment

December 2004
Executive Summary

This Environmental Assessment was prepared in coordination with the District of Columbia Department of Transportation to assist the National Park Service in identifying and evaluating the potential environmental impacts and benefits of the Anacostia Riverwalk. The proposed action is the creation of a multiuse trail and its connecting points that run on the east side of the Anacostia River from the Washington Navy Yard to Benning Road, and on the west side of the Anacostia River from the Anacostia Naval Station to the Bladensburg trail in Prince George’s County, Maryland.

The proposed trail is a key component of the Anacostia Waterfront Initiative, which is the Framework Plan for revitalizing the District’s waterfront areas. The Anacostia Waterfront Initiative proposes a comprehensive 48-mile trail system, including twenty miles of trails along waterfront areas that would provide residents and visitors access to the District’s riverfronts.

The purpose of the Anacostia Riverwalk is to provide a safe and convenient means for park visitors to access the Anacostia waterfront and enjoy Anacostia Park. In order to do so, the National Park Service plans to construct a trail system that would provide bicyclists and pedestrians with:

- Nearly continuous access to the east side of the river from South Capitol Street to the Bladensburg Trail in Maryland;
- Continuous access to the west side of the river from 11th Street to Benning Road; and
- Safe and convenient access points to enter the Park from the surrounding neighborhoods.

This Environmental Assessment analyzes potential impacts of the proposed alternatives on the human environment in accordance with the National Environmental Policy Act of 1969. During the environmental review process, the National Park Service considered a broad range of environmental issues that could affect communities and natural resources on a general (or system-wide), regional, and local level. This approach allowed identification and assessment of potential environmental impacts and the development of reasonable preliminary environmental mitigation measures to address potential adverse impacts.

For the purpose of analyzing impacts in this Environmental Assessment, the National Park Service divided the proposed project into three design sections. The National Park Service considered multiple trail alignments for each section (including the No-Action Alternative), as follows:
**Design Section 1** includes all portions of the trail east of the Anacostia River from the Anacostia Naval Station at the southern extent of the project north to Benning Road. The National Park Service considered two trail alignments along with the No-Action Alternative.

**Design Section 2** includes all portions of the trail west of the Anacostia River from the Washington Navy Yard at the southern extent of the project north to Benning Road. The National Park Service considered two trail alignments along with the No-Action Alternative.

**Design Section 3** includes all portions of the trail east of the Anacostia River from Benning Road north to the Bladensburg Trail in Prince George’s County, Maryland. The National Park Service considered three trail alignments along with the No-Action Alternative.

The Preferred Alternative in all three design section would have no or negligible impacts to the areas of socio-economic environment, agricultural lands and prime and unique farmland soils, air quality, noise, Indian Trust resources, environmental justice, community facilities and services, park operations, floodplains, wildlife and habitats and rare, threatened and endangered species. No impacts would occur to historic or archaeological sites in design sections 1 and 2; however, minor impacts may occur to an archaeological site in Design Section 3. One archaeological site that may have been previously destroyed lies within the preferred alignment.

Minor impacts would occur to planning documents since it would require a minor change to trail network concepts but the trail still conforms to planning document concepts. Due to minor encroachments, water quality, wetlands and waterways would incur minor impacts.

Due to the conversion of open land to trail, the preferred alternative would have moderate impacts with regard to park and recreation facilities. Minor and short-term impacts would also occur to wildlife and habitat, wetlands and water quality during construction. The nature, extent, and proposed mitigation for minor and moderate impacts are detailed in the Environmental Assessment.

By increasing access to the park and utilizing low-impact development techniques during construction and operation of the proposed facility in accordance to the National Park Service mission, neighborhoods, visitor experience, and the visual/aesthetic qualities of the park will benefit.

**Public Outreach**

A Public Hearing to elicit public comment on the Environmental Assessment is scheduled for January 6, 2005. The public hearing will be held from 7:00 to 8:30 p.m. at the Marshall Heights Community Development Corporation (MHCDC) offices at 3939 Benning Road NE in Washington, DC. MHCDC is located on the east side of the Anacostia River near the geographic center of the study area. The public hearing will be preceded by an open house.

The environmental document is posted for public review on the District Department of Transportation (http://ddot.dc.gov under Transportation Studies) and National Park Service (www.nps.gov/anac) websites. The document is also posted on the official project website, www.arwstudy.com. The project website includes the document as well as the capacity to accept
public comments. The comments will be summarized and reviewed by the study team for consideration in preparation for the final environmental document.

Note To Reviewers And Respondents

If you wish to comment on the Environmental Assessment, you may mail comments to the name and address below by January 20, 2005. Public comments, including names and home addresses of respondents, will be available for public review during regular business hours. Individual respondents may request that we withhold their home address from the record, which we will honor to the extent allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. We will make all submissions from organizations or businesses and from individuals identifying themselves as representatives of organizations or businesses available for public inspection in their entirety.

Please address all comments to:

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Or on the project website www.arwstudy.com.
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CHAPTER 1: PURPOSE AND NEED FOR ACTION

1.1 INTRODUCTION

The National Park Service (NPS) National Capital Parks-East, in collaboration with the District of Columbia Department of Transportation (DDOT), proposes to construct multi-use trails along the east and west sides of the Anacostia River within and adjacent to Anacostia Park in Washington, D.C. (District) - see Figure 1-1. This Environmental Assessment documents the evaluation of the potential effects resulting from implementation of this trail plan, identified as the Anacostia Riverwalk (ARW), and the proposed mitigation for unavoidable impacts.

This Environmental Assessment has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the regulations of the Council on Environmental Quality for implementing NEPA (40 Code of Federal Regulation (CFR) 1500-1508), the National Park Service’s Director’s Order 12, Conservation Planning, Environmental Impact Analysis, and Decision-making, NPS Director’s Order 77-1 Wetland Protection, NPS Director’s Order 77-2 Floodplain Management, and Section 800.8 of the Advisory Council on Historic Preservation’s regulations (36 CFR 800)\(^1\). The process and documentation required for preparation of this Environmental Assessment will also be used as the foundation for complying with Section 106 of the National Historic Preservation Act.

1.2 PURPOSE

The purpose of the project is to provide a safe and convenient means for park visitors to access the Anacostia waterfront and enjoy Anacostia Park (Park). In order to do so, NPS plans to construct a trail system that would provide bicyclists and pedestrians with:

- Nearly continuous access to the east side of the river from South Capitol Street to the Bladensburg Trail in Maryland, a distance of seven miles;
- Continuous access to the west side of the river from 11th Street to Benning Road, a distance of three miles; and
- Safe and convenient access points to enter the Park from the surrounding neighborhoods.

The proposed trail is a key component of the Anacostia Waterfront Initiative (AWI), which is the Framework Plan for revitalizing the District’s waterfront areas. The AWI is the product of the commitment made by twenty Federal and local agencies to cooperatively develop a vision for the waterfront. The commitment, formalized in March 2002 with a Memorandum of Understanding (MOU), led to three years of planning, public meetings, and public discussion. The resulting AWI proposes a comprehensive 48-mile trail system, including twenty miles of trails along waterfront areas that would provide residents and visitors access to the District’s riverfronts (See Appendix 1 for the MOU and AWI Vision Map). While the ARW would be a valuable contribution towards realizing the overall AWI plans, it also would have independent utility because the trail does not depend on the AWI to meet many of the visitor and community needs for such a facility.

\(^1\) Although DDOT is providing engineering design services and is supporting preparation of the environmental document, their efforts are directly funded by congress. Therefore, Federal Department of Transportation environmental regulations and guidance (such as Section 4(f) requirements) are not applicable to this assessment.
Fig 1-1. Anacostia Riverwalk Regional Map
1.3 NEED

The need for the ARW is interrelated with transportation and recreational considerations. In the project area, there is limited and discontinuous bicycle and pedestrian access between the riverfront and adjacent communities. Residents of many communities that abut Anacostia Park, such as Lincoln Park, Kingman Park, Langston, Barry Farms, Twining, Greenway, and Central Northeast, do not have pedestrian or bicycle access to the Park even though they may live only a few hundred feet from the park boundary. In some cases, limited-access highways and bridges isolate the neighborhoods adjoining the Park from the Park. On both sides of the Anacostia River, existing Park roads generally connect with major arterials and highways that carry high volumes of vehicular traffic, which is not ideal for pedestrians and bicyclists.

Visitors that do not drive to Anacostia Park currently must rely on a fragmented transit system, District streets, internal park service roads, and limited trails. Currently, in addition to bus service, both the Green and Blue/Orange METRO lines pass close to the Park and have stations located within one-half mile of the riverfront. There is no signage directing visitors from the stations and bus stops to the Park.

Within the Park, visitors must cross the park roads to reach the riverfront and there is no separate facility for bicyclists and pedestrians. On the west side, Water and M streets, which run from the Washington Navy Yard to RFK Stadium, serve as the Park road. These roads dead end just east of the existing CSX rail line. From this point north the only park roadway is the RFK Stadium service road and parking lots. These roads are narrow and do not have lane markings to separate two-way vehicular traffic and bicyclists. Furthermore, on event days, heavy traffic is present on the RFK stadium roads making bicycle or pedestrian usage difficult. On the east side, Anacostia Drive, which runs from South Capitol Street to the recreation area just north of Pennsylvania Avenue, serves as the Park road. It is also narrow and does not have lane markings separating traffic.

Few trails exist that allow park users to walk or ride from one area of the park to another. For example, a visitor wishing to travel from the Anacostia Park’s basketball courts located near the River Terrace Community to the Anacostia Recreation Center near Pennsylvania Avenue would find that the existing marked and paved trail ends abruptly at East Capitol Street. Another fragmented trail is located between East Capitol Street and the boat ramp parking facility near the Pavilion. This portion of the Park contains an unmarked gravel maintenance road that also crosses an active CSX rail line at multiple locations. These crossings are at-grade, not equipped with warning signals and when rail cars are staged on the track, crossing the track is impossible. An isolated pedestrian “River Trail,” is located between Kenilworth Aquatic Gardens and the Anacostia River; it is primarily an interpretive trail for the Kenilworth Aquatic Gardens and the Anacostia River wetlands and does not connect to any other trail segment.

On a regional level, multiple regional trails, including the Bladensburg Trail, the Potomac Heritage Scenic Trail, Rock Creek Trails, Mount Vernon Trail, Anacostia River Tributary Trails, Anacostia Greenway, Suitland Parkway Trail, and Fort Circle Trails surround and approach the Park area. Smaller trail elements also exist or are proposed as well. Connections among some of
these trails would provide opportunities for recreational distance riders and bicycle commuters. Figure 1-2 illustrates some of the existing and proposed trails in the region.

The Anacostia area is densely populated and highly developed, and while recreational opportunities are present, they are not adequately accessible to meet the needs of the surrounding community and national visitor. In the District’s recent Strategic Neighborhood Action Plan efforts, nearly all neighborhoods that abut Anacostia Park identified increasing recreational opportunities as one of their top priorities, along with related priorities of increased public amenities, increased open space, and youth development.

Anacostia Park is one of Washington DC’s largest and most important recreational areas and receives heavy, year-round use and attracts visitors from around the region and nation. While Anacostia Park’s 1,200 acres offer passive and active recreation (see Section 3.2) they do not offer extended biking and walking opportunities. Nor, as described above, is the Park itself easily accessible to the surrounding communities and national visitor.

1.4 OTHER PROJECTS AND PLANS

As part of the analysis, it was considered whether the ARW would conflict with or preclude implementation of existing plans for the Anacostia Area. In addition, NPS identified plans that would contribute to the potential cumulative environmental impact of the proposed ARW. The plans included in this analysis are:

- NPS’ General Management Plan for Anacostia Park (currently in development);
- National Capital Planning Commission’s Extending the Legacy and Memorials and Museums Master Plan;
- The District of Columbia Office of Planning (DCOP) East of the River Initiative;
- DCOP Strategic Neighborhood Action Plans; and
- Multi-agency Anacostia Waterfront Initiative.

1.5 IMPACT TOPICS DISCUSSED IN THIS ANALYSIS

On the basis of Federal laws, regulations, Executive Orders, National Park Service Management Policies (2001), the Environmental Screening Form (ESF) from Director’s Order 12, and from NPS knowledge of limited or easily impacted resources, impact topics were identified for detailed analysis, including construction impact and cumulative effects analysis, in this Environmental Assessment. Impact topics that were identified as non-controversial and the potential for adverse impact was negligible were eliminated from detailed analysis.

1.5.1 Topics Included In Detailed Analysis

- **Neighborhoods**—Meeting community needs for increased access to the riverfront, transportation linkages, and recreation is part of the purpose for developing the ARW. Implementation of the ARW is intended to provide these benefits; therefore, effects to neighborhoods and communities are included in the detailed analysis.
Fig 1-2. Anacostia Regional Trails
• **Parks and Recreational Facilities**—Providing connections to facilities within Anacostia Park and to surrounding parks is part of the purpose and need of the project; therefore, effects to parks and recreational facilities as a system is included in the detailed analysis.

• **Visitor Use and Experience**—Anacostia Park is the largest component of the National-Capital Parks East park system. Over 1 million people visit this park system each year. The proposed ARW is expected to increase use and improve the visitor experience within Anacostia Park; therefore, this issue is included in the detailed analysis.

• **Area Planning Documents**—NPS is in the process of developing and analyzing general management plan strategies for Anacostia Park. Additionally, the area surrounding the Park is the focus of a major District plan; therefore, this issue is included in the detailed analysis.

• **Archaeological and Historic Resources**—Several potentially significant archaeological sites and areas likely to yield artifacts exist within the Park; therefore, the potential for effects to these resources is included in the detailed analysis.

• **Visual and Aesthetic Resources**—As the nation’s capital, the District has views and vistas that have cultural and historical significance. This project also has the potential to offer visitors new views of the Anacostia River and its associated natural areas as well as contribute or detract from the aesthetics of Anacostia Park; therefore, this issue is included in the detailed analysis.

• **Wildlife and Habitats**—A variety of habitats that support different types of wildlife are present in the study area. Allowing public access to some of these areas is a purpose and need of the project; therefore, the potential impacts of this access are included in the detailed analysis.

• **Wetlands and Floodplains**—Areas within the 100-year floodplain, riparian buffers and several types of wetlands exist in the project area. Federal and local laws and regulations, including Section 404 of the Clean Water Act regulate development in these areas. Additionally, the *NPS Director’s Orders 77-1 Wetland Protection and 77-2 Floodplain Management* set out policies for protecting these resources; therefore, this issue is included in the detailed analysis.

• **Water Quality**—The quality and quantity of stormwater runoff is regulated at the Federal and local level. As the proposed action would increase impervious areas, the potential of the project to compromise water quality is included in the detailed analysis.

• **Contamination**—Sites with documented contamination exist within or in close proximity to the project area; therefore, this issue is considered in the detailed analysis.
1.5.2 Topics Eliminated From Detailed Analysis

- **Social and Economic Environment**—Over 50,000 people live within walking distance (approximately one-quarter mile) of the proposed ARW trail alignments. Most reside within the District, with a small percentage in Bladensburg, Colmar Manor, and other suburbs of Maryland. Overall, the population is primarily minority (over 90% are African American) and many areas contain significant numbers of persons whose income falls below poverty level. Preliminary analysis of socioeconomic considerations indicated that none of the alternatives considered for this project would:
  - Require relocation of people, businesses, or community facilities;
  - Diminish community cohesion by displacing any residences, isolating one part of the community from another, or creating barriers between them;
  - Increase or decrease employment opportunities;
  - Spur economic development or induce changes in land use or zoning that would disrupt neighborhood patterns;
  - Impede the ability of emergency service providers to access parts of the study area; or
  - Change access to any community facilities outside of Anacostia Park.

NPS determined that including Neighborhoods and Communities in the detailed analysis would effectively address the issues of concern in the socioeconomic environment (e.g., access to the Park and increased recreational opportunities). On this basis, impacts to the listed aspects of the socioeconomic environment are negligible.

- **Environmental Justice**—Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (Clinton, 1994), directs Federal agencies to identify and address disproportionately high and adverse human health or environmental effects that its programs, policies, and activities may have on minority and low-income populations. Although socioeconomic data indicated that the study area includes minority and low-income populations, the trail itself would not result in an increase in the potential for disproportionately high and adverse effects to Environmental Justice populations. The affected population was also part of the overall AWI planning process, which included many meetings in environmental justice population areas, thus allowing for meaningful participation of minority and low-income residents.

- **Park Operations**—DDOT will construct, operate and maintain the proposed trail; therefore, the proposed project would have a negligible impact on park operations and this issue was eliminated from further study.

- **Agricultural Lands and Prime and Unique Farmland Soils**—No farms exist in the project area and there are no areas containing prime and unique farmland soils that meet the criteria for protection under the Federal Farmland Protection Policy Act; therefore, this issue was eliminated from detailed analysis.
• **Air Quality**—The primary source of air quality impacts is related to vehicular traffic and emissions. The proposed ARW would provide non-motorized travel options to the area in the form of bicycle and pedestrian traffic that does not generate a significant amount of air pollutants, thus there would be negligible effect on air quality. In addition, Washington DC is a non-attainment area for ground level ozone according to federal health standards and a reduction in the amount of vehicular traffic near the Park has a potential to have a beneficial impact to local and regional air quality.

• **Noise**—Anacostia Park is located in an urban setting and ambient noise sources include traffic, railroads, aircraft, and other urban activities. Bicycling and walking do not generate significant amounts of noise-especially in comparison to the surrounding area; therefore, noise was removed from further consideration in this Environmental Assessment.
CHAPTER 2: DESCRIPTION OF ALTERNATIVES

2.1 INTRODUCTION

This chapter describes the ARW Alternatives, including the No-Action Alternative, evaluated in this Environmental Assessment. Early in the study, NPS considered multiple concept alternatives for the location and design of the ARW. Based on preliminary analysis of how well the concept met the project purpose and need and the environmental, engineering, and construction feasibility, some concepts were eliminated from further consideration (see Section 2.4). To facilitate presentation and evaluation of the alternatives, the project area has been divided into three design sections described as follows:

- **Design Section 1** consists of the east side of the Anacostia River between the South Capitol Street and Benning Road.

- **Design Section 2** consists of the west side of the Anacostia River between the Washington Navy Yard and Benning Road.

- **Design Section 3** consists of the east side of the Anacostia River from Benning Road to the Bladensburg Trail in Maryland.

2.2 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, NPS would not construct a new trail or make any enhancements to existing bike and pedestrian facilities. NPS would continue to maintain and operate Anacostia Park and implement minor improvements as part of its normal maintenance and safety operations. NPS would continue to develop and ultimately finalize its General Management Plan. The No-Build Alternative serves as a basis for comparing all of the other alternatives.

2.3 ACTION ALTERNATIVES

The Action Alternatives consist of multi-use trail options that generally parallel the Anacostia River. The typical section (e.g., the width, material, and landscaping) for the trail would vary by location.

For example, in areas that are currently maintained as turf, the section would consist of a 10- to 12-foot wide asphalt path that meanders around existing trees and wetlands. The trail would be landscaped with additional trees and plants, similar to the representative paved section shown in Figure 2-1. In environmentally sensitive areas, such as wetlands and river edges, the walkway may be constructed as a boardwalk, as shown in Figure 2-2. Other portions of the trail will include reconstructing existing roadways, as shown in Figure 2-3 and constructing the trail in existing sidewalk areas, as shown in Figure 2-4.
2.3.1 Design Section 1

Design Section 1 is illustrated in Figure 2-5.

Alternative 1A (Preferred) would begin just south of the South Capitol Street Bridge at the terminus of an existing trail that runs from the Anacostia Naval Station to the South Capitol Street Bridge. The trail would meander around the large trees and wetlands located within the southernmost section of Anacostia Park between Anacostia Drive and the river. From approximately 11th Street north to Pennsylvania Avenue, where the area between Anacostia Drive and the river becomes quite narrow, existing Anacostia Drive would be relocated approximately 20 feet to the east, to allow placement of the trail between the relocated road and the river. The west edge of the proposed trail would be located at the west edge of the existing roadway. A 5-foot unpaved buffer would separate the trail users from the road. On its new location, Anacostia Drive would be approximately 22 feet wide and would include the same number or more parking bays than exist today. Just south of Pennsylvania Avenue, the relocated Anacostia Drive would join with existing Anacostia Drive.
Fig 2-5 ARW Alternatives – Design Section 1
From approximately Pennsylvania Avenue north, the trail would generally parallel the river until it reaches the boat ramp parking area. In this area, the trail would cross Anacostia Drive. Anacostia Drive would be striped and signed to alert drivers of the presence of bicyclists and pedestrians. From that point, the trail would pass around the boat ramp parking area, parallel the railroad for a short distance, and then pass over the CSX tracks on a new 16-foot wide pedestrian bridge. From the CSX tracks north, the trail would be located on the existing NPS service road until it connects with an existing trail just north of East Capitol Street. This service road, currently unpaved, ranges in width from 14 to 20 feet wide. Occasionally, NPS service vehicles or the U. S. Park Police would use the trail to access the northern area of the Park. North of East Capitol Street, the existing trail, which ends at Benning Road, would be widened to 12 feet. The existing trail spur that provides pedestrian access to Anacostia Avenue would be reconfigured to include accessibility ramps.

At various points along the length of the trail, way-finding signs identifying the existing sidewalks, streets, and service roads that connect to the trail would be posted. In some cases, minor alterations to existing sidewalks or re-striping of the road may be required to meet safety requirements for facilities shared by bicyclists, walkers, service vehicles, or traffic. For Alternative 1A, these major connection points would include:

- Howard Road near South Capitol Street;
- The Anacostia Metro Station;
- Good Hope Road near the existing park entrance;
- Nicholson Street near the existing park entrance; and
- Ft. Dupont Park. In this location, the existing NPS service road would be extended to connect with G Street near the DC Center for Therapeutic Recreation. This extension would pass under the Anacostia Freeway Bridge over the CSX Railroad tracks at grade and connect to G Street SE.

**Alternative 1B** would be identical to Alternative 1A except between 11th Street and Pennsylvania Avenue. In this area, the trail would run between the existing Anacostia Drive and the river; a 5-foot wide buffer would separate the two facilities. Because this section of the corridor is so narrow, the trail would pass very close to the river’s banks. In these environmentally sensitive areas, an elevated boardwalk section may be needed in select locations to avoid impacts to the existing riverbank slopes. Alternative 1B would include the same trail connections as Alternative 1A.
2.3.2 Design Section 2

Design Section 2 is illustrated in Figure 2-6.

Alternative 2A (Preferred) would reconstruct Water Street to provide a uniform 20-foot width for vehicular traffic and a 12-foot wide path in the sidewalk space on the east side of Water Street. North of the District of Columbia Department of Public Works (DCDPW) facility, the trail would deviate from Water Street eastward, run closer to the Anacostia River, rejoin the Water Street alignment just south of the Eastern Power Boat Club property, and follow Water Street until it passes the District Yacht Club. At this location the trail would again turn east, away from Water Street, and connect to M Street. The trail would generally be 12 feet wide with a 10-foot minimum width in restricted areas.

At M Street, between 11th Street and the traffic circle at Maritime Plaza the trail would run on the north side of the street and have a minimum width of 10 feet within the sidewalk space. Northeast of the traffic circle, the trail would join M Street as a shared roadway. M Street would be reconstructed along its existing alignment from this location north to Pennsylvania Avenue to provide a uniform width of 20 feet for vehicular and bicycle traffic and a 6-foot sidewalk on the east side of the street. In some locations, the alignment would be shifted slightly to the east to avoid encroachment into the existing clearance envelope of the CSX Railroad tracks. Just north of Pennsylvania Avenue, the proposed trail would turn west away from M Street, where the proposed 6-foot sidewalk and reconstructed width of M Street would terminate. Existing M Street would be resurfaced from this location north to enhance access from the trail to the Seafarers Yacht Club at the end of the street.

The trail would leave M Street, cross the existing CSX Railroad tracks at-grade and then turn north along the east side of the RFK Stadium service road. A 2 to 30 foot variable width grass buffer would be maintained between the existing service road and the proposed trail. The trail would generally be 12 feet wide but would narrow in some locations to minimize impacts to existing vegetation.

At the southern end of the RFK Stadium South Parking Lot, the turf area between the Anacostia River and the service road widens allowing the trail to meander closer to the Anacostia River. The 12-foot wide trail alignment would closely parallel the existing riparian vegetation, winding between existing individual trees north to the East Capitol Street Bridge. The trail would then continue through the open turf area between the RFK Stadium North Parking Lot and the Anacostia River, and continue to follow the existing riverbank vegetation north to Benning Road while avoiding recent reforestation, and ‘no mow’ meadow areas. The mainline trail would terminate at the existing sidewalk on the south side of Benning Road.
Fig 2-6 ARW Alternatives – Section 2
This portion of the trail would include the following trail connections:

- Just north of Barney Circle, a trail connection would cross the existing RFK Stadium service road, travel along the north side of the circle, and then cross Barney Circle to connect to an existing trail stub. The trail connection would use the existing sidewalk along Barney Circle to its intersection with 17th Street. The newly constructed portions of the trail connection would be a minimum of 10 feet wide.

- At Independence Avenue and RFK Stadium near the southern end of the RFK Stadium South Parking Lot, a trail connection would cross the existing RFK Stadium service road and travel along an existing trail on the west side of the parking lot. South of Independence Avenue the trail would transition to a proposed multi-use path and then split. One portion of the trail would connect to the sidewalk on the south side of Independence Avenue. The other portion of the trail would continue along an existing trail crossing beneath Independence Avenue adjacent to RFK Stadium to a location near the DC Armory. The proposed trail constructed for this connection would be a minimum of 10 feet wide.

- Along the south side of East Capitol Street, a trail connection would utilize the existing parking lot and a reconstructed existing trail to connect to the Independence Avenue connection described above.

- Along the north side of East Capitol Street the trail would link to an existing trail at the intersection of C Street and Oklahoma Avenue. A gap in the existing trail just east of Oklahoma Avenue would be completed with a proposed multi-use path. The proposed trail constructed for this connection would be a minimum of 10 feet wide.

- Approximately 800 feet south of Benning Road, a trail connection would include a proposed multi-use path that connects to the existing bridge to Kingman Island. The proposed path would be a minimum of 10 feet wide.

- Along the south side of Benning Road to Oklahoma Avenue, a trail connection would include a proposed multi-use path constructed just south of the existing sidewalk and bollards along Benning Road. The proposed path would be a minimum of 10 feet wide.

**Alternative 2B** includes reconstruction of Water Street from the intersection of 12th Street to M Street to provide a uniform 30-foot width for vehicular and bicycle traffic. The road would be designed with two 10-foot vehicular travel lanes and two 5-foot bicycle lanes along each side of the road. A 6-foot sidewalk would also be provided on the east side of Water Street. Reconstructed Water Street would generally follow the same alignment as existing Water Street.

At M Street, between 11th Street and an existing traffic circle the trail would be a minimum width of 10 feet within the sidewalk space on the north side of M Street. Northeast of the existing traffic circle, the trail would transition to two 5-foot bicycle lanes on reconstructed M Street, which would include two 10-foot vehicle lanes north to Pennsylvania Avenue. Reconstructed M Street would generally follow the same alignment as existing M Street. In some
locations the alignment would be shifted to the east to avoid encroachment into the existing clearance envelope of the CSX Railroad tracks. North of Pennsylvania Avenue Alternative 2B is the same as that of Alternative 2A.

This alternative also examined the option of providing the same roadway typical section as existing M Street between 11th Street and the traffic circle to the portion of M Street between the traffic circle and Water Street. This 52-foot wide typical section includes a 4-foot raised median, two, 12-foot vehicular travel lanes and two 12-foot shared parking and bicycle lanes. A 6-foot sidewalk on the east side of M Street is also provided.

The same trail connections are proposed for Alternative 2B as are in Alternative 2A.

2.3.3 Design Section 3

Design Section 3 is illustrated in Figure 2-7.

Alternative 3A (Preferred) would connect the southern portions of Anacostia Park with Kenilworth Aquatic Gardens and the Bladensburg Trail in Maryland. Under this option, the existing trail that currently ends near the Benning Road Bridge would be extended north, paralleling the river until it passes the small cove near the Potomac Electric Power Company (PEPCO) power plant, where it would turn east. This portion of the trail would be located on the edge of the NPS maintenance yard and the DCDPW Trash Transfer Station. At the southeast corner of the Transfer Station the trail would turn east and follow the existing NPS service road to the intersection of Anacostia Avenue and Foote Street. From this intersection to the intersection of Deane Avenue and Kenilworth Terrace, the trail will be designated on existing streets. The trail will head north on Anacostia Avenue, turn west on Hayes Street, then turn north again on Kenilworth Terrace. Portions of the trail in this section will be located in the existing sidewalk space due to existing roadway widths and the presence of a one-way street. Trail dimensions would be as follows:

- Anacostia Avenue between Foote and Hayes Streets— In this section, Anacostia Avenue, is 34 feet wide and is comprised of two 12-foot travel lanes that would be shared by vehicles and bicycles and two 5-foot unmarked parking areas, one on each side of the street. Pedestrians will use the existing sidewalk areas.
- Hayes Street between Anacostia Intersection and Kenilworth Terrace—In this area, Hayes Street, is 36 feet wide and accommodates one lane of one-way westbound traffic and two 5-foot unmarked parking areas. Westbound trail traffic would use existing Hayes Street as a shared roadway. Eastbound trail traffic would be accommodated on the existing sidewalk area.
- Kenilworth Terrace between Hayes Street and Jay Fort Street—In this area, Kenilworth Terrace is 34 feet wide and is comprised of two, 12-foot travel lanes that would be shared by vehicles and bicycles and two, 5-foot unmarked parking areas, one on each side of the street.
- Kenilworth Terrace between Jay Fort Street and Deane Avenue—In this area, the southbound trail would use the existing west side sidewalk of Kenilworth Terrace, which is 8 feet wide. The curb lane of Kenilworth Terrace would be widened to accommodate northbound traffic.
Fig 2-7 ARW Alternatives – Design Section 3
This portion of the trail includes a connection along Hayes Street to the existing pedestrian bridge over Kenilworth Avenue. This pedestrian bridge is a direct link to the Minnesota Avenue Metro Station. The trail connection would consist of approximately 100 feet of improved sidewalk with a minimum width of 10 feet on the south side of Hayes Street from the intersection of Hayes Street and Kenilworth Terrace to the pedestrian bridge.

At the intersection of Kenilworth Terrace and Deane Avenue the proposed trail would turn west and transition to a 12-foot wide multi-use path, then continue west between Watts Branch and Deane Avenue to an existing path that crosses Watts Branch and Deane Avenue. The alignment would meander to avoid impacts to existing vegetation and an existing playground near Deane Avenue. The trail would then cross Deane Avenue in the same location as the existing path and generally follow the existing path to the Kenilworth Parkside Recreation Area. The existing path location would be revised to improve alignment with the sidewalk along Anacostia Avenue near the intersection of 40th Street.

From 40th Street to Quarles Street, the proposed trail would consist of a multi-use path in the sidewalk space on the west side of Anacostia Avenue. A 5-foot grass buffer would separate the trail from Anacostia Avenue. The trail width would narrow to approximately 8 feet at the existing bridge over a small creek mid-way along Anacostia Avenue.

Near Quarles Street, the proposed trail would turn to the west between an existing football field and tree line, continuing to the northeast corner of the Kenilworth Greenhouse property. The trail would then turn north towards Lower Beaver Dam Creek. Just south of Lower Beaver Dam Creek, the trail would turn west again and would be located on an existing berm until it reaches the Anacostia River, where it would turn north along the east bank of the Anacostia River crossing over Lower Beaver Dam Creek and beneath the Amtrak Railroad and New York Avenue bridges. The portion of the trail along the Anacostia River bank would be on an elevated boardwalk structure to minimize impacts to wetland areas and existing vegetation. North of New York Avenue the proposed trail would gradually turn away from the Anacostia River to the east until it terminates at the connection with the Bladensburg Trail. Additional elevated boardwalk structures may be required in this area to minimize impacts to wetlands and vegetation. The proposed trail in this area would be 12 feet wide and the proposed boardwalk sections would be 14 feet wide to accommodate railings.

**Alternative 3B** is the same as that of Alternative 3A except for the segment between Anacostia Avenue and the Bladensburg Trail. The proposed trail would turn to the west near Quarles Street between an existing fence line and football field, continuing to the southeast corner of the Kenilworth Greenhouse property. From the southeast corner of the Kenilworth Greenhouse the trail would turn to the north and then west, skirting the perimeter of the property, and continue west on an existing berm until it reaches the Anacostia River. From the east bank of the Anacostia River at the Amtrak Railroad to its terminus at the Bladensburg Trail, Alternative 3B is the same as Alternative 3A.

**Alternative 3C** is the same as that of Alternative 3A except for the segment between Benning Road and Kenilworth Terrace. The trail would begin at the southwest corner of the Benning Road/Anacostia Avenue intersection, cross Anacostia Avenue and Benning Road at existing
crosswalks, and continue east along the sidewalk on the north side of Benning Road to Kenilworth Avenue. The trail would turn north along the sidewalk on the west side of Kenilworth Avenue and continue to Foote Street. The existing sidewalks on Benning Road, N.E. and Kenilworth Avenue would vary in width from 5 to 8 feet and are of varying condition.

The trail would turn west on Foote Street to Kenilworth Terrace, and then turn north on Kenilworth Terrace continuing to the intersection of Kenilworth Terrace and Deane Avenue. From this intersection to the northern limit of Anacostia Avenue Alternative 3C is the same as that of Alternative 3A.

Near the northern limit of Anacostia Avenue the proposed trail would enter a wooded area and turn northwest towards Lower Beaver Dam Creek. The initial portion of the trail in the wooded area would be on an elevated boardwalk structure to minimize impacts to wetlands and vegetation. The trail would then turn north crossing over Lower Beaver Dam Creek. On the north side of the creek the trail would turn west and head towards the Anacostia River between Lower Beaver Dam Creek and the Amtrak Railroad tracks. From this point on Alternative 3C is the same as Alternative 3A.

2.4 ALTERNATIVES ELIMINATED FROM FURTHER STUDY

In Design Section 1, an at-grade crossing of the CSX railroad was considered. This alternative was eliminated due to concerns with trail safety and railway operations that would result from a crossing being located so close to the high-traffic rail yard.

In Design Section 2, an alternative with wider footprints for M Street and Water Street was considered. A separate alternative involved the relocation of the RFK Stadium service road. Both of these alternatives were eliminated because they are subjects of other, ongoing studies and are beyond the scope the ARW project as defined in the Purpose and Need section (Chapter 1). The construction of either of the remaining alternatives in Design Section 2 would not preclude the future widening or relocation of these roads.

In Design Section 2, an alternative was considered that provided a separate pedestrian trail paralleling the main trail along the RFK Stadium parking lots. This alternative was eliminated from consideration due to avoiding interruption of the turf area between the parking lots and the river with multiple trails. As an alternative, spur trails may be added in select locations to bring pedestrians closer to the river.

In Design Section 3, an alternative was considered that would have crossed Lower Beaver Dam Creek approximately 300 yards east of the Anacostia River. The trail would have then continued west to Anacostia River between Lower Beaver Dam Creek and the Amtrak railroad north of the creek. This alternative was eliminated from consideration to avoid impacts to the floodplain and wetlands, to route the trail away from the noisy railroad, and for reasons of constructability.

Design Section 3 also included an alternative that directed the trail through the former Kenilworth Park Landfill. This site is currently undergoing studies for remediation of contaminated material. Due to exposure risk of the trail user and safety concerns during remedial activities this alternative was not pursued. After remediation activities are completed, placement of the trail in this location may be further explored.
CHAPTER 3: AFFECTED ENVIRONMENT

The project area for the proposed ARW includes areas east and west of the Anacostia River. On the east, the project area extends from South Capitol Street to the Bladensburg Trail, approximately two miles beyond the District-Maryland border. On the west, the project area extends from South Capitol Street to Benning Road. The project area includes Anacostia Park and the portions of the communities that lie within walking distance (¼ mile) from the Park boundary as shown in Figure 3-1. The study area for each type of resource identified as a potential issue is included in each resource description.

3.1 NEIGHBORHOODS

The study area for this resource includes those neighborhoods adjacent to the proposed ARW and its connections, as shown in Figure 3-1. The District’s original street plan is evident in areas west of the Anacostia River with its hierarchical system of boulevards and major and minor streets that create natural neighborhood boundaries. Neighborhoods in the area east of the Anacostia River grew in a more suburban pattern, often with small enclaves platted out and constructed as residential developments. District of Columbia Office of Planning (DCOP) is leading an effort to support, strengthen, and revitalize neighborhoods throughout the District and a major focus of their effort is development of Strategic Neighborhood Action Plans (SNAPS) for all areas of the city.

NPS is one of the main SNAP Action Plan Partners. The SNAP for each neighborhood cluster identifies NPS commitments to neighborhood priorities, which range from general support of the AWI to more specific pledges such as improving maintenance of NPS properties along Pennsylvania Avenue. The neighborhoods adjacent to each Design Section are listed below.

3.1.1 Design Section 1 Neighborhoods

**Barry Farm** – Established after the Civil War as one of the first African American communities in Washington DC, most of the area was razed and replaced with public housing projects after World War II. With no direct access to the riverfront, Barry Farms neighborhood residents must travel to Howard Road to reach Anacostia Park.

**Hillsdale** – This residential and commercial area includes a mixture of single-family, semi-detached, and multifamily apartment housing units. Residents reach the park via its entrance at Howard Road.

**Historic Anacostia** – Formally known as Uniontown, Historic Anacostia includes houses and businesses. Current residents can reach the Park and waterfront via Howard Road and Good Hope Road.

**Fairlawn** – Fairlawn is one of the older neighborhoods east of the river and mostly consists of single-family detached and semi-detached homes. Nicholas Street provides Fairlawn residents with a direct route to Anacostia Park and the waterfront.

**Twining/Greenway** – Consisting of single-family homes, residents in both communities are currently isolated from the Park and waterfront by I-295 and must walk or drive to reach the Park via Nicholson Street.
Fig 3-1 ARW Project Location
3.1.2 Design Section 2 Neighborhoods

**Washington Navy Yard/Near Southeast** – An active military facility, the Navy Yard’s waterfront is not accessible to the public. Residents of the Near Southeast neighborhood, located west and northwest of the Navy Yard, reach Anacostia Park and waterfront via M and Water Streets.

**Barney Circle/Hill East** – One of the project area’s older neighborhoods, many homes and businesses were constructed before the turn of the 19th century. The Hill East area is dominated by commercial and transportation land uses. The neighborhood route to the waterfront is via Barney Circle.

**Lincoln Park/Kingman Park** – Most of Kingman Park consists of homes constructed in the District’s typical urban row house style. Access to the Park and waterfront is difficult because of the RFK Memorial Stadium and its adjacent parking facilities. Residents must use Benning Road for access to the Park and waterfront.

**Langston** – Langston Dwellings, one of the first federally financed public housing complexes in the District, comprise the Langston neighborhood. Access to the Park and the waterfront is limited to Benning Road due to the Langston Golf Course.

3.1.3 Design Section 3 Neighborhoods

**River Terrace** – This community of mostly single-family row houses lies adjacent to the Anacostia Park waterfront. It is isolated from other residential areas, with the Anacostia waterfront to the west, I-295, to the east, and Benning Road to the north. The community has direct access to the Park and waterfront along Anacostia Avenue.

**Mayfair** – Built between 1925 and 1949, it was one of the city’s first housing developments for African Americans. The community is located adjacent to the Park; however, because of fencing, access to the Park and the waterfront is limited to Deane Avenue and portions of Anacostia Avenue.

**Eastland Gardens/Kenilworth** – Consisting primarily of single-family, detached and semi-detached homes, this isolated community is bordered by I-295 to the east and recreational facilities located in Anacostia Park to the north and the west. The community has direct access to the Park, its recreational facilities, and the waterfront via Anacostia Avenue and Deane Avenue.

**Central NE** – Residents of this neighborhood, which includes multiple housing types and styles, have no direct access to the Park or waterfront.

**Colmar Manor/Bladensburg** – Located in Prince George’s County, Maryland, the towns of Colmar Manor and Bladensburg are old port towns that still retain their original street grids of narrow roads. Colmar Manor residents have access to the Bladensburg trail through Colmar Manor Park. Bladensburg residents have access to the path via Bladensburg Waterfront Park.
3.1.4 Neighborhood Access and Mobility Overview

Residents on either side of the river have few routes to the Anacostia waterfront. On the east, major highway and rail lines run the entire length of the river and block the communities’ access to Anacostia Park. A limited number of streets directly connect communities to Anacostia Park areas and the waterfront, including: Good Hope Road, Nicholson Street, Deane Avenue, Douglas Street, portions of 40th Street, and portions of Anacostia Avenue. These existing connections are a significant distance apart, e.g. two miles separate the Anacostia Avenue/Benning Road access from the Nicholson Road access. Four neighborhoods – Kenilworth, Mayfair, Eastland Gardens, and River Terrace – abut the Anacostia Park and have direct access to the Park via local roads and Anacostia Avenue.

On the west side of the Anacostia, difficulties exist in reaching the waterfront. I-395 and the CSX rail line function as a border that isolates neighborhoods to the north. Access to the waterfront for local neighborhoods is also impeded by large properties that abut the river such as the RFK Stadium, Langston Golf Course, and the National Arboretum. Public access to the river from the west is mainly achieved via Water Street, M Street, Benning Road, and Barney Circle.

3.2 PARKS AND RECREATIONAL FACILITIES

A number of parks and recreational facilities are located within the study area, as shown in Figure 3-2. Anacostia Park is the largest park and dominates the study area, offering both passive and active recreation. Its resources include:

- Kenilworth Park and Kenilworth Marsh - located within the upper section of Anacostia Park, a portion of this 180-acre site was once used as a landfill, but restoration efforts have been initiated and portions are now being used as a multi-purpose recreational area;
- Kenilworth Aquatic Gardens - 14 acres of aquatic plants located on the east bank of the Anacostia River within the Park;
- Poplar Point –adjacent to the historic Anacostia District and consisting of park service buildings and several abandoned greenhouses formerly used by the Architect of the Capitol;
- Boating facilities - including three marinas, the Eastern Power Boat Club, the District Yacht Club, Seafarers Yacht Club, Washington Yacht Club, the public Anacostia Community Boathouse, marinas and a public boat ramp;
- Langston Golf Course - located west of the Anacostia River, this historic site offers an 18-hole course and driving range,
- Anacostia Park Pavilion - located east of the Anacostia River and north of Pennsylvania Avenue, it contains 3,300 square feet of space for roller skating and special events;
- Playing fields and courts; and
- Picnic and other passive recreation areas.
Fig 3-2 ARW Area Parks
Other park and recreation facilities in or near the study area include:

- Kingman and Heritage Islands in the Anacostia River, which are under redevelopment as educational and low-impact recreation sites.
- Several sections of the Fort Circle Parks which contain a hiker-biker trail that winds its way through Fort Chaplin Park, Fort Mahan Park, Fort Dupont Park, Fort Davis Park and Fort Stanton Park and ends just south of Fort Stanton Park at the Anacostia Museum.
- Fort Dupont Park, which includes a 400-acre wooded park with trails, an ice-rink, and a community-nature center.
- Watts Branch Park, under the jurisdiction of DC Parks and Recreation is being restored by community volunteers. The park extends 1.5 miles through the far northeast neighborhoods of the District to the banks of the Anacostia River.
- RFK Stadium, which hosts various regional and local activities, including sporting events and concerts.
- Numerous local recreation centers in the study area, including the Barry Farms Recreation Center, Kenilworth-Parkside Recreation Center, Orr Recreation Center, Anacostia Fitness, River Terrace Recreation Center, Rosedale Recreation Center, and Savoy Recreation Center.
- Nearly 30 small landscaped medians, triangles, and other types of streetscape areas that are scattered throughout the study area.

### 3.3 VISITOR USE AND EXPERIENCE

Approximately 1.3 million people visit this park system every year. The Park offers its visitors a variety of recreational options as described in the previous sections. Visitor experience varies by section, as do the types of visitors, which includes both tourists and residents. Some portions of the Park attract mostly local residents; other portions, such as the Kenilworth Aquatic Gardens, attract mostly tourists.

### 3.4 AREA PLANNING DOCUMENTS

The District’s Comprehensive Plan guides future land use for the study area and includes projects and improvements affecting recreational facilities in the project area. Other land use plans with recreational initiatives affecting the project area include the Anacostia Park General Management Plan, the Anacostia Waterfront Initiative (AWI) Framework Plan, and the East of the River Initiative. Summaries of these master plans can be found in Appendix 2.

### 3.5 ARCHAEOLOGICAL AND HISTORIC SITES

“Historic properties” are defined by the implementing regulations of the National Historic Preservation Act (36 CFR 800) as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places. This term includes artifacts, records, and remains that are related to and located within such properties, as well as traditional and culturally significant Native American sites and historic landscapes. The term “eligible for inclusion in the National Register” includes both properties formally
determined to be eligible and all other properties that meet National Register listing criteria. Archaeological resources are defined in the National Park Service’s Cultural Resource Management Guideline (Director’s Order 28) as the remains of past human activity, and records documenting the scientific analysis of these remains.

3.5.1 Area of Potential Effects

The Area of Potential Effects (APE) for archaeological/historic sites includes the area within 50 feet of the centerline of each proposed alternative alignment, for a total width of 100 feet. The APE was limited to 100 feet total width due to the small footprint of the proposed trail and the limited earthwork required to build the trail. The area of analysis encompasses the area of potential ground disturbance to archaeological and historical resources; it was not expanded to take into account the effects of noise and vibration to historic sites and structures because no noise or vibration impacts are anticipated from this project.

Information regarding archaeological and historic resources within the study area was collected from the DC Historic Preservation Office (DCHPO), the National Park Service’s National Capital Parks-East offices, and the Maryland Historical Trust (MHT).

3.5.2 Historic Potential

The area surrounding the Park contains historic structures within Historic Districts; however, these Districts are located outside of the project’s area of analysis. DCHPO provided base maps and survey reports with the locations of historic sites/structures listed on the District’s Historic Sites Inventory. In addition, the study team met with a District Historic Preservation Planner to determine locations of known historic structures; with the assistance of the preservation planner, the study team determined that there were no historic structures in the APE. The study team visited the library at the National Capital Parks-East headquarters, which also contains cultural resource survey reports and other research materials relating to land use and cultural history of the Anacostia Park area. MHT maintains data on historical structures, archaeological surveys, and known archaeological sites on its Geographic Information System (GIS) database. Information obtained from survey reports provided by these agencies is presented in Appendix 3.

3.5.3 Archaeological Potential

DCHPO provided base maps and survey reports with the locations of archaeological surveys and known archaeological sites. In addition, the Study Team met with the District Archaeologist to determine the locations of known archaeological sites in the APE. The DCHPO recorded 22 archaeological sites within an area that encompasses Anacostia Park and its immediate environs. Seven of these archaeological sites are located within the APE associated with the alternatives. MHT records did not indicate any archaeological sites within the Prince George’s County segment of the study area. Table 3-1 presents the limited site information for the known archaeological sites, shown in Figure 3-3.
Previous investigations have noted that archaeological sites are generally located on upper terraces along the Anacostia River, mostly at the mouths of tributary streams. Most known site locations are situated on the east side of the river rather than the marshy west bank. Both sides of the river have been subjected to extensive grading and filling; however, the disturbance has been much more extensive on the western bank than on the eastern bank through activities to reclaim the extensive marshlands (Bromberg et al. 1989; Baumgardt et al. 1994; Overbeck n.d.).

### Table 3-1
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#### 3.6 VISUAL AND AESTHETICS

Beginning in the late 17th century, successive waves of urbanization have transformed the character of the Anacostia watershed from a thriving natural ecosystem of dense forests, streams, and a river teeming with wildlife, into a bustling metropolitan area with a population of over 63,000 within the study area. The National Capital Planning Commission (NCPC), the agency responsible for “planning orderly development of the national capital and the conservation of its important natural and historical features,” identifies the maintaining of the cultural and historic setting of the District’s “topographic bowl” as an overall goal in developing and redeveloping various areas of the city. The ridgeline that surrounds the center of the city creates a natural bowl that allows a variety of views into and out of the city. The AWI Viewsheds Plan (Figure 3-4) depicts important views in the study area. Additionally, preservation of the green setting of the Anacostia Hills is an NCPC objective. The Anacostia Hills are the eastern ridge of the topographic bowl, which runs roughly east of the Anacostia Freeway. Strategies for preserving these cultural, natural, and historic views include limits on building height and location and use of landscaping to frame or emphasize the vistas.

Several distinctive visual environments exist within the study area. The center of the study area includes both sides of the Anacostia River and its surrounding parkland. The parkland itself includes forested, wetland, and landscaped or turf areas. Some parts of the park include man-made features such as playing fields, boat docks, recreational centers, and other structures to support visitor use and park maintenance.

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Anacostia Park is located amid many urbanized neighborhoods; each with a distinctive architectural style that reflects its construction date. Typically, the residential neighborhoods have medium- to high-density row houses and multifamily dwellings that were built between 1900 and 1950. East of the river, many of the original turn-of-the-century row houses and much of the historical architecture remain. These older structures and neighborhoods are interspersed with urban industry and retail and crisscrossed by an extensive network of local and arterial roadways. The PEPCO plant is a large industrial site north of Benning Road. In park areas east of the Anacostia River and north of East Capitol Street, the residential neighborhoods are visible from the Park. South of East Capitol Street, the Anacostia Freeway separates the residential neighborhoods from the park. Area residents and visitors can only experience the broad visual quality of the study area through limited glimpses from the highway or one of the six bridges that cross the river. However, a tree line along the Park’s eastern edge blocks the view of the roadway from the park. Therefore, Anacostia Freeway does not dominate the visual and aesthetic environment of the park.

West of the Anacostia River, Anacostia Park is visually and physically separated from the residential neighborhood by institutional buildings such as the Washington Navy Yard, DC Jail, The Stadium Armory, RFK Stadium and parking areas. The visual character of the study area is urbanized with a mix of residential and recreational uses. Additionally, some of the streets on the west side of the river and park are lined with large trees and have expanded intersections with park areas, particularly those that travel towards the Capitol Hill area. The Washington Navy Yard dominates the southern end of the study area visually. Large administrative facilities fill the visual landscape, though the ships docked at the base provide a point of visual interest for individuals with access to the attractive waterfront promenade on the naval base. RFK stadium is located on the southwest corner of the intersection of Benning Road and the Anacostia River; this structure is noteworthy because it is a visual feature on the western shore of the Anacostia due to its size.
Fig 3-3 ARW Archaeological Sites
Fig 3-4 ARW Viewsheds
3.7 WILDLIFE AND HABITAT

Approximately 70 percent of the Anacostia Watershed has been developed, and only 25 percent of the watershed’s original forest cover still exists. Similarly, within the Park and ARW area, 23 percent of the land has original forest tree cover (District of Columbia, 2003b). Anacostia Park covers over 1,200 acres, and despite the loss of forest cover and other natural features over the last two centuries, it still consists predominantly of ‘green space’ and includes several habitat types that support a diverse variety of flora and fauna species.

The presence of a riparian floodplain, emergent and forested wetlands, and particularly the Kenilworth Aquatic Gardens and Kenilworth Marsh provide a unique natural environment in an otherwise urban area. The Kenilworth Aquatic Gardens is the only National Park facility used to grow and display aquatic plants. The gardens were created in 1882 and were purchased by the Federal Government in the 1930s to be incorporated into Anacostia Park. The Kenilworth Marsh is the District’s last tidal marsh and provides an opportunity for environmental study and education. Although the marsh has degraded over time due to pollution and dredge and fill activities, it still supports a diversity of wetland plant and wildlife species that are unusual in an inner city (NPS, 2004c).

According to the AWI Framework Plan, the northern half of the study area (roughly the area north of the CSX rail line) is an area where maximum habitat and environmental integrity should be promoted because this area is less impacted by development than the area south of the CSX rail line. The southern half of the study area is targeted primarily for maximum habitat and environmental integration by promoting sustainable development that would have a minimum impact on the Anacostia River and its floodplain.

The field investigation for the wildlife and habitat investigation covered a corridor ranging between 100 feet and 400 feet wide along the proposed ARW alignments.

3.7.1 Habitat

The alignments would extend through several different habitat types within Anacostia Park. In certain habitats, invasive vegetation such as Japanese honeysuckle (Lonicera japonica) and tree of heaven (Ailanthus altissima) threaten to compromise the native flora and fauna of the park. A description of the habitat types within the study area, including the dominant flora, follows.

**Riparian Buffers:** Portions of the Anacostia floodplain, particularly in areas north of Benning Road, are heavily forested, providing a natural riparian buffer that protects the river from erosion, filters stormwater runoff, and provides habitat for a number of species. However, a significant portion of the Anacostia floodplain is developed or open turf. The AWI outlines a plan for creating a natural riparian buffer in these areas that would provide similar functions as the forested buffer north of Benning Road. A description of the types of vegetation identified in emergent and forested wetlands as well as in upland forests within the riparian buffer is presented in the following sections.
Emergent Wetlands: Several emergent wetlands that support diverse biotic communities are located within the Anacostia River floodplain, both west of the River between the Whitney Young Memorial Bridge and the Benning Road Bridge, and east of the River between the Frederick Douglas Memorial Bridge and the CSX railroad bridge. Plant species that dominate these wetlands include: broad-leaf cattail (Typha latifolia), Kentucky bluegrass (Poa pratensis), shallow sedge (Carex lurida), blunt broom sedge (Carex tribuloides), water bentgrass (Agrostis semiverticillata), arrow arum (Peltandra virginica), swamp rosemallow (Hibiscus moscheutos), curly dock (Rumex crispus), and devil’s beggar ticks (Bidens frondosa).

Forested Wetlands: NPS identified several forested wetlands within the Anacostia River’s riparian buffer north of Benning Road. These wetlands provide habitat for a number of flora and fauna species. Plant species that dominate these wetlands include: red mulberry (Morus rubra), silver maple (Acer saccharinum), American sycamore (Platanus occidentalis), red maple (Acer rubrum), sweet gum (Liquidambar styraciflua), black gum (Nyssa sylvatica), green ash (Fraxinus pennsylvanica), tartarian honeysuckle (Lonicera tatarica), blunt broom sedge (Carex tribuloides) and Virginia creeper (Parthenocissus quinquefolia).

Upland Forests: The proposed ARW would also extend through areas of upland forest within the Anacostia River riparian buffer, north of Benning Road. Plant species that dominate these forests include: tree of heaven (Ailanthus altissima), red mulberry (Morus rubra), black locust (Robinia pseudoacacia), tartarian honeysuckle, willow oak (Quercus phellos), box elder (Acer negundo), princess tree (Paulownia tomentosa), northern catalpa (Catalpa speciosa), silk tree (Albizia julibrissen), and slippery elm (Ulmus rubra).

Landscaped Areas: There are several areas of maintained right-of-way along roadways and bridges that cross the study area, and several maintained recreational fields within the study area. Typical vegetation in these areas includes Gramineae grass species, white clover (Trifolium repens), and English plantain (Plantago lanceolata).

Meadows: There are 27 acres of actively managed meadows within the Park; another 15 acres exist in the Kenilworth Gardens.

3.7.2 Wildlife

National Capital Parks-East has documented 191 bird, 50 butterfly, 23 fish, 20 reptile, 18 amphibian, and 17 mammal species as either residents within or migrants passing through Anacostia Park. Local predators include red and gray fox (Vulpes vulpes and Urocyon cinereoargenteus), raccoons (Procyon loter), osprey (Pandion haliaetus), red-tailed hawks (Buteo jamaicensis), and transitory bald eagles (Haliaeetus leucocephalus). Other species include opossum (Didelphis marsupialis), gray squirrels (Sciurus carolinensis), and various species of bats, butterflies, dragonflies, snakes, turtles, migratory songbirds, and waterfowl.

Field investigations identified evidence of the following species in their respective habitats:
• Various species of amphibians, including marbled salamanders (*Ambystoma opacum*), red-spotted newts (*Notophthalmus viridescens*), and spring peeper (*Pseudacris crucifer*), in both emergent and forested wetlands;
• Eastern box turtles (*Terrapene carolina*) in forested uplands;
• Black rat snake (*Elaphe obsoleta*) on the RFK access road;
• Eastern tiger swallowtail butterfly (*Papilio glaucus*) in upland fields;
• Mammals including red fox (*Vulpes vulpes*) and eastern gray squirrel (*Sciurus carolinensis*) in forested uplands, and beaver (*Castor canadensis*) in forested wetlands;
• Red-winged blackbird (*Agelaius phoeniceus*) in emergent wetlands and floodplain fields;
• Egret species in open water of the Anacostia;
• Northern mockingbird (*Mimus polyglottos*) and American crow (*Corvus brachyrhynchos*) in maintained fields;
• Black-crowned night heron (*Nycticorax nycticorax*) in the Anacostia riparian buffer;
• Great blue heron (*Ardea herodias Linnaeus*) and double-crested cormorant (*Phalacrocorax auritus*) flying over the Anacostia;
• Canada goose (*Branta canadensis*), mallard duck (*Anas platyrhynchos*), rough-winged swallow (*Stelgidopteryx Baird*), killdeer (*Charadrius vociferous*), great black backed gull (*Larus marinus Linnaeus*), laughing gull (*Larus atricilla Linnaeus*), and ring-billed gull (*Larus delawarensis*) along the banks of the Anacostia;
• Northern cardinal (*Cardinalis cardinalis*) in upland forests; and
• House sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris Linnaeus*), and gray catbird (*Dumetella carolinensis*) in developed areas of the park.

### 3.7.3 Rare, Threatened, and Endangered (RTE) Species

Section 7 of the Endangered Species Act, as amended, requires each federal agency to ensure that “any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical, unless such agency has been granted an exemption for such action by the Committee.”

NPS corresponded with Maryland Department of Natural Resources (MDNR) and US Fish and Wildlife Service (USFWS) in June 2004 to determine if any RTE species exist within the ARW study area. The responses received from MDNR (Byrne, July 9, 2004) and USFWS (Moser, September 14, 2004) indicated that no state or federally listed RTE species have been documented as resident within the study area and the Park contains no Critical Habitat for Threatened or Endangered Species.

### 3.8 WETLANDS AND WATERWAYS

Wetlands and waterways (also referred to as “waters of the U.S.”) are resources protected under Section 404 of the Clean Water Act, which requires the US Army Corps of Engineers (USACE) to issue a permit for activities that result in the discharge of dredge or fill material into wetlands and waterways. Executive Order (EO) 11990, “Protection of Wetlands” further defines impacts
to wetlands to include indirect effects, provides a long-term goal of “no net loss of wetlands,” and requires federal agencies to adopt procedures that ensure compliance with EO 11990. National Park Service’s Director’s Order 77-1: Wetland Protection provides the framework for NPS to meet its responsibilities in protecting and preserving wetlands in a manner that is consistent with EO 11990 and states NPS’ longer-term goal of achieving a net gain of wetlands on lands managed by NPS. DO 77-1 outlines NPS’ policies and procedures for avoidance and minimization of impacts to wetlands as well as preferred mitigation measures to compensate for unavoidable impacts to wetlands.

USACE and the US Environmental Protection Agency (USEPA) define wetlands as areas that are saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands typically include swamps, marshes, bogs, vernal pools, and similar areas. “Waters of the U.S.” are defined by USACE as “coastal and inland waters, lakes, rivers, and streams that are navigable waters of the United States, including their adjacent wetlands” and “tributaries to navigable waters of the United States, including adjacent wetlands” (Corps of Engineers Wetlands Delineation Manual [Environmental Laboratory, 1987]).

Due to development, it is estimated that approximately 2,500 acres of tidal emergent wetlands have been lost along the Anacostia River from Bladensburg to the Potomac River. There are approximately 100 acres of tidal emergent wetlands remaining along the Anacostia River between Bladensburg and the confluence with the Potomac River, representing a loss of roughly 90 percent of the original wetlands that once existed (District of Columbia, 2003b).

NPS followed procedures outlined in Section 5.1 of the procedural manual, Wetland Inventories, to identify wetlands and waterways subject to EO 11990 within a corridor that ranged between 100 feet and 400 feet wide along the proposed ARW alignments throughout Anacostia Park. The Wetland Inventory was used in development of alternatives that avoid and minimize impacts to wetlands. NPS reviewed published information to identify known wetlands and waterways in the study area (including planned wetland creation/restoration projects). Because of the nature of the project, NPS performed an enhanced inventory of wetlands and waterways, including ground-truthing of published information and field delineation of wetlands, including incidental and intentional artificial wetlands, within the study area. Artificial wetlands are defined in Section 4.2.B of DO 77-1 as wetlands that have formed in uplands resulting from human activities, and include incidental systems such as artificial impoundments due to inadequate roadway drainage, and intentional systems such as constructed ponds or reservoirs. NPS field delineated all potentially jurisdictional wetlands not identified during the prefield investigation. All data collection was performed according to the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987) using the routine on-site method. However, in accordance with DO 77-1, NPS classified each wetland and waterway into system, subsystem, class, and subclass according to Classification of Wetlands and Deep Water Habitats of the United States (Cowardin, et al., 1979), and determined the functions and values of each system with respect to the Anacostia watershed. A draft Wetland Delineation Report for the Proposed Anacostia Riverwalk Trail (Straughan Environmental Services, Inc. [SES], 2004) that presents additional details on the methodologies used and data collected is included as Appendix 4.
3.8.1 Published Information

NPS reviewed the National Wetlands Inventory (NWI) Map for Anacostia, DC-Maryland (USFWS, 1981a) and the NWI Map for Washington East, DC-Maryland (USFWS, 1981b) to identify potential wetlands within the study area. Both maps identify the Anacostia River as a riverine, tidal, open water, permanent tidal (R1OWV) waterway adjacent to the ARW alignment. Additionally, the NWI Map for Washington East, DC-Maryland identifies one palustrine, forested, broad-leaved deciduous, seasonally saturated (PFO1E) wetland and one palustrine, aquatic bed, semi-permanent (PAB) wetland within the study area, north of New York Avenue, and one palustrine, forested, broad-leaved deciduous/emergent, narrow-leaved persistent, seasonal tidal (PFO1/EM5R) wetland within the study area immediately south of New York Avenue. The proposed ARW would also cross or parallel Lower Beaver Dam Creek, identified on the NWI Map for Washington East, DC-Maryland as a riverine, tidal, open water, permanent tidal, excavated (R1OWVx) waterway, and Watts Branch, identified on the NWI Map for Washington East, DC-Maryland as a riverine, lower perennial, open water, intermittently exposed/permanent, excavated (R2OWZx) waterway.

The District of Columbia Wetland Conservation Plan (District of Columbia, 1997) identifies three wetlands within the study area. Wetland No. 1 is identified as a palustrine, forested, broadleaved deciduous, saturated/seasonally saturated (PFO1B/E) wetland along Lower Beaver Dam Creek at Kenilworth Courts. Wetland No. 20 is identified as a riverine, tidal, emergent, non-persistent, regular (R1EM1N) wetland along the east bank of the Anacostia River, immediately north of the Benning Road Bridge. Wetland No. 29 is identified as a palustrine, emergent, persistent, seasonal (PEM1C) wetland within Anacostia Park at the 11th Street Bridge. All of these wetlands were identified during field investigations.

The AWI outlines the District’s recent and planned wetland restoration and creation projects along the Anacostia River, which include:

- Kenilworth Marsh, a 77-acre emergent wetland encompassing the Kenilworth Aquatic Gardens. It is the District’s last tidal freshwater marsh. The USACE, USEPA, NPS, and Metropolitan Washington Council of Governments (MWCOG) conducted a restoration project in this area in 1992, adding an additional 32 acres to the site. This was the largest tidal freshwater marsh restoration project to date.

- Watts Branch, a perennial stream flowing into the Anacostia River through the Park. Watts Branch is being studied by community organizations and the DC Departments of Health and Parks and Recreation in an effort to improve water quality. A new wetland has already been constructed alongside the stream to capture and mitigate urban runoff.

- Approximately 31 acres of riparian wetland in the area between the PEPCO Power Plant and Massachusetts Avenue. These wetlands have been restored in an effort to replace some of the wetlands that were filled during development of the Park in the early 1900s.
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The Soil Survey of District of the Columbia (USDA, 1976a) indicates that seven soil types occur within the Washington, DC portion of the study area. These soils include Ponded Fluvaquents (FD), the Galestown-Urban land (GeB) complex, the Galestown-Rumford (GfB, GfC) complex, Iuka sandy loam (Ik), the Iuka-Urban land (Ip) complex, Urban land (Ub), and various types of Udorthents soils. The Fluvaquents, ponded soils are listed in the District of Columbia Hydric Soils List (USDA, 1976b), indicating that these are wetland soils.

The Soil Survey of Prince George’s County, Maryland (USDA, 1967a) indicates that two soil types occur within the Prince George’s County portion of the study area. These soils include Tidal Marsh (TM) and Swamp (Sx) soils. Both soil types are listed in the Prince George’s County, Maryland Hydric Soils List (USDA, 1967b), indicating that these are wetland soils.

3.8.2 Field Investigation

In accordance with DO 77-1, NPS field delineated all wetland areas that could potentially be impacted by any of the proposed alternatives and classified the systems according to Cowardin et al. (1979), and documented functions and values of delineated wetlands. Functions and values considered by NPS include:

- **Biotic functions** such as fish and wildlife habitat, floral and faunal productivity, native species and habitat diversity, and threatened and endangered species;
- **Hydrologic functions** such as flood attenuation, stream flow maintenance, groundwater recharge and discharge, water supply, erosion and sediment control, water purification, and detrital export to downstream systems;
- **Cultural values** such as aesthetics, education, historical values, archaeological values, recreation, and interpretation;
- **Research/Scientific values** such as “reference sites” for research on unimpacted ecosystems; and
- **Economic values** such as flood protection, fisheries, and tourism.

NPS identified 17 wetlands and 13 waterways during pre-field and field investigations that provide flood storage, wildlife habitat, nutrient retention, and stream bank stabilization functions. Wetlands in proximity to the proposed trail alignment are illustrated by Design Section in Figures 3-5, 3-6 and 3-7. Table 3-2 provides locations and descriptions of each of the wetlands, including their functions and values, identified within the study area. The *DRAFT Wetland Delineation Report for the Proposed Anacostia Riverwalk Trail* (SES, 2004) is included in Appendix 4.
Fig 3-5 ARW Wetlands – Design Section 1
Fig 3-6 ARW Wetlands – Design Section 2
Fig 3-7 ARW Wetlands – Design Section 3
<table>
<thead>
<tr>
<th>Wetland/Waterway</th>
<th>Type</th>
<th>Functions and Values (see notes)</th>
<th>Size Within study area</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland WL001</td>
<td>PFO1N</td>
<td>A, B</td>
<td>5,679 square feet</td>
<td>Northeast of the John Phillip Sousa Bridge exit ramp, between the RFK Stadium access road and the CSX rail line, northwest of the Anacostia River</td>
</tr>
<tr>
<td>Waterway WL001a</td>
<td>Ephemeral channel</td>
<td>A,B</td>
<td>63 linear feet</td>
<td>1,200 feet northeast of the exit ramp for the John Phillip Sousa Bridge and immediately east of the access road for RFK stadium, northwest of the Anacostia River</td>
</tr>
<tr>
<td>Waterway WL002</td>
<td>Ephemeral channel</td>
<td>A,B</td>
<td>79 linear feet</td>
<td>800 feet south of Benning Road and immediately west of the Anacostia River</td>
</tr>
<tr>
<td>Wetland WL003</td>
<td>PEM1B</td>
<td>A,B</td>
<td>1,861 square feet</td>
<td>800 feet south of Benning Road and 100 feet west of the Anacostia River</td>
</tr>
<tr>
<td>Wetland WP003a</td>
<td>PEM1A</td>
<td>A,B</td>
<td>634 square feet</td>
<td>800 feet south of Benning Road and 200 feet west of the Anacostia River</td>
</tr>
<tr>
<td>Wetland WP003b</td>
<td>PEM1A</td>
<td>A,B</td>
<td>682 square feet</td>
<td>1,100 feet south of Benning Road and 100 west of the Anacostia River</td>
</tr>
<tr>
<td>Waterway WL003c</td>
<td>Ephemeral channel</td>
<td>A,B</td>
<td>350 linear feet</td>
<td>750 feet south of Benning Road and immediately west of the Anacostia River</td>
</tr>
<tr>
<td>Wetland WP003d</td>
<td>PEM1A</td>
<td>A,B</td>
<td>3,282 square feet</td>
<td>750 feet south of the Benning Road Bridge and immediately northwest of the Anacostia River</td>
</tr>
<tr>
<td>Waterway WL004</td>
<td>Ephemeral channel</td>
<td>A,B</td>
<td>48 linear feet</td>
<td>335 feet northeast of the 11th Street Bridge and directly southeast of Anacostia Drive, east of the Anacostia River</td>
</tr>
<tr>
<td>Wetland WP005</td>
<td>PEM1B</td>
<td>A,B</td>
<td>3,327 square feet</td>
<td>1,200 feet northeast of the Frederick Douglas Memorial Bridge and adjoining Anacostia Drive to the southeast, east of the Anacostia River</td>
</tr>
<tr>
<td>Wetland WP005a</td>
<td>PEM1A</td>
<td>A,B</td>
<td>1,040 square feet</td>
<td>South of the Officer Kevin J. Welsh Memorial Bridge, west of the Anacostia Park access road, and east of the Anacostia River</td>
</tr>
<tr>
<td>Wetland WP005b</td>
<td>PEM1B</td>
<td>A,B</td>
<td>396 square feet</td>
<td>Northwest of Anacostia Drive, north of the Anacostia River Drive and east of the Anacostia River</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Wetland/Waterway</th>
<th>Type</th>
<th>Functions and Values (see notes)</th>
<th>Size Within study area</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland WP006</td>
<td>PEM1B</td>
<td>A,B</td>
<td>2,814 square feet</td>
<td>West of Anacostia Drive, approximately 500 feet northeast of the John Phillip Sousa Bridge, and adjacent to the east bank of the Anacostia River</td>
</tr>
<tr>
<td>Waterway WL007</td>
<td>Ephemeral channel</td>
<td>A,B</td>
<td>924 linear feet</td>
<td>Impounded to the north by the CSX rail line and to the south by an access road originating at Anacostia Drive, east of the Anacostia River</td>
</tr>
<tr>
<td>Waterway WL008</td>
<td>Ephemeral channel</td>
<td>A,B</td>
<td>184 linear feet</td>
<td>Impounded to the north by a CSX rail line and to the south by an access road originating at Anacostia Drive, 1050 feet east of the Anacostia River</td>
</tr>
<tr>
<td>Waterway WL009</td>
<td>Ephemeral channel</td>
<td>A,B</td>
<td>200 linear feet</td>
<td>Approximately 230 feet northwest of Anacostia Drive and 1,250 feet east of the Anacostia River, impounded to the north by a CSX rail line</td>
</tr>
<tr>
<td>Wetland WP010</td>
<td>R1OWV</td>
<td>A,B</td>
<td>26,510 square feet</td>
<td>Approximately 130 feet north of the Benning Road Bridge, west of the PEPCO plant, along the east bank of the Anacostia River</td>
</tr>
<tr>
<td>Waterway WL011</td>
<td>Ephemeral channel</td>
<td>A,B</td>
<td>50 linear feet</td>
<td>Approximately 1,500 feet north of the Benning Road Bridge and directly east of the Anacostia River</td>
</tr>
<tr>
<td>Wetland WP011a</td>
<td>PFO1A</td>
<td>A,B</td>
<td>68,824.8 square feet</td>
<td>Approximately 1,200 feet north of the Benning Road Bridge, along the eastern bank of the Anacostia River</td>
</tr>
<tr>
<td>Waterway WL012</td>
<td>Perennial stream</td>
<td>A,B</td>
<td>30 linear feet</td>
<td>West of Anacostia Avenue, approximately 300 feet south of Douglas Street</td>
</tr>
<tr>
<td>Waterway WL013</td>
<td>Perennial stream</td>
<td>A,B</td>
<td>203 linear feet</td>
<td>Approximately 4,600 feet north of Benning Road and east of the Anacostia River</td>
</tr>
<tr>
<td>(Watts Branch)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wetland WL014</td>
<td>PFO1E</td>
<td>A,B,C,D</td>
<td>43,656 square feet</td>
<td>Approximately 770 feet east of the Anacostia River, north of the Kenilworth greenhouse</td>
</tr>
<tr>
<td>Waterway WL015</td>
<td>Perennial stream</td>
<td>A,B</td>
<td>1,387 linear feet</td>
<td>Adjacent to the south side of the Pennsylvania rail line, near the Washington, DC-Maryland border</td>
</tr>
</tbody>
</table>

*Notes: A = Ecosystem Function, B = Economic Value, C = Cultural Value, D = Scientific Value*
### Table 3-2
Wetlands and Waterways Within the Study Area

<table>
<thead>
<tr>
<th>Wetland/Waterway</th>
<th>Type</th>
<th>Functions and Values (see notes)</th>
<th>Size Within study area</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland WL015a</td>
<td>PFO1B</td>
<td>A,BC</td>
<td>5,607 square feet</td>
<td>Approximately 1,200 feet east of the Anacostia River, parallel to Beaver Dam Creek, and crossing over the District of Columbia/Prince George’s County, Maryland line</td>
</tr>
<tr>
<td>Wetland WL016</td>
<td>PFO1C</td>
<td>A,B,C,D,E</td>
<td>149,839 square feet</td>
<td>Approximately 1,400 feet east of the Anacostia River, north of Anacostia Avenue and south of the Pennsylvania rail line.</td>
</tr>
<tr>
<td>Wetland WL017</td>
<td>PFO1J</td>
<td>A,B,C,D</td>
<td>17,109 square feet</td>
<td>Approximately 100 feet north of the Pennsylvania rail line and east of the Anacostia River</td>
</tr>
<tr>
<td>Waterway WL018</td>
<td>Perennial stream</td>
<td>A,B</td>
<td>127 linear feet</td>
<td>Approximately 80 feet south of New York Avenue, and east of the Anacostia River</td>
</tr>
<tr>
<td>Wetland WL019</td>
<td>PFO1H</td>
<td>A,B,C,D</td>
<td>66,438 square feet</td>
<td>Approximately 130 feet north of New York Avenue and 300 feet east of the Anacostia River</td>
</tr>
<tr>
<td>Wetland WP019a</td>
<td>PFO1N</td>
<td>A,B,C,D</td>
<td>8,863 square feet</td>
<td>Approximately 50 feet north of New York Avenue and 50 feet east of the Anacostia River</td>
</tr>
<tr>
<td>Waterway WL020</td>
<td>Perennial stream</td>
<td>A,B</td>
<td>640 linear feet</td>
<td>Approximately 800 feet north of New York Avenue and east of the Anacostia River</td>
</tr>
</tbody>
</table>

Notes:  
- A = Biotic functions, B = Hydrologic functions, C = Cultural values, D = Research/Scientific values, E = Economic values

Legend:  
- PEM1A: Palustrine, emergent, persistent, temporarily flooded  
- PEM1B: Palustrine, emergent, persistent, saturated  
- PFO1A: Palustrine, forested, broad-leaved deciduous, temporarily flooded  
- PFO1C: Palustrine, forested, broad-leaved deciduous, seasonally flooded  
- PFO1E: Palustrine, forested, broad-leaved deciduous, seasonally flooded/saturated  
- PFO1J: Palustrine, forested, broad-leaved deciduous, intermittently flooded  
- PFO1H: Palustrine, forested, broad-leaved deciduous, permanently flooded  
- PFO1N: Palustrine, forested, broad-leaved deciduous, regularly flooded, tidal  
- R1OWV: Riverine, tidal, open water, permanent tidal
3.9 FLOODPLAINS

The area of analysis for floodplains includes all of the zones transected by or waterward (between the trail and the Anacostia River) of the proposed trail. This area of analysis reflects the trail’s narrowness and the likelihood that impacts to floodplain drainage would occur in the area immediately surrounding the trail.

Floodplain protection and management actions in units of the NPS are guided by Director’s Order 77-2 and its implementing procedures in *Procedural Manual 77-2: Floodplain Management*, that was developed to meet the requirements of E.O. 11988 “Floodplain Management”. Development in the floodplain is also governed by rules established by the Federal Emergency Management Agency (FEMA) for administering the National Flood Insurance Program (NFIP). In a 100-year event, floodplain drainage is designed so that cumulative increase in water on the floodplain will not exceed 1 foot. Building codes are based on this premise. Structures and facilities within NPS property need to be designed consistent with the intent of the standards and criteria of the NFIP.

Portions of the proposed trail lie in areas within the 100-year floodplain of the Anacostia River and its tributaries as depicted in Figure 3.8. Generally, the 100-year floodplain extends several hundred feet from the river. Exceptions include the areas surrounding estuaries and tributaries of the Anacostia River. Due to the trail’s proximity to the river, the mainline trail is predominantly located within the 100-year floodplain. Portions of the trail that deviate far from the river’s path and spurs that connect to other area trails tend to fall outside the 100-year floodplain.

The proposed construction of the trail within the 100-year floodplain is classified as a Class I action as defined in DO 77-2 and is subject to the NPS floodplain policies and procedures.

3.10 WATER QUALITY

The lower Anacostia River is essentially an embayment of the Potomac River with very low flow. Even though the lower 8.4 miles of the river are tidally influenced (2.9’ average tide height), the river has a very poor flushing rate. Heavy siltation, accumulation of toxic metals and organic chemicals in sediments, and sewage overflows all contribute to poor water quality in this section of the river.
Fig 3-8 ARW Area Floodplains
The Anacostia River and all but two of its tributaries are designated as Class A Waters (Primary Contact Recreation) by the Federal water quality standards. The section of the Anacostia River that lies along the project corridor has been classified by the District as an Impaired Segment under Section 303(d) of the Clean Water Act (CWA) and as a Region of Concern by the Chesapeake Bay Program. Impaired Segments are waters that do not or are not expected to meet water quality standards as given in the CWA. Pollutants of concern that have been listed in Section 303(d) for the Anacostia River include BOD, bacteria, organics, metals, total suspended solids, and oil & grease. Maryland’s 2002 Section 303(d) list includes the Anacostia River and specifies excess nutrients, suspended sediment, bacteria, BOD, polychlorinated biphenyls (PCBs), and heptachlor epoxide as pollutants of concern. The EPA has established TMDLs, which limit the amount of pollutants that can enter a water body, and a high priority has been placed on controlling these factors along the lower Anacostia River.

There are 17 combined sewer overflow (CSO) outfalls located on the Anacostia River. The two largest CSO outfalls are the Northeast Boundary CSO, which drains into the Anacostia near RFK Stadium/East Capitol Street), and the “O” Street Pump Station, just below the Navy Yard. According to the Washington Water and Sewer Authority (WASA), approximately 2.1 billion gallons per year flow into the Anacostia River from all CSO sources combined.

The existing Anacostia Drive stormwater drainage systems consists of curb and gutter collection and appears to either discharge directly into the Anacostia River or through groundwater infiltration.

3.11 CONTAMINATION

The study area for contamination includes the area within 50 feet of any of the alternative trail alignments. This level of analysis was chosen to account for possible contaminant migration from contaminated sites that may affect construction of trail alignments and public health and safety. Any existing contamination outside this boundary should not affect the proposed project.

Investigations included a regulatory file review at the Washington DC Department of Health, Environmental Health Administration Section, Water Quality Division, on August 20, 2004 and a search of the EPA databases. In addition, a windshield survey of the project corridor was conducted to identify potential sites not on regulatory databases that may present a contamination risk to construction activities. A total of 14 sites have been identified as potential contamination risks (Table 3.3). They are discussed further below. Figure 3.9 shows the location of these sites. Appendix 5 contains the contamination information resulting from the reviews.
Fig 3-9 ARW Potential Contaminated Sites
### Table 3.3
Contaminated Sites

<table>
<thead>
<tr>
<th>ID</th>
<th>Site Name</th>
<th>Address</th>
<th>ID Number</th>
<th>Contaminant of Concern</th>
<th>Tanks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>B&amp;L Auto</td>
<td>631 Howard Road SE</td>
<td>DCD 983970435</td>
<td>Hydrocarbons, Solvents</td>
<td>AST</td>
</tr>
<tr>
<td>2</td>
<td>Washington Navy Yard</td>
<td>7th Avenue and M Street SW</td>
<td>DC 9170024310</td>
<td>Metals, Solvents, Hydrocarbons, PCBs</td>
<td>- -</td>
</tr>
<tr>
<td>3</td>
<td>Anacostia Marina</td>
<td>1900 M Street</td>
<td>DCD 983968538</td>
<td>Hydrocarbons</td>
<td>- -</td>
</tr>
<tr>
<td>4</td>
<td>PEPCO Benning Generating Station</td>
<td>3400 Benning Road</td>
<td>DCD 983967951</td>
<td>Hydrocarbons</td>
<td>AST</td>
</tr>
<tr>
<td>5</td>
<td>Support Terminal Services</td>
<td>1333 M Street SE</td>
<td>DCD980350974</td>
<td>Hydrocarbons</td>
<td>- -</td>
</tr>
<tr>
<td>6</td>
<td>Kenilworth Park Landfill Site</td>
<td>Deanne Avenue</td>
<td>DCFSN0305462</td>
<td>PCBs, Metals, VOA</td>
<td>- -</td>
</tr>
<tr>
<td>7</td>
<td>US Park Police</td>
<td>1900 Anacostia Drive SE</td>
<td>DCD003254273</td>
<td>Hydrocarbons, Solvents</td>
<td>AST/UST</td>
</tr>
<tr>
<td>8</td>
<td>Poplar Point</td>
<td>705 Howard Drive SE</td>
<td>DCN000305662</td>
<td>Hydrocarbons, Pesticides, Arsenic</td>
<td>AST/UST</td>
</tr>
<tr>
<td>9</td>
<td>Stadium Exxon</td>
<td>2651 Benning Road</td>
<td>DC0000444539</td>
<td>Hydrocarbons</td>
<td>UST</td>
</tr>
<tr>
<td>10</td>
<td>Huntley Limited</td>
<td>Barney Circle</td>
<td>DC0000444539</td>
<td>Hydrocarbons</td>
<td>UST</td>
</tr>
<tr>
<td>11</td>
<td>DC Armory (Nat. Guard)</td>
<td>2001 East Capitol Street SE</td>
<td></td>
<td>Metals, Solvents</td>
<td>- -</td>
</tr>
<tr>
<td>12</td>
<td>District Yacht Club</td>
<td>1409 Water Street</td>
<td></td>
<td>Hydrocarbons</td>
<td>AST</td>
</tr>
<tr>
<td>13</td>
<td>Barney Circle Landfill</td>
<td>Barney Circle</td>
<td></td>
<td>Metals</td>
<td>- -</td>
</tr>
<tr>
<td>14</td>
<td>Washington Gas</td>
<td>1240 12th Street SE</td>
<td></td>
<td>Hydrocarbons, Metals</td>
<td>AST</td>
</tr>
</tbody>
</table>

AST = Aboveground Storage Tanks  UST = Underground Storage Tanks

**Poplar Point:** The Poplar Point site at 705 Howard Drive SE is listed on EPA’s CERCLIS database. The EPA has evaluated the site and removed it from the National Priorities List in July 2002. Above ground (AST) and underground (UST) storage tanks for storage of hydrocarbon products have been maintained on site. Pesticides were extensively used for many years. In an environmental assessment conducted in 2003, DDT (dichlorodiphenyltrichloroethane), DDE (dichlorodiphenyl dichloroethylene) and arsenic were documented in soil samples and groundwater monitoring wells throughout the site.

**Kenilworth Park (former DC landfill):** NPS owns the Kenilworth Park site, located on Deane Avenue in Kenilworth Park. This site is listed on the EPA’s CERCLIS database for metal and volatile organic contamination. From the late 1940s until the early 1970s, the site was used as a landfill for waste generated within the District. In a soil sampling event conducted in 2002, Polycyclic Aromatic Hydrocarbons, (PAHs), PCBs, arsenic, copper, magnesium, iron, lead, and volatile organics were detected. In May 1999, EPA determined that a removal action was not necessary and removed the site from the National Priorities List. The NPS is currently conducting further assessment of the area to develop a remedial action plan.
Barney Circle Landfill: The Barney Circle Landfill Site is a 10-acre lot adjacent to the Anacostia River in a primarily residential area of the District. From 1898 to 1935 municipal waste and sediment from USACE dredging operations in the Anacostia River were deposited in this site. In 1935, the property was transferred to the NPS. Instead of removing the contaminated soil, other remedies such as onsite stabilization, erosion controls, and construction of barriers were constructed in July 1997. The remedial action stabilized conditions at the site and has prevented the continued migration of hazardous substances, particularly lead, into the adjoining wetland and Anacostia River.

Washington Gas: The East Station site of Washington Gas at 1240 12th St. NE covers an area of approximately 19 acres. A portion of the site within NPS property formerly contained the East Station gas manufacturing plant. The plant was put into operation in 1888 and operated continuously until 1948. Between 1948 and 1983, the plant was used only intermittently for periods of peak gas demand. The plant was demolished in 1985 and the oil tanks were removed in 1997.

Since 1976, Washington Gas has been pumping and treating ground water to remove the dissolved organic constituents of Dense Non-Aqueous Phase Liquids (DNAPL). This DNAPL largely consists of the manufacturing tars and petroleum oils that were by-products of the natural gas production process. In 1993, a new ground water treatment facility was installed in the treatment/office building on the East Station property. Washington Gas also pumps free-phase DNAPL directly from five other recovery wells in which it naturally pools.

Washington Navy Yard/Southeast Federal Center: The Washington Navy Yard, located at 901 M Street SE, is listed on the EPA National Priorities List as a hazardous waste site and numerous cleanup efforts have been undertaken. The wastes generated during the ordnance production and shipbuilding activities that occurred on the site included metals, paints, cleaning solvents, cyanide, phenols, creosote, various petroleum products, and PCBs. Releases of PCBs, PAHs, and heavy metals have been documented on site and in the Anacostia River.

Remedial actions already underway or completed include: removal of contaminated sediments (heavy metals and PCBs) from stormwater outfalls; razing of buildings contaminated with PCBs, heavy metals, and asbestos; remediation of soil hot spots at 11 sites contaminated with heavy metals and PCBs; seawall renovation at the Anacostia River; lead paint abatement; PCB and mercury removal; and the rehabilitation of nearly six miles of stormwater and sanitary sewer pipes.

US Park Police: The US Park Police facility located at 1900 Anacostia Drive NE has two fueling facilities. A 12,000-gallon AST located near the US Park Police heliport is fairly new and complies with current AST construction standards. The fleet fueling facility west of the US Park Police building has one 10,000 gallon UST which was installed in 1996. Although no discharges or contamination has been documented, the current condition of this tank is unknown and a recent assessment has not been performed.

Other Sites: Several other potential sites are located nearby but present limited contamination risk to construction activities based on distance to the site, level of documented contamination, and/or limited construction activity in vicinity of the contaminated site. These include PEPCO
Benning Generating Station, DC Armory, Support Terminal Services, Huntley Limited, B&L Auto, and Stadium Exxon.
CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

Environmental consequences associated with each of the alternatives were assessed in accordance with National Park Service’s (NPS) Director’s Order 12: Conservation Planning, Environmental Impact Analysis and Decision-making as follows.

4.1 NEIGHBORHOODS

The potential effects of the proposed ARW alternatives on neighborhoods and communities are defined below.

- Negligible – the effect would not be perceptible by neighborhood residents and would not affect their quality of life.
- Minor – the effect would be noticeable to neighborhood residents and would result in minor impacts or improvements to their quality of life and their access to the Anacostia Park and its resources.
- Moderate – the effect would be noticeable to neighborhood residents and would result in obvious impacts or improvements to their quality of life and their access to the Anacostia Park and its resources.
- Major – the effect would substantially change neighborhood resident’s access to Anacostia Park and its resources and would result in significant improvements or severe impacts to their quality of life.

The No-Action Alternative would have a negligible effect on neighborhoods. All current access to Anacostia Park and its resources would be maintained. Minor improvements associated with normal maintenance and safety operation would be implemented by NPS.

The Action Alternatives would have a moderate benefit on the resident’s access to the Park and resident’s overall quality of life. Benefits common to each of the Action Alternatives would include:

- Increased connectivity between communities and park resources and facilities;
- Improved bicycle and pedestrian access to the Anacostia River, the Anacostia Park, and other areas along the waterfront; and
- Improved bicycle and pedestrian safety.

Although the specific location of each proposed action alignment within park boundaries varies, each provides improved pedestrian and bicycle connections to Anacostia Park from neighborhoods adjacent to the Park as shown in Table 4.1.
### Table 4.1: ARW Connection Locations

<table>
<thead>
<tr>
<th>Design Section</th>
<th>Path Connections</th>
<th>Communities that Would Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Howard Road near South Capitol Street</td>
<td>Barry Farms, Hillsdale, and Historic Anacostia</td>
</tr>
<tr>
<td>1</td>
<td>Good Hope Road near the existing Anacostia Park Entrance</td>
<td>Historic Anacostia and Fairlawn</td>
</tr>
<tr>
<td>1</td>
<td>The Anacostia Metro Station</td>
<td>Barry Farms, Hillsdale, and Historic Anacostia</td>
</tr>
<tr>
<td>1</td>
<td>Nicholson Street near the existing Anacostia Park entrance</td>
<td>Fairlawn and Twining</td>
</tr>
<tr>
<td>1</td>
<td>DC Center for Therapeutic Recreation at G Street, SE</td>
<td>Twining and Greenway</td>
</tr>
<tr>
<td>2</td>
<td>South side of Benning Road to Oklahoma Avenue</td>
<td>Langston and Kingman Park</td>
</tr>
<tr>
<td>2</td>
<td>Intersection of C Street and Oklahoma Avenue along the north side of East Capitol Street</td>
<td>Kingman Park and Lincoln Park</td>
</tr>
<tr>
<td>2</td>
<td>DC Armory at East Capitol Street</td>
<td>Lincoln Park</td>
</tr>
<tr>
<td>2</td>
<td>South side of East Capitol Street to Independence Avenue</td>
<td>Hill East</td>
</tr>
<tr>
<td>2</td>
<td>Intersection of 17th Street, SE and Barney Circle</td>
<td>Barney Circle</td>
</tr>
<tr>
<td>2</td>
<td>M Street between 11th Street, SE and Barney Circle</td>
<td>Washington Navy Yard and Near Southeast</td>
</tr>
<tr>
<td>2</td>
<td>Water Street, SE from 12th Street, SE to M Street at the Washington Navy Yard</td>
<td>Washington Navy Yard and Near Southeast</td>
</tr>
<tr>
<td>3</td>
<td>Hayes Street to Minnesota Avenue Metro Station</td>
<td>Mayfair-Parkside</td>
</tr>
<tr>
<td>3</td>
<td>Bladensburg Trail</td>
<td>Colmar Manor and Bladensburg</td>
</tr>
</tbody>
</table>

Additionally, the ARW, with its continuous trail, would function as a link between certain neighborhoods and neighborhood facilities. The trail would allow residents to bike or walk a more direct path to existing park facilities, resulting in shorter, less circuitous routes to reach local resources. Neighborhoods on the east side of the Anacostia River would have improved access to:

- Anacostia Field House
- Anacostia Metro Station
- DC Center for Therapeutic Recreation
- Minnesota Ave Metro Station
- Kenilworth Parkside Recreational Area and Park
- Bladensburg Waterfront Trail
- DC Public School
- Anacostia Park
- Fort Circle Parks
- Poplar Point
- Kenilworth Aquatic Gardens

Neighborhoods on the west side on the Anacostia River would have improved access to:

- Eastern Power Boat Club
- District Yacht Club
- Seafarers Yacht Club
- Washington Yacht Club
- Anacostia Community Boathouse
- Kingman Island
- RFK Stadium
- Langston Golf Course
- Anacostia Park
The ARW would not change access across the Anacostia River, and existing pedestrian bridge crossings would remain.

4.2 PARKS AND RECREATIONAL FACILITIES

The potential effects of the proposed ARW on park and recreational facilities are defined below.

- Negligible – the effect on parks and recreational facilities would not be perceptible to visitors.
- Minor – the effect would be noticeable to visitors and would result in minor impacts or improvements to park and recreational facilities.
- Moderate – the effect would be noticeable to visitors and would result in obvious impacts or improvements to park and recreational facilities.
- Major – the effect would substantially change the visitors’ perception of the parks and recreational facilities.

The No-Action Alternative would have a negligible effect on parks and recreational facilities in the study area. Current access to and between Anacostia Park and associated recreational facilities would be maintained. Minor improvements associated with normal maintenance and safety operation would be implemented by NPS.

Trail alignments associated with the Action Alternatives would have a moderate effect on parks and recreational facilities within the study area. Each would require minor conversions of land from open space to a trail. The ARW would also allow new areas of the Park with different environments to be accessible to visitors. Additionally, the Park would be more accessible to visitors via Metro and from the various trails in the area.

4.3 VISITOR USE AND EXPERIENCE

The potential effects of the proposed ARW on visitor use and experience are defined below.

- Negligible – the effect would not be perceptible by most visitors.
- Minor – the effect would noticeably change a few visitors’ experience and would result in minor impacts or improvements in the quality of the experience.
- Moderate – the effect would noticeably change many visitors’ experience and would result in obvious impacts or improvements in the quality of the experience.
- Major – the effect would substantially change many visitors’ experience and would result in significant improvements or severe impacts in the quality of the experience, such as the addition or elimination of a recreational opportunity or a permanent change in an area.

The No-Action Alternative would have a negligible effect on visitor use and experience. Under the No-Action Alternative, NPS would not construct a new trail or make any enhancements to existing bike and pedestrian facilities. However, NPS would continue to maintain and operate
Anacostia Park and implement minor improvements as part of its normal maintenance and safety operations.

The Action Alternatives would have a moderate, beneficial effect on visitor use and experience. Each Action Alternative would supplement the existing trail system and provide additional opportunities for bicycling, walking, and enjoying the river. Visitor experience would be enhanced by the proposed ARW because it would provide safe and convenient means for park visitors to enter the Park from the surrounding neighborhoods to enjoy the Anacostia waterfront and Anacostia Park resources. The trail would also enhance visitor experience by improving connectivity between activity centers in Anacostia Park.

### 4.4 AREA PLANNING DOCUMENTS

The potential effects of the proposed ARW on existing plans are defined below.

- **Negligible** – the effect would not require any adjustment or change in plan concepts.
- **Minor** – the effect would require a minor change in the siting of certain facilities but would still conform to planning document concepts.
- **Moderate** – the effect would require a change of location or function of activity types but the basic plan would remain intact. The action would not preclude implementation of planning document concepts.
- **Major** – the effect would preclude implementation of plan concepts.

The No-Action Alternative would have a moderate effect on existing plans. Two main planning documents, the Anacostia Waterfront Initiative (AWI) and the draft Anacostia General Management Plan concepts exist. The AWI plan suggests an extensive multi-use trail network in the Anacostia area, and the No-Action Alternative would not support that concept. However, it would not preclude the development of a trail network in the future. Because the Anacostia General Management Plan is not yet finalized and the decision whether to implement the ARW precedes scheduled finalization, there is no potential effect to the proposed plans. However, based on the two draft management strategies, it would not preclude either concept.

The Action Alternatives would have a minor effect on existing plans. The trail network concept in the AWI plan is longer and more extensive than the proposed ARW trail. The proposed trail would be in a similar location and serve the same function as the trail concept in the AWI. It is consistent with planning documents for the study area, which call for riverfront accessibility improvements primarily focused on the Anacostia Park and other recreational facilities. It also would not preclude trail additions in the future. The details of these plans are provided in Appendix 4.

### 4.5 ARCHAEOLOGICAL AND HISTORICAL SITES

Section 101(b)(4) of the National Environmental Policy Act (NEPA) of 1969 (P.L. 91-190), as amended, requires the Federal government to coordinate and plan its actions to, among other goals, “preserve important historic, cultural and natural aspects of our national heritage....” The
Council on Environmental Quality’s (CEQ) implementing regulations requires the consideration of impacts on cultural resources either listed in or eligible to be listed in the National Register of Historic Places.

Impacts to archaeological resources are described in terms of type, context, duration, and intensity, which is consistent with the regulations of the CEQ that implement NEPA. These impact analyses are also intended, however, to comply with the requirements of both NEPA and Section 106 of the National Historic Preservation Act (NHPA). In accordance with the Advisory Council on Historic Preservation’s regulations implementing Section 106 of the NHPA (36 CFR Part 800, Protection of Historic Properties), impacts to archaeological resources are identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that are either listed in or eligible to be listed in the National Register of Historic Places; (3) applying the criteria of adverse effect to affected cultural resources either listed in or eligible to be listed in the National Register; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under the Advisory Council’s regulations, a determination of either adverse effect or no adverse effect must be made for affected National Register-eligible cultural resources. An adverse effect occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the National Register (e.g. diminishing the integrity of the resource’s location, design, setting, materials, workmanship, feeling, or association). Adverse effects also include reasonably foreseeable effects caused by the preferred alternative that would occur later in time, be farther removed in distance or be cumulative (36 CFR 800.5, Assessment of Adverse Effects). A determination of no adverse effect means there is an effect, but the effect would not diminish in any way the characteristics of the cultural resources that qualify it for inclusion in the National Register.

4.5.1 Effects on Archaeological Resources

As noted in Section 3.6, archaeological resources along the Anacostia River are located primarily on upper river terraces. Each ARW alternative primarily follows the low Anacostia river terraces or is located within existing roadways on the upper terrace where possible, minimizing impacts on known archaeological resources.

For purposes of analyzing impacts to archaeological resources either listed in or eligible to be listed in the National Register, the thresholds of change for intensity of an impact are:

- Negligible – the effect would be at the lowest level of detection (barely measurable with no perceptible consequences, either adverse or beneficial); for purposes of Section 106, the determination of effect would be no adverse effect.
- Minor – the effect would result in minor disturbance of a site with little to no loss of integrity or maintenance and preservation of a site; for purposes of Section 106, the determination of effect would be no adverse effect.
- Moderate – the effect would result in disturbance of a site with a loss of integrity or stabilization of a site. For purposes of Section 106, the disturbance of a site would be an
adverse effect. A Memorandum of Agreement (MOA) is executed among the National Park Service and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). The mitigation measures identified in the MOA reduce the intensity of impact from major to moderate. For purposes of Section 106, the stabilization of a site would not be adverse effect.

- Major – the effect would be disturbance of a site with a loss of integrity or active intervention to preserve a site. For purposes of Section 106, the disturbance of a site would be an adverse effect, and the National Park Service and applicable state or tribal historic preservation officer are unable to negotiate and execute a MOA in accordance with 36 CFR 800.6(b). For purposes of Section 106, the active intervention to preserve a site would not be adverse effect.

A description of the potential impacts to each of the archaeological sites that are located within the Area of Potential Effect (APE) for each of the design sections follows.

**Design Section 1:** In Design Section 1, NPS identified five archaeological sites (51SE6, 51SE13, 51SE15, 51NE13, and 51NE15) within the APE of both action alternatives. Four of these sites (51SE13, 51SE15, 51NE13, and 51NE15) may be impacted by construction activities. Sites 51SE6 is adjacent to a portion of the trail that would be located within existing pavement on an NPS service road and would not be subjected to ground disturbance. This site may have been disturbed by previous road construction but would not be impacted by any of the Action Alternatives.

**Design Section 2:** Archaeological site 51SE16 also lies within the APE of the Action Alternatives of Design Section 2. This site has been previously disturbed but would not be impacted by construction activities associated with any Action Alternatives because the site is located on the existing pavement of M Street and Water Street.

**Design Section 3:** In Design Section 3, NPS identified one archaeological site (51NE1) within the APE of the Action Alternatives. This site is disturbed and possibly destroyed, according to DC HPO site records. If not, this site would be impacted by construction activities with all Action Alternatives.

For each alternative, the impacts to archaeological resources would be minimized and/or avoided because the alternatives are:

- Located on the lower Anacostia River terrace. This is likely to preclude any impacts to any of the archaeological sites, which are unlikely to occur in the lower terrace of the river;
- Located within a narrow construction footprint that would involve minimal, shallow earth movement and disturbance; or
- Located within existing roadway alignments where possible.
However, further consultation with the DC HPO and the NPS to determine the National Register eligibility and to determine the effects of each of the alternatives on archaeological sites would be necessary before project alternatives are finalized.

### 4.6 VISUAL AND AESTHETICS

Analyses of the potential impacts on visual and aesthetic qualities of the park and surrounding areas are defined below.

- **Negligible** – the effect would be localized and not measurable or at the lowest level of detection.
- **Minor** – the effect would be localized and slight but detectable.
- **Moderate** – the effect would be readily apparent and appreciable.
- **Major** – the effect would be severely adverse and highly noticeable.

While the No-Action alternative would have negligible effects, construction of any of the build alternatives would have positive visual and aesthetic impacts for the park and the surrounding areas. The trail itself would provide a means for area residents and visitors to experience the entire park as a ‘green space.’

A wide variety of river views are provided in areas where the trail meanders close to the river and where the spurs built into each of the alternative alignments lead down to the waterfront. Increased visibility of the river might also foster a sense of ownership, increasing awareness of the Anacostia River’s pollution problem and leading to intensified clean-up efforts.

Construction of the trail would also result in a rehabilitation of areas immediately surrounding the trail. New signage would be installed to facilitate connections with other area trails and provide interpretive information at sites of natural, historic or cultural interest. Landscaping would also be installed providing shade to the trail, vegetative screening from nearby roads and highways, and a more natural environment. To avoid potential minor aesthetic impacts on Park viewsheds, bridge structures and boardwalks would be designed to meet NPS Standards and to blend with the surroundings and natural environment of the Anacostia Park.

**Design Section 3:** Design Section 3 is the only section that has alternatives with unique visual impacts. Immediately north of Benning Road the alignments of Alternatives 3A (Preferred) and 3B continue north between the PEPCO plant and the river and then turn east following the northern boundary of the DCDPW Trash Transfer Station to Anacostia Avenue NE. The industrial aesthetics of the power plant and trash transfer station would be a visual imposition upon trail users in this area and would need to be mitigated through creative design. This might entail the use of a berm or vegetation as a visual buffer for trail riders. In the same portion of the trail, Alternative 3C travels east along the north side of Benning Road. This is a major divided roadway and would require that designers provide clear signage to insure the safety of users. Physical barriers such as trees or bollards would also be used to spatially distance trails users from the roadway.
4.7 HABITAT AND WILDLIFE

The potential effects of the ARW on the study area’s habitat and wildlife are defined below.

- **Negligible** – no species of concern and/or their habitats are present; no impacts or only temporary impacts are expected;
- **Minor impacts** – non-breeding animals of concern and/or their habitats are present, but only in low numbers; no critical habitats are present; occasional disturbance to wildlife may occur but would not impact feeding, nesting, or breeding;
- **Moderate impacts** – breeding animals of concern and/or their habitats are present; animals are in vulnerable life stages; occasional mortality or interference with survival activities are expected but would not threaten the species present;
- **Major impacts** – breeding animals are present in relatively high numbers and/or during vulnerable life stages; habitat has a history of being used by wildlife during critical periods and is somewhat limited; mortality is expected on a regular basis and could threaten species survival.

Under the No-Action Alternative no construction or trail implementation would occur; therefore, there would be negligible impacts to habitat and wildlife.

**Design Section 1:** The Action Alternatives for the proposed ARW would have negligible impacts on habitats and wildlife within Design Section 1 because the trail would be constructed mostly on existing turf or paved areas. The trail would be boardwalked over emergent wetlands creating small areas of direct impacts. None of the Action Alternatives within Design Section 1 would permanently fragment habitats, or isolate or create barriers to wildlife migration or movements because the trail is only 14 feet wide and it would be constructed either at-grade or as a bridge, not on a berm that would create a blockage to wildlife movement.

**Design Section 2:** The Action Alternatives for the proposed ARW would have negligible impacts on habitats and wildlife within Design Section 2 because the trail would be constructed mostly on existing turf or paved areas. The trail would be boardwalked over emergent wetlands creating small areas of direct impacts. None of the Action Alternatives within Design Section 2 would permanently fragment habitat, or isolate or create barriers to wildlife migration or movements because the trail is only 14 feet wide, and it would be constructed either at-grade or as a bridge, not on a berm that would create a blockage to wildlife movement.

**Design Section 3:** The Action Alternatives for the proposed ARW would have minor impacts on habitats in Design Section 3 because the trail would encroach on forests and wetlands in the northern portion of Section 3, between Anacostia Avenue and the Bladensburg Trail. The trail in Section 3 would approach the river and cross over Lower Beaver Dam Creek as well as an extensive area of forested wetlands. In this area, the trail would be an elevated boardwalk structure to minimize impacts to riparian and aquatic habitats. Additionally, in some areas north of Benning Road, the proposed ARW would pass through areas of upland forest; however, because the trail would be less than 14 feet wide throughout its length, upland forest impacts would be minor because construction of the trail would not create large openings in the canopy,
and NPS would use construction techniques requiring few tree takings. Occasional disturbances to wildlife may occur when pedestrians and bicyclists use the trail; however, the species inhabiting Anacostia Park are tolerant of human presence. None of the Action Alternatives within Design Section 3 would permanently fragment habitat, or isolate or create barriers to wildlife migration or movements because the trail is only 14 feet wide and it would be constructed either at-grade or as a bridge, not on a berm that would create a blockage to wildlife movement.

**Construction Impacts:** Various wildlife species, including small mammals, reptiles, and several species of birds were identified throughout the study area. The effects of construction on wildlife would be short-term and minor since species inhabiting Anacostia Park are acclimated to urban noises and disturbances and any relocation would be temporary.

### 4.8 RARE, THREATENED, AND ENDANGERED (RTE) SPECIES

NPS used the same criteria to assess impacts to RTE species as used in assessing impacts to habitat and wildlife. NPS corresponded with Maryland Department of Natural Resources (MDNR) and US Fish and Wildlife Service (USFWS) in June 2004 to determine if any RTE species exist within the ARW study area. The response received from MDNR indicated that no state- or federally-listed RTE species have been documented within the study area; however, MDNR stated that “if appropriate habitat is available, certain species could be present without documentation because adequate surveys have not been conducted” (Byrne, July 9, 2004). The response received from USFWS (Moser, September 14, 2004) indicated that no federally listed RTE species are documented within the study area with the exception of occasional transient or migratory individuals. Based on these responses, the No Action Alternative and each of the Action Alternatives are expected to have negligible impacts on RTE species.

### 4.9 WETLANDS AND WATERWAYS

Impacts to tidal and non-tidal wetlands and waterways from the proposed Action Alternatives would require approval by the NPS Regional Director, authorization from USACE, and for the portions of the trail within the State of Maryland, the Maryland Department of the Environment’s (MDE) Tidal Wetlands Division and Non-tidal Wetlands and Waterways Division. The process for avoidance, minimization and compensatory mitigation is generally consistent among these agencies, with the exception that NPS’ preferential sequence of mitigation begins with restoration of degraded wetlands.

The criteria for impacts to wetlands and waterways varies among the USACE, MDE, and NPS guidelines. Therefore, to determine level of impact, NPS will apply the strictest criteria to evaluate impacts to wetlands and waterways. These criteria are summarized in the list below:

- **Negligible** – impacts to wetlands and waterways less than or equal to 0.1 acre would not require mitigation under USACE, MDE, or NPS guidelines.
• Minor – impacts to wetlands between 0.1 and 1.0 acre, or to less than 300 linear feet of waterways, may require mitigation under all guidelines.
• Major – impacts to wetlands over 1.0 acre, or to more than 300 linear feet of waterways, would require mitigation under all guidelines.

This project qualifies as an Excepted Action under DO 77-1, specifically described in Section 4.2.A.1.a of Procedural Manual 77-1 as “…scenic overlooks and foot/bike trails or boardwalks, including signs, the primary purposes of which are public education, interpretation, or enjoyment of wetland resources (not to include parking lots, access roads, and other associated facilities).” The implementation of the preferred alternative would result in minimal impacts to wetlands and would satisfy all criteria detailed in Appendix 2 of Procedural Manual 77-1 entitled “Best Management Practices (BMPs)/Conditions” to be Applied When Proposed Actions Have the Potential to Have Adverse Impacts on Wetlands that must be met in order for a project to qualify as an Excepted Action. These include:

• Effects on hydrology: Action must have only negligible effects on site hydrology, including flow, circulation, velocities, hydroperiods, water level fluctuations, and so on.
• Water quality protection and certification: Action is conducted so as to avoid degrading water quality to the maximum extent practicable. Measures must be employed to prevent or control spills of fuels, lubricants, or other contaminants from entering the waterway or wetland. Action is consistent with state water quality standards and Clean Water Act Section 401 certification requirements (check with appropriate state agency).
• Erosion and siltation controls: Appropriate erosion and siltation controls must be maintained during construction, and all exposed soil or fill material must be permanently stabilized at the earliest practicable date.
• Effects on fauna: Action must have only negligible effects on normal movement, migration, reproduction, or health of aquatic or terrestrial fauna, including at low flow conditions.
• Proper maintenance: Structure or fill must be properly maintained so as to avoid adverse impacts on aquatic environments or public safety.
• Heavy equipment use: Heavy equipment use in wetlands must be avoided if at all possible. Heavy equipment used in wetlands must be placed on mats, or other measures must be taken to minimize soil and plant root disturbance and to preserve preconstruction elevations.
• Stockpiling material: Whenever possible, excavated material must be placed on an upland site. However, when this is not feasible, temporary stockpiling of excavated material in wetlands must be placed on filter cloth, mats, or some other semipermeable surface, or comparable measures must be taken to ensure that underlying wetland habitat is protected. The material must be stabilized with straw bales, filter cloth, or other appropriate means to prevent reentry into the waterway or wetland.
• Removal of stockpiles and other temporary disturbances during construction: Temporary stockpiles in wetlands must be removed in their entirety as soon as practicable. Wetland areas temporarily disturbed by stockpiling or other activities during construction must be returned to their pre-existing elevations, and soil, hydrology, and native vegetation communities must be restored as soon as practicable.
• Topsoil storage and reuse: Revegetation of disturbed soil areas should be facilitated by salvaging and storing existing topsoil and reusing it in restoration efforts in accordance with NPS policies and guidance. Topsoil storage must be for as short a time as possible to prevent loss of seed and root viability, loss of organic matter, and degradation of the soil microbial community.

• Native plants: Where plantings or seeding are required, native plant material must be obtained and used in accordance with NPS policies and guidance. Management techniques must be implemented to foster rapid development of target native plant communities and to eliminate invasion by exotic or other undesirable species.

• Boardwalk elevations: Minimizing shade impacts, to the extent practicable, should be a consideration in designing boardwalks and similar structures. (Placing a boardwalk at an elevation above the vegetation surface at least equal to the width of the boardwalk is one way to minimize shading.)

• Wild and Scenic Rivers: Action cannot be "excepted" (see Section 4.2 of these procedures) if proposed in a component of the National Wild and Scenic River System or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in official study status.

• Coastal zone management: Action must be consistent, to the maximum extent practicable, with state coastal zone management programs.

• Endangered species: Action must not jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, including degradation of critical habitat (see NPS Management Policies (1988) and guidance on threatened and endangered species).

• Historic properties: Action must not have adverse effects on historic properties listed or eligible for listing in the National Register of Historic Places.

4.9.1 Avoidance and Minimization of Impacts

Following the guidance provided in *Procedural Manual 77-1: Wetland Protection*, NPS quantified and evaluated potential direct and indirect impacts of various ARW alternatives on wetlands and waterways delineated within the study area. NPS developed the ARW design section alternatives by avoiding wetland impacts to the greatest extent possible and refined alternatives to minimize the unavoidable impacts. Impacts include direct impacts such as fill and shading and indirect impacts such as changes to hydrology. NPS minimized unavoidable impacts to the greatest extent practicable by realigning the trail, reducing trail footprint, utilizing low impact construction techniques, and maintaining hydrology through stormwater management design that ensures overall hydrology that supports wetland systems.

The ARW would allow park users to view and appreciate the restoration projects planned throughout Anacostia Park without impacting these sensitive areas. The ARW alternatives are designed to avoid and minimize impacts to wetlands and waterways, especially those designated for or currently undergoing restoration, such as Watts Branch, the Kenilworth Marsh, and the 31-acre wetland mitigation site near the PEPCO power plant. None of the areas planned for restoration would be impacted by the ARW. In areas where the trail would be placed in landscaped or managed turf areas, it would meander around existing trees and wetlands to avoid
impacts to those resources. Additionally, elevated boardwalk structures would be used in areas where the trail would pass over large wetlands or along the riverbank.

The wetlands and waterways identified during field investigations and the impacts expected from the various alternatives are presented in Tables 4.2 to 4.4. The No-Action alternative would not have any impacts to wetlands. Each Action Alternative would result in minor impacts to wetlands and/or waterways. Tables 4.2 through 4.4 summarize the impacts associated with each alternative in each design section for each wetland or waterway identified by NPS.

<table>
<thead>
<tr>
<th>Wetland/Waterway</th>
<th>Type</th>
<th>Alternative 1A</th>
<th>Alternative 1B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland WP005</td>
<td>PEM1B</td>
<td>508.7 square feet</td>
<td>No impact</td>
</tr>
<tr>
<td>Wetland WP005a</td>
<td>PEM1A</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Wetland WP005b</td>
<td>PEM1B</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Wetland WP006</td>
<td>PEM1B</td>
<td>233.9 square feet</td>
<td>233.9 square feet</td>
</tr>
<tr>
<td>Waterway WL007</td>
<td>Ephemeral channel</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Waterway WL008</td>
<td>Ephemeral channel</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Waterway WL009</td>
<td>Ephemeral channel</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td><strong>Total Wetland Impacts (square feet)</strong></td>
<td><strong>742.6</strong></td>
<td><strong>233.9</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Wetland/Waterway</th>
<th>Type</th>
<th>Alternative 2A</th>
<th>Alternative 2B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland WL001</td>
<td>PFO1N</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Waterway WL001a</td>
<td>Ephemeral channel</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Waterway WL002</td>
<td>Ephemeral channel</td>
<td>233.3 square feet</td>
<td>233.3 square feet</td>
</tr>
<tr>
<td>Wetland WL003</td>
<td>PEM1B</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Wetland WP003a</td>
<td>PEM1A</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Wetland WP003b</td>
<td>PEM1A</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Waterway WL003c</td>
<td>Ephemeral channel</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Wetland WP003d</td>
<td>PEM1A</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Waterway WL004</td>
<td>Ephemeral channel</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td><strong>Total Wetland Impacts (square feet)</strong></td>
<td><strong>233.3</strong></td>
<td><strong>233.3</strong></td>
<td></td>
</tr>
<tr>
<td>Wetland/Waterway</td>
<td>Type</td>
<td>Alternative 3A</td>
<td>Alternative 3B</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Wetland WL010</td>
<td>R1OWV</td>
<td>1473.2 square feet</td>
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<tr>
<td>Waterway WL011</td>
<td>Ephemeral channel</td>
<td>No impact</td>
<td>No impact</td>
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<tr>
<td>Wetland WP011a</td>
<td>PFO1A</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Waterway WL012</td>
<td>Perennial stream</td>
<td>No impact</td>
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<tr>
<td>Waterway WL013</td>
<td>Perennial stream</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Wetland WL014</td>
<td>PFO1E</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Waterway WL015</td>
<td>Perennial stream</td>
<td>1291.7 square feet</td>
<td>1291.7 square feet</td>
</tr>
<tr>
<td>Wetland WL015a</td>
<td>PFO1B</td>
<td>276.5 square feet</td>
<td>No impact</td>
</tr>
<tr>
<td>Wetland WL016</td>
<td>PFO1C</td>
<td>55.1 square feet</td>
<td>2942.3 square feet</td>
</tr>
<tr>
<td>Wetland WL017</td>
<td>PFO1J</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Waterway WL018</td>
<td>Perennial stream</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Wetland WL019</td>
<td>PFO1H</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Wetland WL019a</td>
<td>PFO1H</td>
<td>812.5 square feet</td>
<td>812.5 square feet</td>
</tr>
<tr>
<td>Waterway WL020</td>
<td>Perennial stream</td>
<td>1014.5 square feet</td>
<td>1014.5 square feet</td>
</tr>
<tr>
<td>Total Wetland Impacts (square feet)</td>
<td>4923.5</td>
<td>6061</td>
<td>16,751.5</td>
</tr>
</tbody>
</table>

**Construction Impacts:** Most impacts to wetlands and waterways resulting from construction would be temporary. Boardwalks through wetland areas would be constructed in a low-impact manner. This would entail setting the first boardwalk pilings from an adjacent non-wetland area and then proceeding with construction of the trusses and planking to complete an initial portion of the boardwalk. The work would then proceed linearly, with all construction equipment using newly constructed boardwalk as a working platform to extend the trail through the wetland. All construction equipment would remain within the ultimate footprint of the trail. Activities in these areas may cause a temporary disturbance; however, the construction of the boardwalk areas would not lead to a significant loss of wetland.

### 4.10 FLOODPLAINS

The potential intensity of floodplain impacts were derived from the available information on Anacostia Park, including available flood rate insurance maps. Impacts on floodplains are defined as follows:

- **Negligible** – floodplains would not be affected, or changes would be either non-detectable or if detected, would have effects that would be considered slight and local;
- **Minor impacts** – changes in floodplain would be measurable, although changes would be small, and the effects would be localized. No mitigation measure associated with water quality or hydrology would be necessary;
- **Moderate impacts** – changes in floodplain would be measurable and would be relatively local. Mitigation measures associated with water quality or hydrology would be necessary and the measures would likely succeed; or
• Major impacts – changes in floodplain would be readily measurable, would have substantial consequences that would be measurable and widespread. Mitigation measures would be necessary and their success would not be guaranteed.

All of the Alternatives in each of the Design Sections have portions of their alignments within the 100-year floodplain of the Anacostia River. The No Action alternative would have no impact on existing flood elevations and the existing floodplain’s function would remain unchanged.

Due to the large floodplain area and its topography the encroachment potential of the project is anticipated to be negligible. The trail footprint is narrow and would be constructed at-grade except in areas where an elevated boardwalk structure is employed to minimize impacts to wetlands and maintain conveyance of drainage ditches. Except for Alternative 2 in Design Section 1, this project would not involve the replacement or modification of any existing drainage structures under any of the alternative alignments. The road relocation in Alternative 2 of Design Section 1 would require fill and new drainage structures; however, since this system would essentially replace the existing stormwater management system for this portion of Anacostia Drive no change in hydraulics is anticipated.

The proposed trail and associated structures would perform hydraulically in a manner equal to or greater than the existing structure, and backwater surface elevations are not expected to increase. Boardwalk areas would allow flood waters to pass unobstructed through the pilings. As a result, there would be no significant adverse impacts on natural and beneficial floodplain values.

There would be no significant change in flood risk, and there would not be a significant change in the potential for interruption or termination of emergency service or emergency evacuation routes as the portions of the trail alignments located within the 100-year floodplain are not through roads.

Any impacts of the trail construction on floodplain values would be minimized and mitigated. Therefore, the construction of any of the alternative trail alignments is not anticipated to have any significant impacts on floodplains. However, due to the classification of the proposed action within the floodplain as a Class I action, the NPS procedure for implementing DO 77-2: Floodplain Management requires that a Statement of Findings (SOF) be prepared for these actions within a regulated floodplain.

The NPS Procedural Manual 77-2: Floodplain Management lists actions that are excepted from additional procedures in compliance with floodplain management requirements. These excepted actions include foot trails. However, the proposed Riverwalk would include paved sections for bicycle use, and would also be wider than a foot trail. Therefore, a draft SOF has been prepared and is attached to this EA in Appendix 6.

4.11 WATER QUALITY

The effects on water quality within the Anacostia watershed are defined as follows:
• Negligible – stormwater management systems would not be affected or changes would be either non-detectable or if detected, would have water quality effects that would be considered slight and local;
• Minor impacts – changes in stormwater management systems would be measurable although changes would be small, and the effects on water quality would be localized. No mitigation measure associated with water quality or hydrology would be necessary;
• Moderate impacts – changes in stormwater management would be measurable and effects on water quality would be relatively local. Mitigation measures associated with water quality or hydrology may be necessary; or
• Major impacts – changes in stormwater management would be readily measurable and effects on water quality would be measurable and widespread. Mitigation measures would be necessary.

The AWI outlines the District’s plan for improving water quality in the vicinity of the Anacostia River. Restoration projects include daylighting streams, which involves taking a stream out of a buried pipe and re-forming a natural channel. This process improves water quality, provides increased habitat, and enhances public space. Watts Branch is one stream within the Anacostia watershed that has been daylighted, and plans are currently underway to improve water quality in the stream. The ARW trail would cross or parallel tributaries of the Anacostia, providing park users an opportunity to appreciate the efforts made to improve water quality within the watershed. The trail would cross these tributaries on existing crossings or along boardwalks, avoiding impacts to the waterways.

The quantity and quality of stormwater runoff is not expected to be significantly affected by any of the proposed build alternatives. Each alternative in each of the design sections would have similar increases in impervious area. Alternatives in Design sections 1, 2 and 3 would result in approximately 6.5 acres, 3.7 acres, and 3.7 acres of increased impervious area, respectively. One exception, Alternative 3C in Design Section 3, would result in approximately 1.4 fewer acres of increased impervious area. Anacostia Park is comprised of over 1,200 acres and this increase in impervious area would account for approximately one percent of the total area. Furthermore, although impervious areas would be increased with the proposed project, the increased pollutant load resulting from a bicycle/pedestrian trail would be minimal. In addition portions of the trail would be constructed on boardwalks allowing opportunity for stormwater to pass under or through the structure.

The No-Action alternative would not provide for opportunities to upgrade the drainage features of the existing stormwater management system. The construction of the trail would either allow stormwater to sheet flow across the trail or utilize existing or upgraded drainage features. The Anacostia Drive relocation in Alternative 1B of Design Section 1 would require new drainage structures; however, since this system would essentially replace the existing stormwater management system for this portion of the road, no change in hydraulic capacity is anticipated. Therefore, the proposed trail would have no impact on stormwater conveyance. The proposed stormwater design would include, at a minimum, the water quality requirements for water quality impacts as required by the DC Department of Health, Watershed Protection Division. Therefore, no further mitigation for water quality inputs would be needed.
Construction Impacts: To avoid water quality impacts during construction, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared in accordance with the National Pollution Discharge Elimination System (NPDES) permit requirements. Best Management Practices (BMPs) such as the placement of silt fences would be employed throughout construction.

4.12 CONTAMINATION

The analysis of potential contamination impacts on the trail placement were derived from available information on sites within the vicinity of the AWR, including available regulatory databases. Impacts from contamination are defined as follows:

- Negligible – After a review of all available information, there is nothing to indicate contamination would be an issue. Public health and safety would not be affected, or the effects would be at a low level of detection and would not have an appreciable effect on the public health or safety.
- Minor impacts – The former or current operation deals with hazardous materials; however, based on all available information there is no reason to believe there would be any involvement with contamination. The effects would be detectable but would not have an appreciable effect on the public health or safety.
- Moderate impacts – After a review of all available information, indications are found that identify known soil and/or water contamination and that remediation would be required. The effects would be readily apparent and would result in a noticeable effect on the public health or safety.
- Major impacts – After a review of all available information, there is a potential for contamination issues. The effects would be readily apparent and would result in substantial noticeable effect on the public health or safety on a regional scale.

The alternative alignments vary only slightly horizontally, therefore, minimization of contamination concerns for trail construction through the selection of an alternative alignment is not an option. The No-Action Alternative will have no involvement with contaminated sites.

The general risk of contamination affecting this project from the sites assessed in this report is minimal despite the proximity of some of the sites to the proposed alternatives. Of the sites listed in Table 3.3, some have documented on-site contamination but the contamination is not expected to extend into the project area due to the location of the contaminant plume. These sites include Poplar Point Nursery, US Park Police, PEPCO Benning Generating Station, Barney Circle Landfill, DC Armory, Washington Navy Yard, and Kenilworth Park Landfill. Other sites, such as The District Yacht Club, Anacostia Marina, Washington Gas, Support Terminal Services, Huntley Limited, B&L Auto, and Stadium Exxon are sites that may have contamination that potentially lie within the proposed alignments and may affect trail construction.

Analytical results of groundwater and soil sampling events indicated that contaminants at the Poplar Point Nursery, Kenilworth Park Landfill, and the Barney Circle Landfill sites have stabilized and should represent minimal contamination threats for trail construction and users.
Information from a file review of the PEPCO Benning Generating Station indicates that chemicals used and stored onsite as well as above ground and underground storage tanks are outside the area of analysis for contamination. Therefore no impacts from contamination are expected to occur as a result of the construction of the trail in this area.

Some construction impacts can be minimized by the avoidance of areas of known and/or suspected contamination during the design of the drainage and lighting improvements. A Phase II investigation may be performed to verify the type and extent of contamination present. Where drainage and lighting improvements cannot be avoided in the areas of concern, technical special provisions may be included in the plans to require that the construction activities performed in these areas be performed by a contamination contractor.

4.13 PERMITTING

4.13.1 Habitats

The State of Maryland established a Forest Conservation Act (FCA) in 1991 to provide protection for the State’s trees and forests. The FCA requires the identification of forest stands, protection of high priority stands in sensitive areas, and protection of large (specimen) trees. However, because the entire Maryland portion of the trail would be within Maryland’s Chesapeake Bay Critical Area, this portion of the trail would not be subject to the FCA but would have to adhere to the forest preservation requirements of the state’s Critical Area Law and Criteria. Mitigation in the form of reforestation or afforestation is required for unavoidable impacts to forest stands. Mitigation for any forest or vegetation cleared for construction of the trail would be a ratio of: 1:1 for clearing up to 20% of the parcel; 1.5:1 for clearing up to 30%; and 3:1 for clearing in excess of 30% of the parcel.

4.13.2 Wetlands and Waterways

Based on the impact analysis presented in Section 4.10, Wetlands and Waterways, construction of the proposed ARW would require approval from the USACE and MDE (for those portions in Maryland) for impacts to wetlands and waterways. This approval would be in the form of a permit authorizing the unavoidable impacts from the project. USACE and MDE may require mitigation for these impacts. This mitigation would likely be through restoration of degraded wetlands based on NPS’ sequence of preferred mitigation. NPS would coordinate with USACE and MDE to select an appropriate degraded wetland site at which the mitigation would be performed. The amount of mitigation would be detailed in the permit but would likely not exceed a 3:1 mitigation ratio. None of the alternatives would require more than 1.0 acre of wetland mitigation.

A request would be submitted to the Baltimore District of the USACE to conduct a Jurisdictional Determination (JD) to verify wetland and waterway boundaries within the ARW study area. Once a field visit with USACE is conducted and the wetland survey approved by the USACE, the permitting process would begin.
For most wetland impacts, NPS requires a Statement of Findings (SOF) to be submitted with an EA as well as mitigation for impacts. However, certain projects including “foot/bike trail or boardwalks, including signs, the primary purpose of which are public education, interpretation, or enjoyment of wetland resources” are exempted from the SOF and mitigation requirements (NPS, 2002).

Lower Beaverdam Creek may be considered by the US Coast Guard (USCG) to be "navigable waters". This determination would occur after formal review by the USCG District having regional jurisdiction. NPS would initiate this process by sending a letter of inquiry and accompanying information to the Commander of the Fifth Coast Guard District. The USCG would then make an official determination. If the creek were determined to be "navigable waters," NPS would submit a Bridge Permit Application to the Coast Guard to obtain approval for the portion of the boardwalk crossing Lower Beaverdam Creek.

4.13.3 Water Quality

For water quality protection during construction, EPA administers and issues the NPDES permit for stormwater discharge from construction sites. As part of this permit a SWPPP would be developed that details BMPs to minimize and control the effects of erosion during construction activities.

Additional water quality permits would be required from Department of Health, Watershed Protection Division for any stormwater discharge associated with the completed trail project. Stormwater discharge quantities and quality would be dictated by Department of Health guidelines.

4.14 CUMULATIVE EFFECTS

A cumulative effects analysis was conducted to evaluate secondary impacts and cumulative effects on the environment which may result from the ARW project and other past, present, or reasonably foreseeable future actions related to the project. Guidance for this action was obtained from NPS’ 2001 guidelines, Director’s Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-making, and the Council of Environmental Quality’s 1997 guidelines, Considering Cumulative Effects Under the National Environmental Policy Act. Using this guidance, NPS conducted the analysis using the following steps.

4.14.1 Scoping

At a June 2, 2004 ARW scoping meeting agency representatives indicated wetland, floodplain, and water quality issues were of concern. On the basis of these concerns, NPS identified that the most appropriate geographic boundary for this cumulative effects analysis is the watershed of the Anacostia River. The basis for this decision is recognition that all potential stresses associated with the interrelated wetlands, waterways, and floodplains are reflected at the watershed level. It was determined to use watershed data as a basis for evaluating cumulative effect because the watershed boundary would encompass all of the areas vulnerable to cumulative effects. A
temporal boundary of 2025 was identified. Many recent, District planning documents, including the Anacostia Waterfront Initiative (AWI) Plan, guide development in the Anacostia River area. These plans forecast growth and development for a 20-25 year time frame.

4.14.2 Resource Characterization

The 173-square mile Anacostia River watershed spans Maryland’s Montgomery and Prince George’s counties and the District. The upper portion of the watershed is relatively free-flowing and converges in Bladensburg where the tidal river begins and flows through the District for just over 8 miles. Generally, land use in the watershed is highly urbanized, with the most intense development in the portion of the watershed that lies within the District (approximately 17 percent of the watershed). Originally forested, water quality in Anacostia began to degrade with early European settlement when land uses were converted to agriculture. Without the forest to control the quantity and quality of stormwater, the Anacostia River became filled with silt. In spite of dredging and other strategies, the broad and deep watered Anacostia was transformed into a narrow channel surrounded by low lying wetlands. After the turn of the 19th Century, these wetlands were filled to form Anacostia Park, a key element of the McMillan Plan for the city at that time. In addition to having dramatically altered drainage patterns, the District and Prince George’s County became urbanized in a period when stormwater and raw sewage were routinely routed to waterways without treatment. Since the passing of the Clean Water Act, the local jurisdictions have worked to correct that situation. However, the Anacostia River remains highly polluted; indicators of aquatic health show that the watershed does not meet clean water or natural resources goals (refer to Section 3.5 for a discussion of water quality in the Anacostia River). Urbanization has also resulted in impervious areas that approach 50 percent of the watershed land cover. Studies have shown that when impervious surface levels are above 25 percent, stream quality degrades appreciably. In most cases, habitat structures needed to support fish and aquatic insects are eliminated, water quality falls to poor levels, and biodiversity is reduced such that only pollution-tolerant species can exist. Watersheds, such as the Anacostia Watershed, that in this category are considered highly impacted and not vulnerable to future development.

4.14.3 Cumulative Effects

NPS considered whether the proposed ARW would trigger connected projects and determined that there would be little potential for the project to induce development outside of the Park. In addition, construction of a trail would not require construction of supporting facilities such as additional parking lots. Future activities in the watershed include the projects listed in AWI plan, as well as planned park improvements such as repairing internal park roads. However, most of these projects would redevelop existing developed areas and would include modern environmental preservation strategies such as:

- Riparian buffers along portions of the river’s shore
- Managed meadows along portions of the shore

---

Woodland buffers along the highway
Naturalized, or bio-engineered, shorelines
New wetlands
Restored tributary streams
Green development practices
Environmentally sensitive landscaping

Analysis of direct effects indicated that the proposed ARW would cause direct impacts to wetlands, water quality, and floodplains.

- Wetlands – the ARW would impact less than half an acre of wetland. These impacts would be mitigated so no loss of wetland functions and values would occur in the watershed. Wetland impacts would be mitigated during the permitting process and by adhering to existing NPS directives.
- Water quality – the Action Alternatives would increase the amount of impervious area by approximately 14 acres. However, this increase would be insignificant in a watershed that approaches 50 percent impervious surfaces. Water quality impacts would be offset by a required stormwater management plan.
- Floodplains – The proposed trail and associated structures would perform hydraulically in a manner equal to or greater than the existing structures and roadways, and backwater surface elevations are not expected to increase. As a result, there would be no significant adverse impacts on natural and beneficial floodplain values.

Based on the level of direct impacts, in the overall context of the highly degraded watershed and future opportunities for mitigation, the potential for cumulative effects is insignificant.

4.15 SUMMARY OF IMPACTS

Table 4.5 provides a summary of the impacts resulting from each alternative for each design section. Table 4.6 compares the effectiveness of the alternatives in meeting the needs and objectives of the project.

No or negligible impacts are expected for air quality, agricultural lands, Indian Trust resources, environmental justice, socio-economic environment, community services, park operations, noise, and rare, threatened or endangered species under any of the alternatives. For all environmental parameters analyzed the No-Action Alternative would result in no impacts. Under all build alternatives, positive impacts would occur with respect to neighborhoods, visitor experience, and visual/aesthetic quality of the park.

There are a minor effects associated with impacts to master plans, wildlife and habitat, wetlands, floodplains, archaeological sites, wildlife and habitat, and contaminated sites under all build alternatives. Moderate impacts would also be associated with parks and recreational facilities and water quality under all build alternatives.
Standard precautions would be implemented during construction, including monitoring by qualified professionals as necessary, to avoid impacts relative to these issues. All build alternatives would directly impact wetlands as detailed in Tables 4.2 through 4.4. A conceptual mitigation plan will be developed and implemented in accordance to NPS procedures.

The No-Action alternatives for each of the Design Sections do not meet any of the needs or objectives of the project. All of the Action alternatives meet the basic needs of the proposed project, where applicable.
<table>
<thead>
<tr>
<th>ALTERNATIVES</th>
<th>Neighborhoods</th>
<th>Parks and Recreational Facilities</th>
<th>Visitor Use and Experience</th>
<th>Area Planning Documents</th>
<th>Archaeological and Historical Sites</th>
<th>Visual and Aesthetics</th>
<th>Habitat and Wildlife</th>
<th>Rare, Threatened and Endangered Species</th>
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\( +/ - = \text{Positive(Benefits)/Negative(Adverse) Impacts} \)
### Table 4-6 Needs and Objectives Matrix

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<th>Needs</th>
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<th>Section 3</th>
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<td>Pedestrian/Bicycle access to the park</td>
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<td>1A 1B</td>
<td>No-Action</td>
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<td>Connection to METRO stations</td>
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<td>No-Action</td>
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<td>Eliminate need to cross roads within the park</td>
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<td>1A 1B</td>
<td>No-Action</td>
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<td>Improve Safety/Suitability for Bicycling and Walking</td>
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<td>Continuous Trail Between Major Park Areas</td>
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<tr>
<td>Opportunities for Extended Cycling and Walking</td>
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<table>
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<th>Objectives</th>
<th>Section 1</th>
<th>Section 2</th>
<th>Section 3</th>
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<td>Provide Access to the Riverfront</td>
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CHAPTER 5: PREFERRED ALTERNATIVE

5.1 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

Based on the issues discussed in the Purpose and Need (Chapter 1) the alternative ARW alignments were confined to NPS park land and DDOT ROW and routed primarily through Anacostia Park. With agency support, the ARW study team identified several project objectives that led to the rejection of some alternatives and guided the selection of others:

- Access to the Anacostia River and Anacostia Park;
- Desired viewsheds from the trail;
- Physical connectivity to local communities, transportation infrastructure, and local and regional trails;
- Proximity to the river; and
- Providing improved access to important park features, including recreational facilities and areas of natural and cultural interest.

Using these criteria, several alternative trail alignments were considered but rejected. Three refined alternatives that met the needs and objectives and that were significantly different from each other have been identified. Unless one of these alternatives provided distinct advantages over another relative to the stated objectives, the Preferred Alternative was the one that minimized impacts across the range of all environmental impacts analyzed. The following is a brief comparison of all alternatives within each design section. The discussion will explain the rationale behind the selection of the Preferred Alternative for each Design Section.

5.1.1 Design Section 1

The only location in Design Section 1 where the alternatives differ is in the area between 11th Street and Pennsylvania Avenue. In Alternative 1A, the Preferred Alternative, Anacostia Drive would be shifted to the east and the trail would hold the existing western alignment of Anacostia Drive. In Alternative 1B, the trail is routed through the narrow strip of land between Anacostia Drive and the river and elevated boardwalk sections are used to minimize impacts to the bank slope. The potential for negative impacts as a result of routing the trail so close to the stream bank was the factor that most heavily influenced the choice of the Preferred Alternative in this area.

5.1.2 Design Section 2

The primary difference between Alternatives 2A and 2B for Design Section 2 is in the area along Water Street. Under Alternative 2A, the trail alignment would move away from Water Street and closely parallel the existing riparian vegetation in the areas between Eastern Power Boat Club and District Yacht Club and between the District Yacht Club and the terminus of Water Street at M Street. Under Alternative 2B, the shared use trail would remain adjacent to Water Street until it joins M Street.
For Design Section 2, Alternative 2A was selected as the Preferred Alternative. The rationale behind this request was to take advantage of the open green space between Water Street and the river, bringing trail users to the waterfront, thereby achieving an identified ARW objective.

5.1.3 Design Section 3

Alternative 3A was selected as the Preferred Alternative for Design Section 3. This selection was based on the difference in alignment from Benning Road to Kenilworth Terrace and the amount of wetlands impacted under each alternative in the area from Anacostia Avenue to Bladensburg Trail. Alternative 3A routes the trail around the north side of the PEPCO Plant and the DCDPW Trash Transfer Station, and avoid using Benning Road to connect to Anacostia Avenue. This is preferred due to the safety concerns associated with Benning Road, which is marginally suitable for non-vehicular traffic. Also, Alternative 3B had the greatest impact to wetlands.

5.2 MITIGATION AND MONITORING REQUIREMENTS

Mitigation for unavoidable wetland impacts will be determined through coordination with the regulatory agencies. Potential wetland mitigation may include restoration on park land or credits from an approved wetland mitigation bank.

Additionally, as a result of more than two centuries of development that did not incorporate environmental controls, the Anacostia River has become seriously degraded. To correct the problem, regulatory agencies now require environmentally sensitive and sustainable design strategies, also known as low-impact development, to be incorporated in all new and redevelopment projects in the watershed. NPS is committed to conservation, and as a major land steward in the watershed, development of the ARW would allow NPS to lead by example in the use of these techniques.

Stormwater management areas will be developed in accordance with regulatory requirements; therefore, water quality impacts will be insignificant and mitigation will not be required.
CHAPTER 6: CONSULTATION AND COORDINATION

6.1 HISTORY OF PUBLIC INVOLVEMENT

In March 2000, 20 Federal and District agencies having jurisdiction and/or interest along the Anacostia River formulated and signed the AWI Memorandum of Understanding. The District’s Office of Planning (DCOP) is the coordinating agency for the AWI, but the NPS, the US Army Corps of Engineers (USACE), the District’s Department of Parks and Recreation, and the DDOT play significant roles in the planning required to realize many of the AWI’s objectives. A complete list of the parties involved in the AWI Memorandum of Understanding is given in Appendix 1. A brief listing of the extensive AWI public involvement process through Fall 2003 is given in Appendix 7.

Coordination specific to the ARW included an initial Agency Scoping period and subsequent Scoping Meeting. Agencies that participated include the NPS (National Capital Parks - East), the DC Sports and Entertainment Authority (DCSEA), DDOT, DC Department of Environmental Health, DC Department of Public Works, DCOP, DC Department of Parks and Recreation, National Capital Planning Commission, Washington Metro Area Transit Authority, Prince George’s County [Maryland], Maryland Department of the Environment, Maryland Department of Natural Resources, and the Maryland Department of Transportation.

Additionally, as this project is one of the many addressed in the 2003 Federal Workplan for the Anacostia River Watershed, multiple agencies have reviewed it in the context of ecosystem management and restoration efforts on federal lands within the Anacostia River watershed. Participating groups and agencies include the USACE; EPA; Chesapeake Bay Program; the Federal Agencies Committee (FAC) of the Chesapeake Bay Program, and the Anacostia Watershed Restoration Committee (AWRC).

6.1.1 Public Outreach

The target of the outreach effort is the leadership in Ward 7 and parts of Ward 6. Specifically, Advisory Neighborhood Commissioner commissioners and commissioners-elect in ANC 6B, 7A, 7B, 7C, and 7D; presidents and presidents-elect of civic associations and resident councils; elementary, middle and high school principals; clergy; key businesses; social service agencies, individuals who have expressed specific interest in the project and city staff with responsibilities for neighborhood-level planning.

A public hearing to elicit public comment on the Environmental Assessment is scheduled for January 6, 2005. The public hearing will be held from 7:00 to 8:30 p.m. at the Marshall Heights Community Development Corporation offices at 3939 Benning Road NE in Washington, DC. MHCDC is located on the east side of the Anacostia River near the geographic center of the study area. The public hearing will be preceded by an open house.

On December 13, 2004 approximately 175 individuals received an email invitation to attend the public hearing. On December 17, 2004 a subsequent email that included information about the
availability of the environmental report was distributed. The email requests that individuals who are interested in attending to RSVP to the invitation. December 20-22 telephone calls will be placed to all individuals for whom there are phone numbers available, with a reminder of the public hearing. In late-December, a signed invitation from the District Department of Transportation will be made to the entire mailing list. Following the distribution of the letter another round of telephone calls will be placed to all individuals who have received invitations to the public hearing. January 3-6 a final round of reminder calls will be made to those individuals who have accepted the invitation.

The environmental document is posted for public review on the District Department of Transportation (http://ddot.dc.gov under Transportation Studies) and National Park Service (www.nps.gov/anac) websites. The document is also posted on the official project website, www.arwstudy.com. The project website includes the document as well as the capacity to accept public comments. The public review period will be open for comments for 30 days and comments will be accepted until January 20, 2005. The comments will be summarized and reviewed by the study team for consideration in preparation for the final environmental document.

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CHAPTER 7: REFERENCES

7.1 BIBLIOGRAPHY


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### 7.2 ACRONYMS AND ABBREVIATIONS

<table>
<thead>
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<th>Acronym</th>
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<tr>
<td>AASHTO</td>
<td>American Association of State Highway and Transportation Officials</td>
</tr>
<tr>
<td>APE</td>
<td>Area of Potential Effects</td>
</tr>
<tr>
<td>ARW</td>
<td>Anacostia Riverwalk Trail</td>
</tr>
<tr>
<td>AST</td>
<td>Aboveground storage tank</td>
</tr>
<tr>
<td>AWI</td>
<td>Anacostia Waterfront Initiative</td>
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<tr>
<td>AWRC</td>
<td>Anacostia Watershed Restoration Commission</td>
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<tr>
<td>BID</td>
<td>Business Improvement District</td>
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<tr>
<td>BMP</td>
<td>Best management practices</td>
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<tr>
<td>BOD</td>
<td>Biological oxygen demand</td>
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<td>CAA</td>
<td>Federal Clean Air Act</td>
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<td>Central employment area</td>
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<td>Council on Environmental Quality</td>
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<td>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation, and Liability Act</td>
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<td>DCDPW</td>
<td>District of Columbia Department of Public Works</td>
</tr>
<tr>
<td>DCHPO</td>
<td>District of Columbia Historic Preservation Office</td>
</tr>
<tr>
<td>DCOP</td>
<td>District of Columbia Office of Planning</td>
</tr>
<tr>
<td>DCSEA</td>
<td>District of Columbia Sports and Entertainment Authority</td>
</tr>
<tr>
<td>DDE</td>
<td>Dichlorodiphenyldichloroethylene</td>
</tr>
<tr>
<td>DDOT</td>
<td>District of Columbia Department of Transportation</td>
</tr>
<tr>
<td>DDT</td>
<td>Dichlorodiphenyltrichloroethylene</td>
</tr>
<tr>
<td>District</td>
<td>Washington, District of Columbia</td>
</tr>
<tr>
<td>DNAPL</td>
<td>Dense non-aqueous phase liquid</td>
</tr>
<tr>
<td>DO</td>
<td>Director’s Order</td>
</tr>
<tr>
<td>EA</td>
<td>Environmental Assessment</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Definition</td>
</tr>
<tr>
<td>--------------</td>
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</tr>
<tr>
<td>EO</td>
<td>Executive order</td>
</tr>
<tr>
<td>EPA</td>
<td>US Environmental Protection Agency</td>
</tr>
<tr>
<td>ESF</td>
<td>Environmental Screening Form</td>
</tr>
<tr>
<td>FAC</td>
<td>Federal Agencies Commission</td>
</tr>
<tr>
<td>FCA</td>
<td>Forest Conservation Act</td>
</tr>
<tr>
<td>FEMA</td>
<td>Federal Emergency Management System</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographic Information Systems</td>
</tr>
<tr>
<td>HUB-Zone</td>
<td>Historically underutilized business zone</td>
</tr>
<tr>
<td>ID</td>
<td>Identification</td>
</tr>
<tr>
<td>JD</td>
<td>Jurisdictional determination</td>
</tr>
<tr>
<td>LID</td>
<td>Low Impact Development</td>
</tr>
<tr>
<td>LOD</td>
<td>Limits of disturbance</td>
</tr>
<tr>
<td>MHT</td>
<td>Maryland Historic Trust</td>
</tr>
<tr>
<td>MD</td>
<td>Maryland</td>
</tr>
<tr>
<td>MDE</td>
<td>Maryland Department of the Environment</td>
</tr>
<tr>
<td>MDNR</td>
<td>Maryland Department of Natural Resources</td>
</tr>
<tr>
<td>MHCDC</td>
<td>Marshall Heights Community Development Corporation</td>
</tr>
<tr>
<td>MOU</td>
<td>Memorandum of Understanding</td>
</tr>
<tr>
<td>MWCOG</td>
<td>Metropolitan Washington Council of Governments</td>
</tr>
<tr>
<td>NAAQS</td>
<td>National Ambient Air Quality Standards</td>
</tr>
<tr>
<td>NCPC</td>
<td>National Capital Planning Commission</td>
</tr>
<tr>
<td>NCP-East</td>
<td>National Capital Parks East</td>
</tr>
<tr>
<td>NEPA</td>
<td>National Environmental Policy Act of 1969</td>
</tr>
<tr>
<td>NFIP</td>
<td>National Flood Insurance Program</td>
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<tr>
<td>NPDES</td>
<td>National Pollution Discharge Elimination System</td>
</tr>
<tr>
<td>NPS</td>
<td>National Park Service</td>
</tr>
<tr>
<td>NWI</td>
<td>National Wetlands Inventory</td>
</tr>
<tr>
<td>PAHs</td>
<td>Polycyclic aromatic hydrocarbons</td>
</tr>
<tr>
<td>Park</td>
<td>Anacostia Park</td>
</tr>
<tr>
<td>PCBs</td>
<td>Polychlorinated biphenyls</td>
</tr>
<tr>
<td>PEPCO</td>
<td>Potomac Electric Power Company</td>
</tr>
<tr>
<td>Riverwalk</td>
<td>Anacostia Riverwalk</td>
</tr>
<tr>
<td>RFK</td>
<td>Robert F. Kennedy Memorial Stadium</td>
</tr>
<tr>
<td>ROW</td>
<td>Right of way</td>
</tr>
<tr>
<td>RTE</td>
<td>Rare, threatened or endangered</td>
</tr>
<tr>
<td>SES</td>
<td>Straughan Environmental Services, Inc.</td>
</tr>
<tr>
<td>SNAP</td>
<td>Strategic Neighborhood Action plan</td>
</tr>
<tr>
<td>SWMPP</td>
<td>Stormwater pollution prevention plan</td>
</tr>
<tr>
<td>TMDL</td>
<td>Total Maximum Daily Load</td>
</tr>
<tr>
<td>UST</td>
<td>Underground storage tank</td>
</tr>
<tr>
<td>USDA</td>
<td>US Department of Agriculture</td>
</tr>
<tr>
<td>USFWS</td>
<td>US Fish and Wildlife Service</td>
</tr>
<tr>
<td>USACE</td>
<td>US Army Corps of Engineers</td>
</tr>
<tr>
<td>VOA</td>
<td>Volatile Organic Aromatics</td>
</tr>
<tr>
<td>WASA</td>
<td>Washington DC Water and Sewer Authority</td>
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</tbody>
</table>