NATIONAL PARK SERVICE
U.S. DEPARTMENT OF THE INTERIOR

National Capital Parks – East
Washington, D.C.

Environmental Assessment

Anacostia Riverwalk Trail Section 3 Realignment

Anacostia Park

December 2011

PROJECT SUMMARY

Introduction

The National Park Service (NPS), in collaboration with the District of Columbia Department of Transportation, proposes to construct Section 3 of the Anacostia Riverwalk Trail through Anacostia Park. This section of trail is a realignment of a section previously identified in 2004 planning study. It is located east of the Anacostia River in the northeast section of Washington, D.C., and extends into Maryland. As part of this proposal, pedestrian bridge that crosses the Anacostia River would be constructed that connects the proposed new trail alignment to U.S. National Arboretum. This section of trail would serve to link other sections of the Anacostia Riverwalk Trail, as well as other District trail tie-ins.

Purpose of and Need for the Action

The purpose of the project is to realign Section 3 of the Anacostia Riverwalk Trail, which had previously been identified and analyzed in a 2004 environmental assessment that covered three sections of the trail. The realignment of Section 3 of the Anacostia Riverwalk Trail is needed based on additional site investigations and reviews that were conducted after the completion of the 2004 *Anacostia Riverwalk Trail Environmental Assessment*. A field assessment showed that the previously identified alignment had security and construction feasibility issues that had not been known or anticipated. The proposed realignment would avoid these issues and would also provide a more natural visitor experience for users. The proposed realignment would also provide better connectivity for visitors, including a proposed pedestrian bridge across the Anacostia River, connecting the park with the U.S. Department of Agriculture's National Arboretum.

The impacts of the proposed alternatives were assessed in accordance with the National Environmental Policy Act, the National Park Service Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision Making*, and the National Historic Preservation Act. Several impact topics were dismissed from further analysis because the proposed action would result in no impacts or negligible to moderate and/or short-term impacts on those resources. No major impacts are anticipated as a result of this project.

Note to Reviewers and Respondents:

If anyone wishes to comment on this EA, please mail the comments directly or submit them electronically to NPS. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we would be able to do so.

Mailed comments can be sent to:

Superintendent, Anacostia Park, National Capital Parks - East
Realignment of Section 3 – Anacostia Riverwalk Trail Environmental Assessment
1900 Anacostia Drive S.E.
Washington, DC 20020

Comments can also be submitted on-line:

In accordance NEPA, Section 10 of Planning, Environment, and Public Comment (PEPC) Public comments can be submitted on-line by following the appropriate links at:
http://parkplanning.nps.gov/NACE.

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CHAPTER 1: PURPOSE AND NEED

INTRODUCTION

The National Park Service (NPS), in collaboration with the District of Columbia Department of Transportation (DDOT), proposes to construct Section 3 of the Anacostia Riverwalk (ARW) Trail through Anacostia Park. Although portions of the ARW Trail are on NPS land, the DDOT would design, construct, and maintain the trail. Anacostia Park is one of 13 parks managed within the National Capital Parks – East administrative unit. This section of trail is a realignment of a section previously identified in 2004, which has since been realigned as the result of additional site investigations to avoid environmentally sensitive areas. The revised alignment of this trail section is east of the Anacostia River in the northeast section of Washington, D.C. (the District), and extends into Maryland (figure 1-1; see also figure 2-5 for detail). This section would serve to link other sections of the ARW Trail, as well as other District tie-ins.

This environmental assessment (EA) evaluates two alternatives, alternative A: no action, and alternative B: realignment of Section 3 of the Anacostia Riverwalk Trail (the NPS-preferred alternative). The no action alternative would not construct a new trail or make any enhancements to existing bicycle and pedestrian facilities. Alternative B would construct a multi-use trail that would generally parallel the Anacostia River and would include a pedestrian bridge across the Anacostia River to provide access to the National Arboretum.

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) and implementing regulations, 40 Code of Federal Regulations (CFR) 1500–1508, and NPS Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision Making* and Handbook (NPS 2001). Compliance with Section 106 of the National Historic Preservation Act of 1966 (NHPA) has occurred in conjunction with the NEPA process and is documented in this EA.

PURPOSE OF AND NEED FOR ACTION

The purpose of the project is to realign Section 3 of the ARW Trail to provide a safe and convenient means for park visitors and bicycle commuters to access the Anacostia River waterfront and enjoy Anacostia Park (the park). The realignment of Section 3 of the ARW Trail, which had previously been identified and analyzed in a 2004 EA that covered all three sections of the trail (NPS 2004a), is needed because currently visitors lack much access to the river at this location and those walking, hiking, or biking in this area are required to use the local street network. The realignment is also needed to provide improved connectivity for visitors and neighborhood residents to the western bank of the Anacostia River and direct access to the National Arboretum, which would be provided by a proposed pedestrian bridge.

The proposed realignment avoids use of the existing road network in order to provide visitors a path closer to the waterfront and provide a more natural visitor experience. In addition, some segments of the ARW Trail would use portions of the Kenilworth Park Landfill located in the park as part of the Section 3 realignment. NPS is currently completing the feasibility study to evaluate potential remedial alternatives for the landfill. A second phase of the trail realignment, which would continue along the waterfront, can now potentially be located on top of the south landfill and needs to be considered and analyzed along with the proposed realignment.

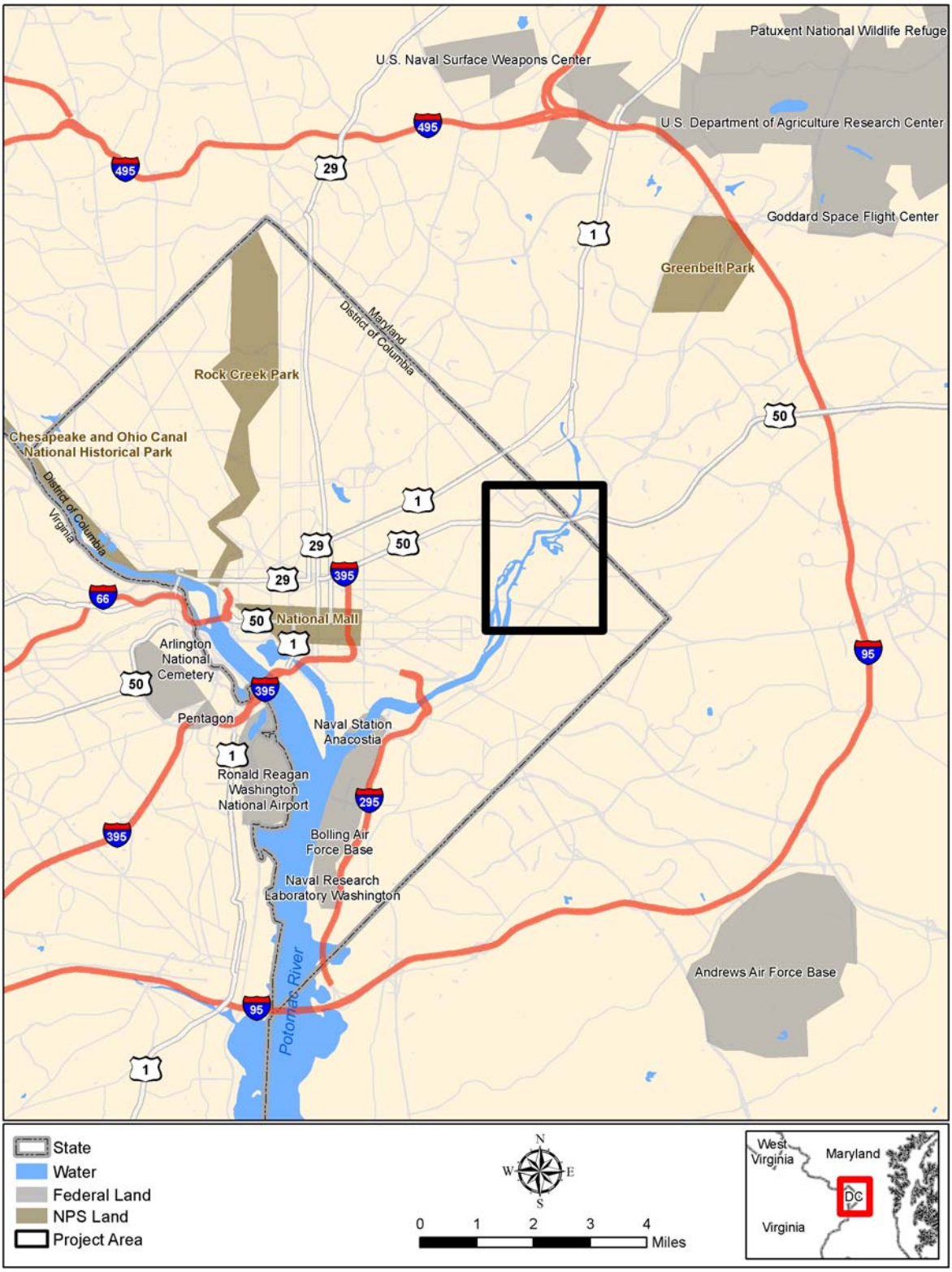

FIGURE 1-1. VICINITY OF THE PROJECT AREA

PROJECT BACKGROUND

Anacostia Park is one of the District's largest and most important recreational areas and receives heavy, year-round use, attracting visitors from around the region and the nation. While Anacostia Park's 1,200 acres offer passive and active recreation, the park does not offer extended bicycling and walking opportunities. In addition, the park itself is not easily accessible to the surrounding communities and visitors.

In 2004, the NPS proposed to construct a trail system that would provide bicyclists and pedestrians with

- nearly continuous access to the east side of the Anacostia River from South Capitol Street to the Bladensburg Trail in Maryland, a distance of seven miles
- continuous access to the west side of the Anacostia River from 11th Street, NE, to Benning Road, a distance of three miles
- safe and convenient access points to enter the park from the surrounding neighborhoods.

The NPS completed an EA for this proposed trail system that analyzed all three sections of the ARW Trail (NPS 2004a). Since 2004, the proposed trails for sections 1 and 2 have moved forward. Section 2 is complete and construction of Section 1 is ongoing. The alignment of Section 3 of the trail has since been revised. The proposed realignment is the result of an effort to provide a better visitor experience throughout the park by routing the trail through park land and closer to the river instead of using the existing road network abutting the adjacent neighborhoods, to avoid impacts to a section of wetlands and forested habitat, and to avoid security issues in the greenhouse complex that have since been identified by the park. In addition, to have another trail option that runs close to the river, the park wishes to include sections of the ARW Trail that would cross the landfill that is currently being evaluated for potential remedial alternatives consistent with the Comprehensive Environmental Response, Compensation, and Liabilities Act (CERCLA). Phase II would also include a pedestrian bridge across the Anacostia River, linking the park with the National Arboretum.

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, Anacostia, Barry Farms, Twining, Greenway, Eastland Gardens, and Mayfair, do not have easy pedestrian or bicycle access to the park even though they may live only a few hundred feet from the park boundary. In many areas, limited-access highways and bridges isolate the adjoining neighborhoods from the park. 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 increasing public amenities, open space, and youth development opportunities.

All three sections of the ARW Trail are part of the Anacostia Waterfront Initiative (AWI), which is the framework plan for revitalizing the Anacostia waterfront areas. The AWI is the product of a commitment made by 20 federal and local agencies to cooperatively develop a vision for the waterfront. The commitment, formalized in March 2002 with a Memorandum of Understanding, led to three years of planning, public meetings, and public discussion. The resulting AWI proposes a comprehensive 48-mile trail system, including 20 miles of trails along waterfront areas that would provide residents and visitors access to the District's riverfronts. The entire ARW Trail would be a valuable contribution toward realizing the overall AWI plans; however, it also would have independent usefulness because the trail does not depend on the AWI to meet many of the visitor and community needs for such a path.

Visitors who 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 are no signs 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. 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 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 service road that also crosses multiple active CSX Railroad tracks at the CSX Banning Yard. These crossings are at grade and are not equipped with warning signals, and when rail cars are staged on the track, crossing the track is impossible. An isolated pedestrian trail, the River Trail, is located between Kenilworth Aquatic Gardens and the Anacostia River; it is an interpretive trail for the Kenilworth Aquatic Gardens and the Anacostia River wetlands and does not connect to any other trail segment (NPS 2004a).

On a regional level, multiple trails, including the Bladensburg Trail, Potomac Heritage Scenic Trail, Rock Creek Trails, Mount Vernon Trail, Anacostia River Tributary Trails, Anacostia Greenway, Suitland Parkway Trail, Fort Circle Parks Hiker–Biker Trail (a.k.a. Civil War Defenses of Washington), and the Watts Branch Trail surround and approach the park area, but not all connect to the park. 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.

SITE DESCRIPTION

As part of the river gateway to the nation's capital, Anacostia Park is an important recreation area in the District. It is the largest man-made recreational area in the District of Columbia and was created by the filling in of tidal marshland by the U.S. Army Corps of Engineers (USACE) under the auspices of the Reclamation Flats Act (1913–1918). Prior to this, the area had been a tidewater area of small islands, marshes, and swamps. In 1933, an executive order placed the new park under the jurisdiction of the NPS. Since that time, the NPS has been responsible for the park's development and maintenance (NPS n.d.a).

Today, the park is a multi-use recreation area with more than 5 miles of shoreline along each bank of the Anacostia River. Along the western shore, the park extends from the 11th Street bridges to Eastern Avenue; along the eastern shore, it extends from the South Capitol Street Bridge to Eastern Avenue. Of the approximately 1.7 million people who visit the park and its facilities annually, more than 80 percent come from Maryland and Virginia. The park extends along the banks of the Anacostia River above its confluence with the Potomac River to the District/Maryland boundary line and encompasses parcels at Fort McNair, Buzzard Point, and adjacent to the U.S. Coast Guard Building (NPS n.d.a).

The project area is in the Kenilworth section of Anacostia Park, which includes the Kenilworth Aquatic Gardens. The project area consists of recreation fields, marshes, magnolia bogs, and landscaped areas. The project area also contains large, open, grassy areas, which include a capped landfill that is undergoing CERCLA investigations for future remediation actions.

PURPOSE AND SIGNIFICANCE OF THE PARK

PURPOSE

The Anacostia Park purpose statement was developed from the establishing legislation for Anacostia Park. It states why the park was incorporated into the national park system and serves as a guide for ensuring that the recommendations of the general management plan (GMP) are in accordance with the original intention for creating the park. The following purpose statement represents the NPS interpretation of the establishing legislation:

> Anacostia Park was created when the banks of the Anacostia River were reclaimed for park purposes. It is part of the comprehensive, systematic, and continuous development of the park system of the national capital, and provides waterfront

recreation and access for public enjoyment. Within this system, the park provides opportunities for a variety of recreational activities that are compatible with the resources of the Anacostia River. Legislation covering Anacostia Park gives specific direction to preventing pollution in the Potomac and Anacostia Rivers and to preserving forests and natural scenery in and about Washington. The park protects natural and nationally significant historic resources, promoting and regulating the use of the area in such a manner as will leave them unimpaired for the enjoyment of future generations. The park provides opportunities for the understanding of these resources and values to the American people.

SIGNIFICANCE

Park significance statements define the resources and values that are most important to Anacostia Park. The statements provide the basis for placing greater management emphasis on those resources and values that contribute directly to the park's purpose. The following significance statements capture the essence of the park's importance to the national capital's natural and cultural heritage:

- The park is a river gateway to the national capital and an important waterfront component of the city's unique design.
- The park has a variety of recreational opportunities and provides important public waterfront access.
- The park contains naturalized shoreline that provides habitat for native plants and animals and connects with other natural and historic corridors outside city boundaries.
- The park protects one of the few remaining tidal wetlands in the nation's capital and reflects changing attitudes towards wetlands.
- The park provides a variety of educational opportunities regarding the natural and cultural heritage of the Anacostia River; and
- The historic Kenilworth Aquatic Gardens is the only site in the NPS dedicated to the propagation and display of aquatic plants.

RELATIONSHIP TO LAWS, EXECUTIVE ORDERS, POLICIES, AND OTHER PLANS

The NPS is governed by laws, regulations, and management plans before, during, and following any management action considered under any NEPA analysis. The following are those that are applicable to the proposed action.

APPLICABLE STATE AND FEDERAL LAWS

National Environmental Policy Act of 1969, As Amended

NEPA was passed by Congress in 1969 and took effect on January 1, 1970. This legislation established this country's environmental policies, including the goal of achieving productive harmony between human beings and the physical environment for present and future generations. It provided the tools to implement these goals by requiring that every federal agency prepare an in-depth study of the impacts of "major federal actions having a significant effect on the environment" and alternatives to those actions and required that each agency make that information an integral part of its decisions. NEPA also requires that agencies make a diligent effort to involve interested members of the public before they make decisions affecting the environment.

NEPA is implemented through regulations of the Council on Environmental Quality (CEQ) (40 CFR 1500–1508). The NPS has in turn adopted procedures to comply with the act and the CEQ regulations, as found in Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision Making* (NPS 2001) and its accompanying handbook.

National Historic Preservation Act of 1966, As Amended through 2000

The NHPA (16 U.S. Code [USC] 470) protects buildings, sites, districts, structures, and objects that have significant scientific, historical, or cultural value. The act establishes affirmative responsibilities of federal agencies to preserve historic and prehistoric resources. Effects on properties that are listed in or eligible for the National Register of Historic Places (National Register) must be taken into account in planning and operations. Any property that may qualify for listing in the National Register must not be inadvertently transferred, sold, demolished, substantially altered, or allowed to deteriorate.

Section 106 of the National Historic Preservation Act

Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. The historic preservation review process mandated by Section 106 is outlined in regulations issued by Advisory Council on Historic Preservation. Revised regulations, "Protection of Historic Properties" (36 CFR 800), became effective January 11, 2001.

Archeological Resources Protection Act

The *Archeological Resources Protection Act* was enacted in 1979. The act prohibits unauthorized excavation on federal and Indian lands, establishes standards for permissible excavation, prescribes civil and criminal penalties, requires agencies to identify archeological sites, and encourages cooperation between federal agencies and private individuals.

National Park Service Organic Act of 1916

By enacting the *National Park Service Organic Act* of 1916 (Organic Act), Congress directed the U.S. Department of the Interior and the NPS to manage units "to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such a manner and by such a means as will leave them unimpaired for the enjoyment of future generations" (16 USC 1). Congress reiterated this mandate in the *Redwood National Park Expansion Act* of 1978 by stating that the NPS must conduct its actions in a manner that will ensure no "derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress" (16 USC 1a-1). Despite these mandates, the Organic Act and its amendments afford the NPS latitude when making resource decisions that balance resource preservation and visitor recreation.

Because conservation remains predominant, the NPS seeks to avoid or to minimize adverse impacts on park resources and values. However, the NPS has discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the purposes of a park (NPS 2006). Whereas some actions and activities may cause impacts, the NPS cannot allow an adverse impact that would constitute impairment of the affected resources and values (NPS 2006). The Organic Act prohibits actions that permanently impair park resources unless a law directly and specifically allows for the acts (16 USC 1a-1). An action constitutes an impairment when its impacts "harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values" (NPS 2006). To determine impairment, the NPS must evaluate "the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts" (NPS 2006).

National Parks Omnibus Management Act of 1998

The *National Parks Omnibus Management Act* (16 USC 5901 et seq.) underscores NEPA and is fundamental to NPS park management decisions. Both acts provide direction for articulating and connecting the ultimate resource management decision to the analysis of impacts, using appropriate technical and scientific information. Both also recognize that such data may not be readily available and provide options for resource impact analysis should this be the case.

The *National Parks Omnibus Management Act* directs the NPS to obtain scientific and technical information for analysis. The NPS handbook for Director's Order 12 states that if "such information cannot be obtained due to excessive cost or technical impossibility, the proposed alternative for decision will be modified to eliminate the action causing the unknown or uncertain impact, or other alternatives will be selected" (NPS 2001).

Redwood National Park Expansion Act of 1978, As Amended

All national park system units are to be managed and protected as parks, whether established as a recreation area, historic site, or any other designation. This act states that the NPS must conduct its actions in a manner that will ensure no "derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress."

EXECUTIVE ORDERS AND DIRECTOR'S ORDERS

Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision Making and Handbook

NPS Director's Order 12 and its accompanying handbook (NPS 2001) lay the groundwork for how the NPS complies with NEPA. Director's Order 12 and the handbook set forth a planning process for incorporating scientific and technical information and establishing a solid administrative record for NPS projects.

NPS Director's Order 12 requires that impacts on park resources be analyzed in terms of their context, duration, and intensity. It is crucial for the public and decision makers to understand the implications of those impacts in the short and long-term, cumulatively, and in context, based on understanding and interpretation by resource professionals and specialists. Director's Order 12 also requires that an analysis of impairment of park resources and values be made as part of the NEPA document.

Natural Resource Management Reference Manual 77

The purpose of this document is to provide guidance to park managers for all planned and ongoing natural resource management activities. Managers must follow all federal laws, regulations, and policies. This document provides the guidance for park management to design, implement, and evaluate a comprehensive natural resource management program (NPS 2004b).

Director's Order 77-1: Wetland Protection

As part of the *Natural Resource Management Reference Manual 77*, Director's Order 77-1 (NPS 2008a) was developed by the NPS to establish NPS policies, requirements, and standards for implementing *Executive Order 11990: Protection of Wetlands*. Director's Order 77-1 established the NPS adoption of a "no net loss of wetlands" goal as well as the adoption of the Cowardin et al. classification system for defining, classifying, and inventorying wetlands.

Director's Order 77-2: Floodplain Protection

In compliance with *Executive Order 11988*: *Floodplain Management*, the NPS developed this Director's Order to provide guidance for all NPS proposed actions that could adversely affect the natural resources and functions of floodplains (NPS 2003a). Director's Order 77-2 provides guidance to reduce the risk of flood loss; minimize the impact of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains.

Director's Order 28: *Cultural Resource Management*

Director's Order 28 (NPS 1998a) sets forth the guidelines for the management of cultural resources, including cultural landscapes, archeological resources, historic and prehistoric structures, museum

objects, and ethnographic resources. This order calls for the NPS to protect and manage cultural resources in its custody through effective research, planning, and stewardship in accordance with the policies and principles contained in the NPS *Management Policies 2006* (NPS 2006).

Executive Order 11990: Protection of Wetlands

This executive order directs the NPS to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.

Executive Order 11988: Floodplain Management

This executive order directs federal agencies to avoid, to the extent possible, long- and short-term adverse impacts associated with occupying and modifying floodplains through development, where a practicable alternative exists.

LOCAL PLANS

Anacostia Waterfront Initiative

The AWI is a multi-agency effort to revitalize the areas around the waterfront of the Anacostia River by creating a hub of economic development and bringing thousands of new jobs, residents, and visitors to the area. The AWI envisions environmentally responsible development; unification of the diverse waterfront areas into commercial, residential, recreational, and open-space uses; development and conservation of park areas; and greater access to the waterfront, communities, and business corridors (DDOT n.d.).

The DDOT is developing plans and designs to achieve the goals of the AWI. The DDOT vision is to create a transportation system in the AWI area that

- is environmentally sustainable
- moves people via transit, light rail, bicycle and pedestrian trails, and automobiles
- does not work as a barrier to the communities
- supports and enhances the economic and environmental health of the District
- enhances waterfront access and use
- strengthens neighborhood character and increases access between communities
- integrates the area with the monumental core and the rest of the District
- emphasizes the history and uniqueness of the Anacostia waterfront area

SCOPING PROCESS AND PUBLIC PARTICIPATION

NEPA regulations require an "early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action." To determine the scope of issues to be analyzed in depth in this plan, meetings were conducted with park staff and the public.

In addition to internal and agency scoping, public scoping for this EA began February 3, 2011, and concluded March 4, 2011. Notice of the public scoping period was posted on the NPS Planning, Environment, and Public Comment website (PEPC), and the NPS sent email notices of the meeting to individuals and organizations.

During the 30-day public comment period, comments were received from five community members that were in support of the proposed trail alignment and pedestrian bridge. One commenter had several concerns about security on the bridge and provided suggestions for lighting and emergency call boxes, and also requested the inclusion of a monitored security system.

IMPACT TOPICS ANALYZED IN THIS ENVIRONMENTAL ASSESSMENT

SOILS

Construction of Section 3 of the ARW Trail would result in disturbance and compaction of soils in the area of construction. As a result, this impact topic was carried forward for analysis.

VEGETATION

Actions directly related to the proposed construction of Section 3 of the ARW Trail would require clearing or trimming mixed deciduous forest and associated vegetation. As a result, this impact topic was carried forward for analysis.

WILDLIFE AND WILDLIFE HABITAT

A variety of habitats that support different types of wildlife are present in the study area. Allowing public access to some of these areas and construction could cause disruption or displacement of wildlife species or alter habitat. Therefore, the potential impacts of this increased access are included in the detailed analysis.

WETLANDS

Field investigations in 2009 identified five potentially jurisdictional waters, 14 potentially jurisdictional wetlands, and four nonjurisdictional wetlands in the area of the proposed realignment. Although the proposed realignment would not directly contact any of the wetlands, these wetlands have the potential to be impacted by the proposed action; therefore, impacts to wetlands were included in the detailed analysis. Additionally, the proposed bridge layout would include two footings in the Anacostia River where the mean low water is less than two meters, which qualifies as a wetland under NPS standards.

Additionally, Director's Order 77-1 and Procedural Manual 77-1 require that actions proposed by the NPS that have the potential to have adverse impacts on wetlands must be addressed in an EA. If the preferred alternative in an EA would result in adverse impacts on wetlands, a "Statement of Findings" documenting compliance with this Director's Order and Procedural Manual 77-1 must be completed. Actions that may be exempted from the Statement of Findings requirement are identified in Procedural Manual 77-1 (NPS 2011).

This project is exempted from the statement of findings requirement under Procedural Manual 77-1, because the project would involve a foot/bicycle trail or boardwalk where the primary purpose includes public education, interpretation, or enjoyment of wetland resources and where the total wetland impact from fill placement would be 0.1 acre or less (NPS 2011).

VISITOR USE AND EXPERIENCE

Anacostia Park is the largest component of the National Capital Parks – East park system. More than 1 million people visit this park system each year. The proposed realignment of Section 3 of the ARW Trail is expected to increase use and change the visitor experience in certain areas of the park; therefore, this issue was included in the detailed analysis.

HUMAN HEALTH AND SAFETY

The realignment of Section 3 of the ARW Trail would be constructed on portions of the old capped landfill. While any sections of the ARW Trail that traverse the landfill would be constructed by means that would preclude disturbing the landfill cap, health and safety issues should be reviewed to avoid creating exposure to contaminated soils. Therefore, this impact topic was carried forward for 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 Trail. Construction of Section 3 of the ARW Trail is intended to provide these benefits. Also, there may be short-term impacts on adjoining neighborhoods during construction from noise, dust, or increased traffic; therefore, the topic of neighborhoods was included in the detailed analysis.

CULTURAL RESOURCES

As specified in chapter 5 of the NPS *Management Policies* (NPS 2006), the NPS is committed to identifying, documenting, and protecting cultural resources. NPS NEPA guidance requires the consideration of five types of cultural resources:

- **Cultural Landscapes:** A geographic area, including both cultural and natural resources and the wildlife and wildlife habitat or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values.
- **Historic Structures and Districts:** Historic properties significant in the history of American architecture, culture, engineering, or politics at the national, state, or local level.
- **Archeological Resources:** Material remains or physical evidence of past human life or activities that are of archeological interest.
- **Museum Collections:** Prehistoric and historic objects, artifacts, works of art, archival documents, and natural history specimens. Prevention of damage and minimization of the potential for deterioration are NPS management goals.
- **Ethnographic Resources:** Cultural and natural features of a park that are of traditional significance to traditionally associated peoples, which include contemporary park neighbors and ethnic or occupational communities that have been associated with a park for at least two or more generations (40 years), and whose interests in the park's resources began before the park's establishment.

The project area contains and has the potential to impact the first three types of cultural resources identified above: cultural landscapes, historic structures and districts, and archeological resources. Therefore, the EA includes an assessment of potential impacts on these resources. Museum collections and ethnographic resources have been dismissed from further analysis.

Cultural Landscapes

Cultural landscapes in the study area include Kenilworth Aquatic Gardens. The proposed trail would be built within the existing cultural landscape; therefore, the potential effects on this resource were included in the detailed analysis.

Historic Structures and Districts

Historic structures and districts in the study area include Anacostia Park, the Anacostia River Seawall, and the U.S. National Arboretum. Although the National Arboretum was listed in the National Register in 1975 as a historic site, for the purposes of this report it will be treated as a historic district due to its size and complexity. The Langston Golf Course Historic District is located adjacent to the project area. The proposed trail and pedestrian bridge would be built in and/or adjacent to historic structures and districts; therefore, the potential effects on these resources were included in the detailed analysis.

Archeological Resources

Several potentially significant archeological sites and areas likely to yield artifacts exist in the park and could be affected by construction; therefore, the potential effects on these resources were included in the detailed analysis.

IMPACT TOPICS DISMISSED FROM FURTHER ANALYSIS

STATE- OR FEDERALLY LISTED THREATENED AND ENDANGERED 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."

The NPS corresponded with the Maryland Department of Natural Resources (MDNR) and U.S. Fish and Wildlife Service (USFWS) in June 2004 and April 2009 to determine whether any rare, threatened, or endangered species exist in the ARW Trail study area. The responses received from the MDNR (Byrne July 9, 2004, and April 30, 2009) and USFWS (Moser September 14, 2004, and April 8, 2009) indicated that no state- or federally listed threatened or endangered species have been documented as resident in the study area and that the park contains no critical habitat (Rummel, Klepper, and Kahl, LLP [RK&K], 2009). Therefore, this impact topic was dismissed from consideration.

WATER QUALITY

The 1972 *Federal Water Pollution Control Act*, as amended by the *Clean Water Act* of 1977, is a national policy to restore and maintain the chemical, physical, and biological integrity of the nation's waters; enhance the quality of water resources; and prevent, control, and abate water pollution. NPS *Management Policies 2006* provides direction for the preservation, use, and quality of water originating in, flowing through, or adjacent to park boundaries (NPS 2006). The NPS seeks to restore, maintain, and enhance the water quality in the parks in a manner consistent with the *Federal Water Pollution Control Act* of 1972, as amended, and other applicable federal, state, and local laws and regulations.

The Anacostia River, Watts Branch, and Beaverdam Creek are all located in the project area, but would not be affected by the proposed action. The proposed pedestrian bridge would be designed to meet the navigational and permitting requirements of the U.S. Coast Guard, the USACE, and the District Department of the Environment. The Anacostia River is considered a navigable water at the location of the pedestrian bridge and, as a result, the bridge would be designed to maintain the existing navigable channel width downstream of the bridge. Existing condition survey plans obtained by the USACE identified the location of a planned 80-foot-wide channel along the eastern portion of the river at the proposed bridge's location. In order to accommodate this channel, the bridge pilings would be located 120 feet apart so as not to impede the planned channel. The bridge would not impede or reduce water flow. During construction, there would likely be a barge on the river and additional disturbance of the riverbed during installation of the pilings; however, these impacts would be of short duration and not likely measurable.

The bridge would also be designed to provide adequate navigational clearance for watercraft. The clearance of the bridge would be approximately 16 feet above the mean high water level, which is in line with the height of the Benning Road Bridge.

Therefore, this topic was dismissed from further analysis. Adherence to an erosion and sediment control plan would be required to mitigate potential impacts from stormwater runoff during construction.

PARK OPERATIONS AND MANAGEMENT

The DDOT would construct the proposed trail. The proposed trail and pedestrian bridge would be owned, operated, and maintained by the NPS and/or DDOT (NPS 2004a). A formal operations and maintenance agreement is currently under development. It is expected that both agencies would share operation and maintenance responsibilities, which could be completed by existing park staff. Therefore, the proposed project would have a negligible impact on park operations and this topic was dismissed from further analysis.

FLOODPLAINS

Executive Order 11988: Floodplain Management provides for the protection of floodplain values, while NPS Director's Order 77-2: *Floodplain Management Guideline* (NPS 2003a) provides the NPS with requirements for implementing the executive order. Although construction of the proposed trail on the western side of the Anacostia River would be located within the 100-year floodplain, the action would not result in changes to floodplain functions or increases in upstream or downstream flooding. The trail would not impede or accelerate high flows or inhibit the ability of the floodplain to disperse the volume and energy of floodwaters from the Anacostia River. The proposed action would not alter flood flows or result in new impacts on floodplain functions or values and would not add more than six inches of fill to the floodplain. Thus, there would be negligible impacts on floodplain functions or values from the proposed construction. Therefore, this impact topic was dismissed from further analysis in this EA. A Statement of Findings (SOF) was completed for floodplains and is available in appendix B.

CULTURAL RESOURCES

Museum Objects

Implementation of any alternative would have no effect on museum objects (historic artifacts, natural specimens, and archival and manuscript material); therefore, museum objects were dismissed as an impact topic.

Ethnographic Resources

Ethnographic resources are defined by the NPS as any "site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it" (NPS 1998a). In this analysis, the NPS term "ethnographic resource" is equivalent to the term "traditional cultural property," which is more widely used in the cultural resource management industry, and it would include sacred sites. Guidance for the identification of ethnographic resources is found National Register Bulletin 38, *Guidelines for Evaluating and Documenting Traditional Cultural Properties* (Parker and King 1998).The key considerations in identifying traditional cultural properties are their association with cultural practices or beliefs of a living community that (1) are rooted in the community's history and (2) are important in maintaining the continuing cultural identity of the community (Parker and King 1998, 1).

The Rapid Ethnographic Assessment Procedure for Anacostia Park was completed for the NPS in 1997 to assist in the development of management plans for the park. The study divided Anacostia Park into study areas that include Anacostia Park, the Seafarers Boat Club, River Terrace, Kingman Park, Kenilworth Park, and Kenilworth Gardens. The report concluded that overall, the park "receives heavy, year-round use and serves visitors of different class and ethnic backgrounds from around the region" (Juarez and Associates 1997). However, certain areas of the park, such as the Seafarers Boat Club and Kingman Park (which includes Langston Golf Course), have strong African-American ethnographic ties.

Because the undertaking would neither alter the function nor restrict the use of the park, there would be no effect on ethnographic groups. Because there are no properties that meet the definition of a traditional

cultural property within the project area, and because the use of Anacostia Park by ethnographic groups would not be affected by the proposed actions, ethnographic resources were dismissed as an impact topic.

ENVIRONMENTAL JUSTICE

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, 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 on low-income and minority populations. The proposed realignment would not appreciably affect either local or regional land use or local businesses. The construction of the proposed realignment could provide minimal beneficial impacts on the local economy (i.e., minimal increases in employment opportunities for the construction workforce and revenues for local businesses generated from construction activities and workers). Any increase, however, would be short-term and negligible, lasting only as long as construction. 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 (NPS 2004a). For these reasons, environmental justice was dismissed from further analysis.

CHAPTER 2: ALTERNATIVES

INTRODUCTION

NEPA requires federal agencies to explore a range of reasonable alternatives aimed at addressing the purpose and need of the proposed action. The alternatives under consideration must include the no action alternative as prescribed by the CEQ regulations for implementing NEPA (40 CFR 1502.14).

The alternatives analyzed in this document, in accordance with NEPA, are based on preliminary design and the result of internal scoping and public scoping. These alternatives, described in this section, meet the overall purpose of and need for the proposed action. Alternatives that were considered but were not technically feasible, did not meet the purpose and need of the project, created unnecessary or excessive adverse impacts on cultural or natural resources, and/or conflicted with the overall management of the park or its resources were dismissed from further analysis and are also described in this section.

The NPS explored and objectively evaluated two alternatives in this EA:

- Alternative A: No Action
- Alternative B: Realignment of Section 3 of the Anacostia Riverwalk Trail (NPS Preferred)

The description of alternative B is based on preliminary designs and information available at the time of this writing. Specific distances, areas, and layouts used to describe the alternative are estimated based on good engineering practice and may change during the actual design. If changes during any approved design are not consistent with the intent and effects of the selected alternative as described in this EA, additional compliance may be required prior to project implementation to ensure that NEPA guidelines are met.

DESCRIPTIONS OF THE ALTERNATIVES

ALTERNATIVE A: NO ACTION

Under the no action alternative, the NPS would not construct a new trail or make any enhancements to existing bicycle and pedestrian facilities. Visitors would continue to use the River Trail to access the river and the trail around the historic ponds, but there would be no other routes used by visitors or park neighbors to access the park. The NPS would continue to maintain and operate Anacostia Park and implement minor improvements as part of its normal maintenance and safety operations. Sections 1 and 2 of the ARW Trail would be completed as planned.

ALTERNATIVE B: REALIGNMENT OF SECTION 3 OF THE ANACOSTIA RIVERWALK TRAIL (NPS PREFERRED)

Alternative B is a revision of the preferred alignment of Section 3 (alternative 3A) as presented in the 2004 ARW Trail EA (NPS 2004a). Phase I would use portions of the existing roadway network in order to bypass the southern portion of the Kenilworth Park Landfill, located in the project area. Under phase I, the trail would include a bridge across the Anacostia River to provide connectivity between Anacostia Park and the National Arboretum. Upon completion of CERCLA remediation activities for Kenilworth Park South (KPS) Landfill, phase II would provide an alignment of Section 3 that would allow visitors to remain along the Anacostia River bank without using existing roadways. The phase I alignment would remain open and would allow local residents more direct access to the entire ARW Trail. Both phases of alternative B and the original 2004 Section 3 alignment are shown in figure 2-1.

FIGURE 2-1. ALTERNATIVE B—PHASES I AND II PROPOSED ALIGNMENTS

Alternative B consists of multi-use trail options that generally parallel the Anacostia River. The typical construction (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 12-foot-wide asphalt path that meanders around existing trees and wetlands. The trail would be reduced to 10 feet wide in the area of the Kenilworth Aquatic Gardens. The trail would be landscaped with additional trees and plants, similar to the representative paved section shown in figure 2-2. In environmentally sensitive areas such as wetlands and river edges, the walkway may be constructed as a boardwalk, as shown in figure 2-3. Other portions of the trail would include reconstructing existing roadways, as shown in figure 2-4, and constructing the trail in existing sidewalk areas, as shown in figure 2-5.

Phase I

Alternative B would connect the southern portions of Anacostia Park with Kenilworth Aquatic Gardens and the Bladensburg Trail in Maryland (figure 2-1). Under this alternative, the phase I alignment would extend the existing trail that currently ends near the Benning Road Bridge (ARW Trail, Section 2), 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 District Department of Public Works 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 and continue along Anacostia Avenue to Hayes Street. Up to this point, the proposed alignment would be identical to the Section 3 alignment proposed in the 2004 ARW Trail EA (NPS 2004a).

A Consent Decree between the District and PEPCO for their Benning Power Plant will initiate a site investigation to determine if there has been any contamination of soils in the area of NPS land surrounding the Benning Power Plant. While it is unknown if that area contains any contamination, the trail through this segment would be constructed on top of the current grade, building the trail upward 1-2 feet (to be determined during construction) to prevent any soil disturbance. The shoulders of the path would be widened in this area, increasing the overall footprint but allowing for a gentle slope from the raised trail. At the conclusion of future remediation, if necessary, it is anticipated that the land surrounding the trail would be capped and built up to the same grade as the elevation of the trail in this location.

The realigned Section 3 trail would then head west on Hayes Street, wrapping around Hayes Street and Mayfair Terrace. In this section, Anacostia Avenue is 34 feet wide and is composed 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 would use the existing sidewalk areas. Along Hayes Street, existing parking would be eliminated and a barrier would be put in place on the street to protect trail users from traffic and existing bus routes. Hayes Street is currently 36 feet wide, including the on-street parking. The trail width would remain at 10 feet with a 4-foot barrier, allowing for 22 feet of roadway.

The trail would then leave Hayes Street, turn north, and cross over the Watts Branch creek on an existing pedestrian bridge. The proposed trail would traverse Deane Avenue and continue north toward the Kenilworth Recreation Center and the intersection of 40th Street SE and Anacostia Avenue. The trail would turn west toward the river, traversing the northern edge of Kenilworth Park North (KPN) Landfill and just south of the boundary to the Kenilworth Aquatic Gardens. The capped KPN Landfill is open to the public and provides recreational opportunities. Information from the Remedial Investigations for the Kenilworth Park indicate the need for additional work at the site to provide long-term protection from landfill material associated with the site (NPS 2007; 2008c). Similar to the segment near the PEPCO station, the trail would again be built on 1-2 feet fill to prevent any soil disturbance on top of the landfill.

FIGURE 2-2. TYPICAL PAVED SECTION

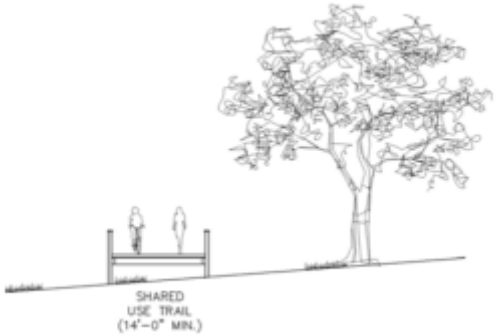

FIGURE 2-3. TYPICAL BOARDWALK SECTION

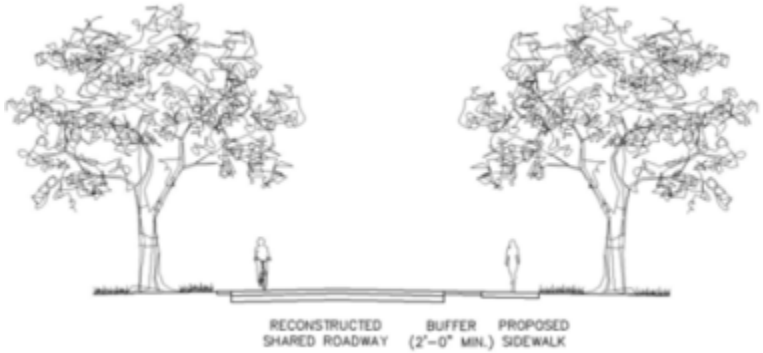

FIGURE 2-4. TYPICAL RECONSTRUCTED EXISTING ROADWAY

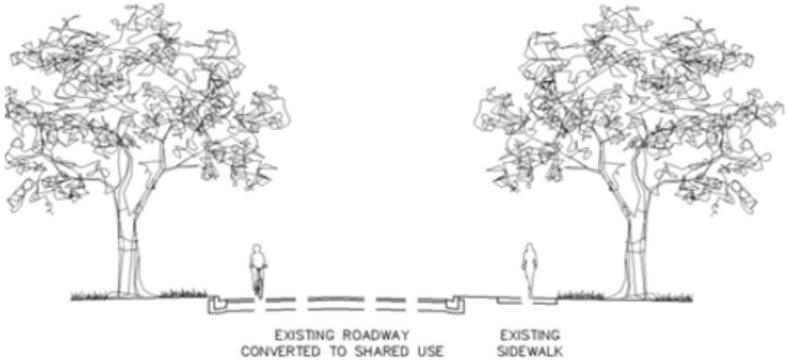

FIGURE 2-5. TYPICAL TRAIL AND EXISTING SIDEWALK

Once the trail reaches the river, the trail would split. One segment of the trail would turn north, remaining parallel to the Anacostia River. After crossing a bridge over a tidal gut that connects Kenilworth Marsh to the Anacostia River, the trail would follow an existing footpath located along the Anacostia River in the Aquatic Gardens currently referred to as the "River Trail." The existing footpath would be paved and

widened by approximately 1 to 2 feet to accommodate the proposed 8-foot width. Throughout the Aquatic Gardens, the trail would be reduced from a width of 10 feet to 8 feet to minimize impacts in the gardens.

From the Aquatic Gardens, the trail would continue north toward lower Beaverdam Creek along the east bank of the Anacostia River, crossing over Lower Beaverdam Creek and beneath the Amtrak Railroad and New York Avenue bridges, rejoining the original 2004 alignment. As described in the 2004 EA, the portion of the trail along the Anacostia River bank would be on an elevated boardwalk structure to minimize impacts on wetland areas and existing vegetation (NPS 2004a). North of New York Avenue the proposed trail would gradually turn away from the Anacostia River to the east, terminating at the connection with the Bladensburg Trail. Additional elevated boardwalk structures would be required in this area to minimize impacts on 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.

At the split, a small trail spur would turn south along the riverbank, ending at a pedestrian bridge across the Anacostia River approximately one mile upstream from the Benning Road Bridge. The pedestrian bridge across the Anacostia River would include a 390-foot bridge span with an additional 1,000 feet of trail construction on the western bank of the river. The bridge would connect with an existing gravel service road that connects the U.S. National Arboretum with NPS property and is currently used occasionally by maintenance vehicles. The trail would provide direct pedestrian and bicycle access between the ARW Trail and the National Arboretum so that users of the trail can enjoy the unique gardens, landscapes, and amenities of the National Arboretum. During the normal operating hours of the National Arboretum, users of the trail could continue on through the National Arboretum and exit at the R Street Gate to continue on into the District.

The bridge and the western section of the ARW Trail would operate during National Arboretum hours (open every day from 8 a.m. to 4:30 p.m.; closed December 25). The trail on the western bank would be similar to the eastern bank trails built at grade, with a 10-foot-wide asphalt trail and 2-foot stone dust shoulders. The proposed bridge width is 14 feet in order to allow two-way bicycle traffic with a buffer to accommodate pedestrians or bystanders on the bridge.

Two bridge designs would be feasible for this location. A girder bridge is the most common bridge type for similar uses. Either steel or concrete could be used. The second option would be a prefabricated steel truss bridge, which would be prefabricated by a manufacturer and then assembled on site. Typically, prefabricated bridges are made of weathering steel with a concrete deck. Figures 2-6 and 2-7 provide examples of what the pedestrian bridge could look like.

Under this alternative, a small dock (approximately 12-foot by 12-foot) would be installed in the area of the proposed bridge. The dock would be attached perpendicular to a 6-foot by 8-foot ramp in the area of the proposed bridge abutment on the eastern bank of the Anacostia River, and would not interfere with the existing seawall. This site is currently used informally by canoeists, kayakers and small boats as a landing. This dock would better accommodate safe landings and entires into the Anacostia River by this user group. Installation of the dock would require pounding several posts (approximately four inches in diameter) into the shoreline and river bottom to anchor the dock and keep it in place.

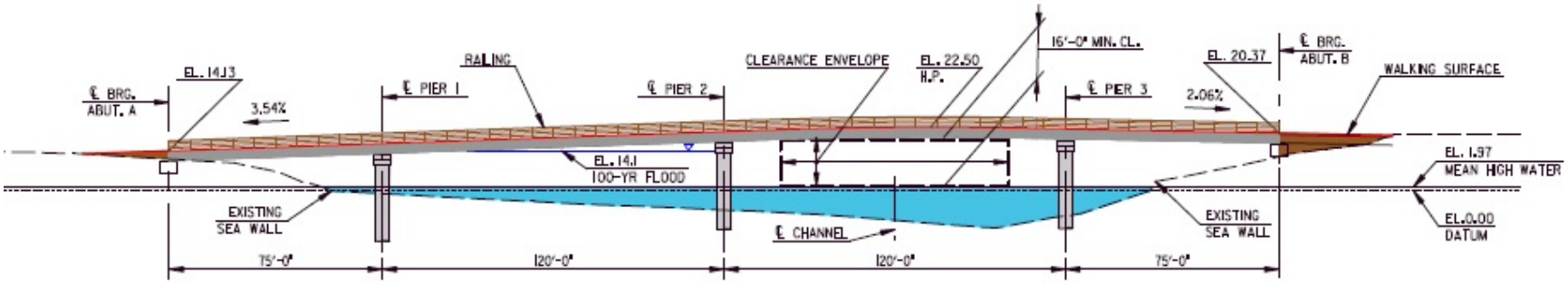

FIGURE 2-6. GIRDER BRIDGE DESIGN EXAMPLE

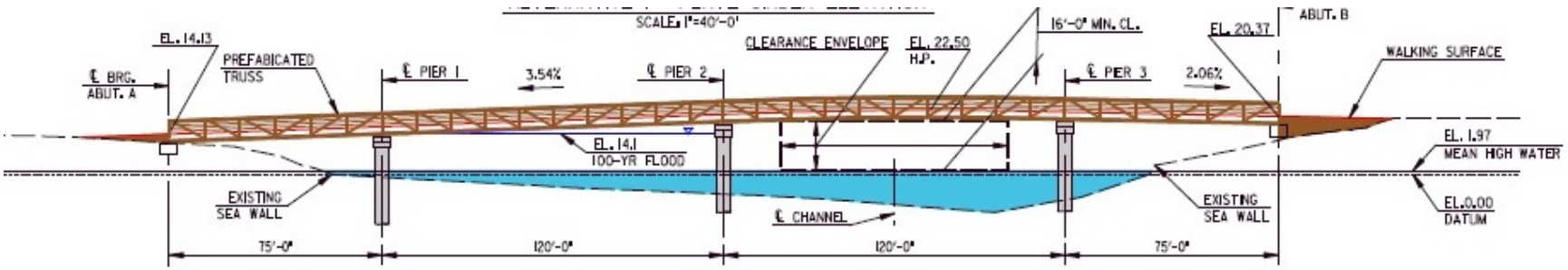

FIGURE 2-7. PREFABRICATED STEEL TRUSS BRIDGE DESIGN EXAMPLE

Phase II

Phase II of alternative B is a final alignment that would be constructed after the completion of CERCLA remediation activities occurring at the existing KPS Landfill, which is currently closed to the public. The alignment would avoid the use of any existing streets and would continue the ARW Trail along the east bank of the Anacostia River. The alignment would follow the original proposed alignment along the eastern side of the District Department of Public Works Trash Transfer Station before turning west back toward the Anacostia River. The trail would cross over the Watts Branch, which divides the landfill into KPN and KPS. The phase II alignment would follow the east bank of the Anacostia, joining the phase I alignment at the bridge to the U.S. National Arboretum. The proposed trail in phase II would be a typical paved path with a 10- to 12-foot width and associated landscaping, as shown in figure 2-2. There would be one small pedestrian bridge over the Watts Branch as it joins the Anacostia River.

MITIGATION MEASURES OF THE ACTION ALTERNATIVE

The NPS places a strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. To help ensure the protection of natural and cultural resources and the quality of the visitor experience, the following protective measures would be implemented as part of the action alternative. The NPS would implement an appropriate level of monitoring throughout the construction process to help ensure that protective measures are being properly implemented and are achieving their intended results.

SOILS

During the construction period, the NPS would follow all applicable federal and District regulations and implement the following mitigation measures to minimize adverse impacts on soils:

- Adhere to an erosion- and sediment-control plan completed in accordance with chapter 5 of title 21 and chapter 31 of title 20, District of Columbia Municipal Regulations.
- Reduce or minimize adverse impacts by employing best management practices to prevent and control soil erosion and sedimentation during the construction and operation of the trail.

VEGETATION

- Minimize cutting trees whenever possible. Preliminary trail design was routed to avoid healthy native trees. Instead, unhealthy or invasive trees were slated for removal wherever feasible.
- Clearly note vegetation clearing limits on construction documents and mark them in the field to minimize the disturbance and alteration of vegetation and wildlife habitat.
- Incorporate native tree planting along the new trail.

WILDLIFE AND WILDLIFE HABITAT

- Conduct vegetation clearing outside the breeding season for birds (typically April through August) and/or do not remove occupied bird nests.

WETLANDS

- Use appropriate erosion and siltation controls during construction, including stabilization of all exposed soil or fill material at the earliest practicable date.
- Avoid the use of heavy equipment in wetlands if at all possible.
- Place excavated material on an upland site.
- Minimize shade impacts, to the extent practicable, in the northern portion of the realigned section.

VISITOR USE AND EXPERIENCE

- Avoid construction during peak visitor use periods (e.g., weekends and holidays) to avoid disruption for visitors.

HUMAN HEALTH AND SAFETY

- Develop a safety plan prior to the initiation of construction to ensure the safety of park visitors, workers, and park personnel.
- Place construction fencing at the intersections of the construction area and anywhere else visible to visitors to discourage visitors from entering a construction site.
- Elevate trail in areas of known or potential contamination to avoid ground disturbance and mobilization of soils.

NEIGHBORHOODS

- Conduct all construction activities during daylight hours to avoid noise impacts on park neighbors.

CULTURAL RESOURCES

- If archeological resources are discovered during construction, halt all work in the immediate vicinity of the discovery until the resources can be identified and documented and an appropriate mitigation strategy developed. If necessary, consult with the District Historic Preservation Officer, the NPS, and/or the NPS regional archeologist to ensure that the protection of resources is addressed. In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, follow provisions outlined in the Native American Graves Protection and Repatriation Act (25 USC 3001) of 1990.
- Develop appropriate mitigation measures in future Section 106 consultation. Most likely, these mitigation measures would include an archeological inventory and evaluation study that would include a geoarcheological investigation, followed by appropriate documentation for any National Register–eligible resources that could not be avoided during construction.
- Develop and implement a program of construction monitoring to document archeological resources during the construction phase of the project.

ALTERNATIVES CONSIDERED BUT DISMISSED

Several alternatives or alternative elements were identified during the design process and internal and public scoping. Some of these were determined to be unreasonable or much less desirable than similar options included in the analysis, and were therefore not carried forward for analysis in this EA. The justification for eliminating alternatives from further analysis was based on factors relating to

- conflicts with already established park uses
- duplication with other less environmentally damaging alternatives
- conflict with the statement of purpose and need or other policy
- severe impacts on environmental or historic resources

The original alignment for Section 3 of the ARW Trail as described in the 2004 EA (NPS 2004a) was considered but dismissed. The original alignment, provided in figure 2-1, mostly used the existing roadway network along the eastern park boundary and did not allow the user to maintain a path along the Anacostia River. Detailed site investigations and reviews were conducted after the completion of the 2004 EA. These site investigations revealed that extremely difficult wooded terrain would have to be traversed,

requiring the removal of multiple large-diameter trees. The 2004 preferred alignment also raised numerous security concerns at the historic Kenilworth Aquatic Gardens and greenhouse complex (Syphax 2010).

Under phase I, additional bridge construction options were also considered. A timber bridge design was considered but was dismissed due to the length of bridge required at the proposed bridge location. Timber structures typically cannot attain the span length that would be required (120 feet) to maintain a navigable channel along the Anacostia River. Additionally, a timber structure would require more intensive maintenance. For these reasons, the NPS dismissed a timber bridge design from full analysis.

Another potential bridge option is a cable-stayed bridge. This type of bridge involves the use of towers and cables to support the superstructure of the bridge. In addition to a higher cost and specialized maintenance requirements, a cable-stayed bridge is highly visible and was deemed inappropriate and undesired for the park setting. Therefore, this type of bridge was considered but dismissed.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The NPS is required to identify the environmentally preferable alternative in its NEPA documents for public review and comment. The NPS, in accordance with the Department of the Interior policies contained in the Departmental Manual (DM; 516 DM 4.10) and the CEQ *NEPA's Forty Most Asked Questions*, defines the environmentally preferable alternative as the alternative that best promotes the national environmental policy expressed in NEPA (section 101[b] [516 DM 4.10]). In its *NEPA's Forty Most Asked Questions*, the CEQ further clarifies the identification of the environmentally preferred alternative, stating, "Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources" (CEQ n.d).

After completing the environmental analysis, the NPS identified alternative B as the environmentally preferable alternative in this EA because it best meets the definition established by the CEQ. Alternative B minimizes impacts on wetlands, forests, and trees and places a priority on retaining highly desirable native tree species. Alternative B avoids culturally sensitive areas while improving visitor use and experience in Anacostia Park and the District as a whole. Alternative B provides beneficial uses of Anacostia Park, allowing for a regional bicycle and pedestrian connection without degradation of park resources.

Table 2-1 briefly summarizes the evaluated range of environmental consequences of alternative A and alternative B.

TABLE 2-1. SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Affected Resource	Alternative A: No Action	Alternative B: Realignment of Section 3 of the ARW Trail
Soils	The implementation of the no action alternative would result no impacts on soils. Cumulative impacts on the soils in the study area would not occur.	Alternative B would result in short-term negligible to minor adverse impacts and long-term minor adverse impacts on soils. Cumulative impacts on the soils in the study area would be long-term, minor, and adverse, with alternative B having a slight contribution to adverse impacts.

Affected Resource	Alternative A: No Action	Alternative B: Realignment of Section 3 of the ARW Trail
Vegetation	The no action alternative would have long-term negligible adverse impacts on vegetation. Cumulative impacts on vegetation would be long-term, minor, and adverse, with the no action alternative having a slight contribution to adverse impacts.	Adverse impacts on vegetation would be short-term, adverse, and negligible. There would also be long-term moderate adverse impacts on vegetation. Cumulative impacts on vegetation would be long-term, moderate, and adverse, with alternative B having a noticeable contribution to adverse impacts.
Wildlife and Wildlife Habitat	The no action alternative would have long-term negligible adverse impacts on wildlife and wildlife habitat. Cumulative impacts on wildlife and wildlife habitat would be short-term and long-term, minor, and adverse, with the no action alternative having a slight contribution to adverse impacts.	Alternative B would result in short-term minor adverse impacts on wildlife during the construction period. There would be long-term minor adverse impacts on wildlife and wildlife habitat. Cumulative impacts on wildlife and wildlife habitat would be long-term, minor, and adverse, with alternative B having a slight contribution to adverse impacts.
Wetlands	The implementation of the no action alternative would result in no adverse impacts on wetlands in the study area. There would be no cumulative impacts.	Alternative B would result in long-term minor adverse impacts on approximately 0.027 acre of wetlands. Cumulative impacts on wetlands would be long-term, minor, and adverse, with alternative B having a slight contribution to adverse impacts.
Visitor Use and Experience	The implementation of the no action alternative would result in short-term moderate and long-term negligible adverse impacts on visitor use and experience. There would be long-term beneficial cumulative impacts on visitor use and experience, with the no action alternative having a slight adverse contribution.	The implementation of alternative B would result in short-term minor adverse impacts on visitor use and experience as a result of construction activities. Alternative B would have long-term beneficial impacts on visitor use and experience. Cumulative impacts on visitor use and experience would be long-term and beneficial, with alternative B having a noticeable beneficial contribution.
Human Health and Safety	The implementation of the no action alternative would result in long-term negligible adverse impacts on human health and safety. Cumulative impacts on human health and safety would be long-term and beneficial, with the no action alternative having a slight adverse contribution.	The implementation of alternative B would result in short-term negligible adverse and long-term beneficial impacts on human health and safety. There would be long-term beneficial cumulative impacts on human health and safety, with alternative B having a noticeable beneficial contribution and slight adverse contribution.
Neighborhoods	The implementation of the no action alternative would result in long-term negligible adverse impacts on neighborhoods. There would be long-term beneficial cumulative impacts on neighborhoods, with alternative A having a slight adverse contribution.	The implementation of alternative B would result in short-term minor adverse impacts on neighborhoods as a result of construction activities. In addition, alternative B would have long-term beneficial impacts. Cumulative impacts on neighborhoods would be long-term and beneficial, with alternative B having a noticeable beneficial contribution.

Affected Resource	Alternative A: No Action	Alternative B: Realignment of Section 3 of the ARW Trail
Cultural Landscapes	The implementation of the no action alternative would result in no direct, indirect, beneficial, or adverse impacts on cultural landscapes in the study area. Cumulative effects of the no action alternative on cultural landscapes would not occur.	Impacts on cultural landscapes from alternative B would be long-term, negligible to minor and adverse, which is equivalent to *no adverse effect* under Section 106. Alternative B would result in short- and long-term minor adverse cumulative impacts on cultural landscapes.
Historic Structures and Districts	The implementation of the no action alternative would result in no direct, indirect, beneficial, or adverse impacts on historic structures and districts in the study area. Cumulative effects of the no action alternative on historic structures and districts would not occur.	Impacts on historic structures and districts from alternative B would be long-term, minor and adverse, which is equivalent to *no adverse effect* under Section 106. Alternative B would result in indirect long-term minor adverse cumulative impacts on historic structures and districts.
Archeological Resources	Implementation of the no action alternative would result in no direct, indirect, beneficial, or adverse impacts on archeological resources in the study area. Cumulative effects of the no action alternative on archeological resources would not occur.	Impacts on archeological resources under alternative B could range from negligible to minor and would be direct and long-term in character. It can generally be assumed that any impacts to archeological resources would be direct, long-term, and adverse. For purposes of Section 106, the impacts would be *no adverse effect*.

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CHAPTER 3: AFFECTED ENVIRONMENT

This chapter of the EA describes existing environmental conditions in the areas potentially affected by the alternatives evaluated. This section describes the following resource areas: soils, vegetation, wildlife and wildlife habitat, wetlands, visitor use and experience, human health and safety, neighborhoods, and cultural resources. Potential impacts are discussed in the "Environmental Consequences" chapter following the same order.

SOILS

Soils are classified by a complex taxonomy that includes soil associations, series, and phases. Soil associations represent the largest and most general classification. A soil association is a landscape that has a distinctive proportional pattern of soils and is named for the major soil types that it represents. It normally consists of one or more major soil series and at least one minor soil series. A soil series is a collection of soils that have major layers similar in thickness, arrangement, and other important characteristics, but may differ in surface layer texture. Each soil series is named for a town or other geographic feature near the location where the series was first observed and mapped. Soil phases are more detailed classifications that differentiate soils of the same series based on characteristics that affect the use of the soils, such as the texture of the surface soil, slope, or stoniness (U.S. Department of Agriculture [USDA] 1999).

The information presented below, which describes soils in the project area, is taken from the soil surveys of the District of Columbia and Prince George's County, Maryland, part of the National Cooperative Soil Survey conducted by the Natural Resources Conservation Service (USDA 1976, 2010). Soils found in the project area are illustrated in figure 3-1 and general soils characteristics are presented in table 3-1.

Soils found in the footprint of the proposed trail under the southwest, unchanged, alignment consist of Udorthents, urban land, and Galestown and Rumford. Soils in the northeast portion of the unchanged alignment include Fluvaquents, Longmarsh and Indiantown, and urban land–Elsinboro.

Soils in the footprint of the proposed trail alignment under phase I consist of Galestown and Rumford, Iuka sandy loam, and Bibb sandy loam. Under phase I in the vicinity of the KPN Landfill the primary soil is Udorthents, which refers to soils that have been previously used for refuse or disposal, meaning that the original soil composition has been forever altered and now consists of the original soil (unknown), refuse disposal, and imported fill material. The proposed bridge across the Anacostia River and the accompanying trail would be in areas with Udorthents and Woodstown loam.

The proposed trail alignment under phase II would be located primarily in areas with Udorthents soils because the proposed trail alignment would go through KPS Landfill. This area now consists of the unknown original soil, refuse disposal, and imported fill material.

Iuka sandy loam is a moderately well-drained soil found along major streams of the Coastal Plain. The soils are nearly level, the permeability is moderate, and runoff is slow. These soils have a potential for flooding and have poor potential for building and fair potential for recreational use. These soils are best used for lawns, trees or other plants, and natural areas. There is little or no hazard of erosion.

Bibb sandy loam soils are poorly drained soils occurring on floodplains of the Coastal Plan. These soils are nearly level, the permeability is moderate, and runoff is very slow. These soils have a potential for frequent flooding, but have good potential for use as natural areas. The hazard of erosion is none to slight.

As mentioned above, Udorthents consists of areas that have been used for disposing of refuse. These areas were mainly created by placing several feet of refuse on floodplains or low-lying areas. A number of different Udorthents soil associations are present within the project area, varying by slope. Slopes throughout the project area are minimal. Permeability is quite variable in all associations but is generally

very slow to slow; runoff is slow to rapid, and the hazard of erosion is moderate to severe. Because this soil contains refuse it has poor potential for building and natural uses.

Galestown and Rumford soils have minor slopes and are found on uplands and terraces of the Coastal Plain. These soils are somewhat excessively drained and permeability of these soils is rapid to very rapid, with slow runoff and little or no hazard of erosion. These soils have good potential for most building purposes and fair potential for natural functions.

Longmarsh and Indiantown soils are nearly level and are located along floodplains. These soils are very poorly drained, have moderate permeability and very slow runoff. Their potential for building or recreation use is poor and the best use of the soils is as a natural area or wildlife habitat.

Urban land–Elsinboro soils have been used for community development and have been modified by excavation or grading. These soils have minor slopes and are moderately well drained, with moderate permeability and slow runoff.

Woodstown sandy loam is a nearly level to gently sloping soil found in upland areas of Coastal Plains. This soil is moderately well drained, with moderate permeability and slow to medium runoff. Potential uses include landscaped areas, vegetable gardens, and lawns, with only fair potential for building and recreation uses. Erosion hazard is none to slight.

TABLE 3-1. MAPPED SOILS IN THE PROJECT AREA

Soil Type	Map Label (Abbrev.)	Slope (%)	Drainage	Permeability	Erosion Hazard (K Factor)	Runoff	Hydric Soil (Y/N)
Iuka sandy loam	Ik	0–2	Moderately well drained	Moderate	0.24	Slow	Y
Bibb sandy loam	Bg	0–2	Poorly drained	Moderate	0.20	Very slow	Y
Udorthents	U1, U11B, U11C, U11D	0–25	NA	Generally very slow to slow	0.20	Slow to rapid	N
Galestown and Rumford	GfB	0–8	Somewhat excessively drained	Rapid to very rapid	0.10	Slow	N
Longmarsh and Indiantown	404A	0–1	Very poorly drained	Moderate	0.02	Very slow	Y
Urban land–Elsinboro	489UUB	0–5	Moderately well drained	Moderate	NA	Slow	Y
Woodstown sandy loam	WoB	2–5	Moderately well drained	Moderate	0.24	Slow to mediu m	N

NA = not applicable

FIGURE 3-1. SOILS IN THE PROJECT AREA

VEGETATION

A natural resources inventory in the project area, including a tree inventory and forest investigation, was conducted by RK&K in 2009 in accordance with NPS guidelines and the D.C. Urban Forest Preservation Act of 2002. As part of this inventory, all trees greater than or equal to six inches diameter at breast height (DBH), as well as river birch (*Betula nigra*) and American holly (*Ilex opaca*) greater than or equal to four inches DBH, were inventoried in the project area. Approximately 2,300 trees were inventoried in the project area. The inventory also covered District property/street trees, District special trees (trees that are 55 inches in circumference or 17.5 inches DBH or greater [50 D.C. REG. 888]), and large trees outside the project area with the potential for critical root zone impacts. District property/street trees and special trees include various species of oaks and maples. Inventoried trees were categorized by desirability and ranked as one of the following: Species 1, highly desirable natives; Species 2, desirable natives; Species 3, less desirable natives/nonnatives; and Species 4, undesirable nonnatives.

Mid-successional Sycamore/Green Ash/Box Elder/Silver Maple forest association dominates the forested areas in the project area. One area of Virginia Pine/Oak forest association occurs along the Aquatic Gardens peninsula between the Anacostia River and Kenilworth Marsh. The 2009 Natural Resources Inventory identified over 2,200 trees, including 44 District property/street trees along Anacostia Avenue and 14 special trees (RK&K 2009).

Mid-successional Sycamore/Green Ash/Box Elder/Silver Maple forest consists of many species indicative of a bottomland riparian forestspecies. Common species include American sycamore (*Platanus occidentalis*), silver maple (*Acer saccharinum*), box elder (*Acer negundo*), green ash (*Fraxinus pennsylvanica*), black cherry (*Prunus serotina*), and red maple (*Acer rubrum*), with inclusions of elm (*Ulmus* sp.), hickory (*Carya* sp.), oaks (*Quercus* spp.), tree of heaven (*Ailanthus altissima*), tulip poplar (*Liriodendron tulipifera*), persimmon (*Diospyros virginiana*), Eastern cottonwood (*Populus deltoides*), and white mulberry (*Morus alba*). Areas of upland forest are dominated by plant species including red mulberry (*Morus rubra*), black locust (*Robinia pseudoacacia*), willow oak (*Quercus phellos*), princess tree (*Paulownia tomentosa*), northern catalpa (*Catalpa speciosa*), silk tree (*Albizia julibrissin*), and slippery elm (*Ulmus rubra*) (NPS 2004a). Invasive species, including poison ivy (*Toxicodendron radicans*), bush honeysuckle (*Lonicera* sp.), and Japanese honeysuckle (*Lonicera japonica*), dominate most of the shrub and herbaceous layers of these areas.

An area with planted pines is located along the berm on the north side of the Trash Transfer Station off Anacostia Avenue. This area (approximately 2 acres) was planted with pines and colonized by pioneer species, including white pine (*Pinus strobus*), Austrian pine (*P. nigra*), black locust, black cherry, and invasive bush honeysuckle (RK&K 2009).

Virginia Pine–Oak forest encompasses the peninsula between the Anacostia River and Kenilworth Marsh/Aquatic Gardens. Common species include southern red oak, Virginia pine (*Pinus virginiana*), black cherry, American holly, and flowering dogwood (*Cornus florida*) (RK&K 2009).

In addition, there are areas of maintained right-of-way along roadways in the project area. Typical vegetation in these areas includes Gramineae grass species, white clover (*Trifolium repens*), and English plantain (*Plantago lanceolata*) (NPS 2004a).

The NPS property on the western side of the Anacostia River consists of a gravel road for maintenance vehicles as well as bottomland riparian forest species, as listed above. A majority of the area, especially on the river side of the gravel path, is covered by kudzu (*Pueraria lobata*), a nonnative vine plant that is considered invasive.

Several wetland areas were found during the wetlands delineation conducted as part of the 2009 natural resource inventory investigations, including forest wetlands and emergent wetlands. Plant species that dominate forested wetlands include red mulberry, silver maple, American sycamore, red maple, sweet gum (*Liquidambar styraciflua*), black gum (*Nyssa sylvatica*), green ash, Tartarian honeysuckle (*Lonicera*

tatarica), blunt broom sedge (*Carex tribuloides*), and Virginia creeper (*Parthenocissus quinquefolia*) (RK&K 2009). Plant species that dominate emergent wetlands include broad-leaf cattail (*Typha latifolia*), Kentucky bluegrass (*Poa pratensis*), shallow sedge (*Carex lurida*), blunt broom sedge, water bentgrass (*Agrostis semiverticillata*), arrow arum (*Peltandra virginica*), swamp rosemallow (*Hibiscus moscheutos*), curly dock (*Rumex crispus*), and devil's beggar ticks (*Bidens frondosa*) (RK&K 2009).

WILDLIFE AND WILDLIFE 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, in the park, 23 percent of the land has original forest tree cover (NPS 2004a). 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 plant and wildlife species.

The presence of a riparian floodplain, emergent and forested wetlands, and the Kenilworth Aquatic Gardens and Kenilworth Marsh provide a unique natural environment in an otherwise urban area. The Kenilworth Aquatic Gardens is the only NPS 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 2004a).

WILDLIFE

The National Capital Parks – East has documented 191 bird, 50 butterfly, 23 fish, 20 reptile, 18 amphibian, and 17 mammal species as either residents in or migrants passing through Anacostia Park. Local predators include red and gray foxes (*Vulpes vulpes* and *Urocyon cinereoargenteus*), raccoons (*Procyon lotor*), ospreys (*Pandion haliaetus*), red-tailed hawks (*Buteo jamaicensis*), and transitory bald eagles (*Haliaetus leucocephalus*). Other species include opossums (*Didelphis marsupialis*), gray squirrels (*Sciurus carolinensis*), and various species of bats, butterflies, dragonflies, snakes, turtles, migratory songbirds, and waterfowl (NPS n.d.b, 2004a).

Past field investigations have identified evidence of the following species in their respective habitats (NPS 2004a):

- Various species of amphibians, including marbled salamander (*Ambystoma opacum*), red-spotted newt (*Notophthalmus viridescens*), and spring peeper (*Pseudacris crucifer*), in both emergent and forested wetlands
- Eastern box turtle (*Terrapene carolina*) in forested uplands
- Eastern tiger swallowtail butterfly (*Papilio glaucus*) in upland fields
- Mammals including red fox and eastern gray squirrel 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 River
- Northern mockingbird (*Mimus polyglottos*) and American crow (*Corvus brachyrhynchos*) in maintained fields
- Black-crowned night heron (*Nycticorax nycticorax*) in the Anacostia River riparian buffer
- Great blue heron (*Ardea herodias* Linnaeus) and double-crested cormorant (*Phalacrocorax auritus*) flying over the Anacostia River

- Canada goose (*Branta canadensis*), mallard duck (*Anas platyrhynchos*), rough-winged swallow (*Stelgidopteryx* Baird), killdeer (*Charadrius vociferus*), great black-backed gull (*Larus marinus* Linnaeus), laughing gull (*Larus atricilla* Linnaeus), and ring-billed gull (*Larus delawarensis*) along the banks of the Anacostia River
- Northern cardinal (*Cardinalis cardinalis*) in upland forests
- House sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris* Linnaeus), and gray catbird (*Dumetella carolinensis*) in developed areas of the park

WILDLIFE HABITAT

Both phases of the proposed realignment would extend through several different habitat types in Anacostia Park. 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. In certain habitats, invasive vegetation species such as kudzu, Japanese honeysuckle, and tree of heaven threaten to compromise the native plants and wildlife of the park. The habitat types in the project area are listed below:

Emergent wetlands: Four areas of emergent wetland that support diverse biotic communities are located within the project area (see "Wetlands" section, below).

Forested wetlands: Ten areas of forested wetland are located in the project area. These wetlands provide habitat for a number of flora and fauna species (see "Wetlands" section, below).

Upland forests: The two trail alignments would extend through areas of upland forest in the Anacostia River riparian buffer, north of Benning Road.

Landscaped areas: There are several areas of maintained right-of-way along roadways in the project area, particularly near the border between Maryland and the District.

Meadows: There are 27 acres of actively managed meadows in the park; another 15 acres exist in the Kenilworth Gardens (NPS 2004a).

WETLANDS

Wetlands are areas that are inundated or saturated by surface water 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 (USACE 1987). As such, the USACE requires that areas be dominated by hydrophytic vegetation, contain hydric soils, and display indicators of hydrology to be considered a wetland. The NPS definition of wetlands is similar to that of the U.S. Environmental Protection Agency and the USACE; however, it is broader than the USACE 404 permit program definition and therefore covers a broader range of wetland habitat types. The NPS classifies wetlands based on the USFWS *Classification of Wetlands and Deepwater Habitats of the United States*, also called the Cowardin classification system (Cowardin et al. 1979). Based on this classification system, a wetland must only have one or more of the following attributes:

- The habitat at least periodically supports predominantly hydrophytic (wetland) vegetation.
- The substrate is predominantly undrained hydric soil.
- The substrate is nonsoil and saturated with water, or is covered by shallow water at some time during the growing season. (Cowardin et al. 1979)

In 1977, President Carter issued Executive Order 11990: Protection of Wetlands. In response to this executive order, the NPS issued Director's Order 77-1: *Wetland Protection* (NPS 2008a). This order

directed the NPS to use the USFWS definition and methodology as the standard for identifying, classifying, and inventorying wetlands when NPS actions have the potential to adversely impact wetlands.

The NPS must also comply with section 404 of the Clean Water Act when those actions involve the discharge of dredged or fill materials in wetlands or other waters of the United States. As required by Director's Order 77-1, the NPS must avoid adverse impacts on wetlands to the extent practicable, must minimize any impacts that cannot be avoided, and must compensate for any remaining unavoidable adverse impacts on wetlands (NPS 2008a).

A wetland survey of the project area completed in 2009 delineated the project area based on the USACE manual and the Cowardin classification system (Cowardin et al. 1979) used by the NPS under Director's Order 77-1. The survey identified 19 small wetlands in the study area that would be crossed by the proposed trail or that are directly adjacent to the proposed trails (e.g., where trails were routed around the wetlands to avoid direct impacts). For complete figures of the wetlands surveyed in the project area, please refer to appendix B of the *Natural Resource Inventory* (RK&K 2009). Each small wetland and its location are described below. Wetlands WA, WD, and WI would be directly impacted by trail construction.

During a survey for the proposed phase I trail alignment for the pedestrian bridge, two additional wetlands were identified. The trail leading up to the bridge on the eastern bank of the Anacostia would completely avoid both wetlands.

WETLAND WA — ANACOSTIA RIVER

Wetland WA consists of the Anacostia River within the high tide line (HTL). This was determined using four months of tide gauge data from the Washington Potomac River Station – 8594900 that was adjusted to the Kenilworth Aquatic Garden site in the project area. It is classified as a tidal riverine open-water permanent wetland (R1OWV).

WETLAND WB

Wetland WB is a palustrine forested broadleaf deciduous saturated wetland (PFO1B) located west of the proposed trail, just south of the Amtrak railroad bridge. Dominant vegetation in Wetland WB is composed of box elder, silver maple, green ash, and shrubs of silky dogwood (*Cornus amomum*). Wetland hydrology indicators consist of soil saturated to the surface, free water at eight inches of depth, water-stained leaves, and oxidized rhizospheres. The soils in this area meet hydric soil indicator F19: Piedmont floodplain soils.

WETLAND WC — LOWER BEAVERDAM CREEK

Lower Beaverdam Creek is a tidal perennial stream with an unconsolidated mud bottom (R1UB3) entering the Anacostia River directly south of the Amtrak railroad bridge. WC has an artificial, human-altered channel shape. The HTL was used to delineate the extent of this wetland in the study area.

WETLAND WD

Wetland WD is a tidally influenced broad-leaved forested wetland (PFO1N) located north of US 50 in the north section of the study area. It is located outside the mean high water (MHW) line and partially within the HTL. Indicators of wetland hydrology consist of surface water, high water table, water marks, sediment deposits, drift deposits, and water-stained leaves. The dominant vegetation consists of green ash, silky dogwood, day lily (*Hemerocallis* sp.), jewelweed (*Impatiens capensis*), and Japanese honeysuckle. Soils at this site meet hydric soil indicators F19: Piedmont floodplain soils and F20: anomalous bright loamy soils.

WETLAND WE

Wetland WE is a palustrine broad-leaved deciduous forested seasonally flooded wetland (PFO1C) located west of the proposed trail and northwest of US 50. WE is adjacent to the west bank of the Anacostia River and north of wetlands WD and WF. Wetland hydrology indicators consist of surface water, saturation to the surface, and water marks. The dominant vegetation consists of box elder, green ash, silver maple, sedges (*Carex* sp.), sweet woodreed (*Cinna arundinacea*), and grape vine (*Vitis* sp.). Soils at this site meet hydric soil indicators F19: Piedmont floodplain soils and F20: anomalous bright loamy soils.

WETLAND WF

Wetland WF is a palustrine deciduous forested / palustrine aquatic bed semi-permanently flooded wetland (PFO1/PABF) located east of the proposed trail and west of the Anacostia River in the northern portion of the study area. Wetland hydrology indicators consist of surface water, saturation to the surface, water marks, water-stained leaves, and aquatic fauna. The dominant vegetation consists of green ash and reed canary grass (*Phalaris arundinacea*). Soils at this site meet hydric soil indicators F19: Piedmont floodplain soils and F20: anomalous bright loamy soils.

WETLAND WG

Wetland WG is a tidal emergent persistent wetland (R1EM1) located between the Anacostia River and the proposed trail at the northern end of the study area. This site has a direct surface water connection with the Anacostia River. Wetland hydrology indicators consist of surface water, saturation to the surface, sediment deposits, drift deposits, algal mat or crust, inundation visible on aerial photography, aquatic fauna, water-stained leaves, and water marks. The dominant vegetation consists of rice cut grass (*Leersia oryzoides*) and pickerelweed (*Pontederia cordata*). Soils at this site meet hydric soil indicators F19: Piedmont floodplain soils and F20: anomalous bright loamy soils.

WETLAND WI

Wetland WI is a tidal emergent persistent regularly flooded wetland (R1EM1N) located north of Benning Road and west of Anacostia Avenue. This wetland corresponds with a portion of the R1OWV tidal Anacostia River as designated by the National Wetlands Inventory (NWI). Wetland hydrology indicators consist of surface water, saturation to the surface, water marks, drift deposits, algal mat or crust, inundation visible on aerial imagery, water-stained leaves, aquatic fauna, and oxidized rhizospheres. The dominant vegetation consists of cattails (*Typha* spp.). Soils were not analyzed due to tidal inundation.

WETLAND WJ

Wetland WJ is a palustrine broad-leaved deciduous forested saturated wetland (PFO1D) located between the Anacostia River and the proposed trail in the southern portion of the study area. WJ is adjacent to the west bank of the Anacostia River. Wetland hydrology indicators consist of high water table, saturation at four inches, water-stained leaves, and oxidized rhizospheres. The dominant vegetation consists of box elder, American sycamore, green ash, Amur honeysuckle (*Lonicera maackii*), and poison ivy. Soils at this site meet hydric soil indicator F19: Piedmont floodplain soils.

WETLAND WK

Wetland WK is a palustrine broad-leaved deciduous forested saturated wetland (PFO1D) located between the Anacostia River and the proposed trail in the southern portion of the study area. WK is adjacent to the west bank of the Anacostia River. Wetland hydrology indicators consist of high water table, saturation to the surface, water-stained leaves, and oxidized rhizospheres. The dominant vegetation consists of silver maple, American sycamore, Amur honeysuckle, and English ivy (*Hedera helix*). Soils at this site meet hydric soil indicators F19: Piedmont floodplain soils and F20: anomalous bright loamy soils.

WETLAND WM

Wetland WM is a tidal and nontidal palustrine broad-leaved deciduous forested wetland (PFO1) fringing tidal wetlands and mud flats of the Anacostia River. Wetland WM lies just outside the MHW line and partly within the HTL. Wetland hydrology indicators consist of saturation, sediment deposits, drift deposits, and water-stained leaves. The dominant vegetation consists of eastern cottonwood, American sycamore, black willow (*Salix nigra*), box elder, silky dogwood, elderberry (*Sambucus nigra* ssp. *canadensis*), blackberry (*Rubus* spp.), Japanese honeysuckle, and poison ivy. Soils at this site meet hydric soil indicators F3: depleted matrix and F20: anomalous bright loamy soils.

WETLAND WO — WATTS BRANCH

Watts Branch is a perennial stream that flows northwest, combines with a tributary, and continues west into the Anacostia River in the middle section of the study area. Watts Branch is nontidal in the study area. Watts Branch is approximately 25 feet wide and three to six feet deep, has a human-altered channel shape, and has a substrate consisting of silt, cobble, and gravel.

WETLAND WP — KENILWORTH MARSH

Wetland WP is a large tidal wetland that falls within the MHW line and HTL and is located in the central region of the study area. NWI map listings for Kenilworth Marsh include L2EM2N and L1oWV, as well as PFO and PEM areas. Wetland hydrology indicators consist of surface water, high water table, saturation to the surface, water marks, sediment deposits, drift deposits, inundation visible on aerial imagery, and water-stained leaves. The dominant vegetation consists of black willow and cattails. Soil samples were not taken due to tidal inundation.

WETLAND WQ

Wetland WQ is an unnamed perennial tidal/nontidal tributary of the Anacostia River that flows west into the Anacostia River. The channel is straight and may have been previously excavated. WQ has a varied substrate including muck and cobbles.

WETLAND WS

Wetland WS is a small depressional emergent wetland located between Watts Branch and Deane Avenue in the central section of the study area. Wetland hydrology indicators consist of algal mat or crust and water-stained leaves. The dominant vegetation consists of poverty (slender) rush (*Juncus tenuis*) and Oriental lady's thumb (*Polygonum cespitosum*). Vegetation is mowed and the area includes significant bare ground. Soils at this site meet hydric soil indicator F3: depleted matrix.

WETLAND WV

Wetland WV is a small tidal wetland located within the MHW line and HTL of the Anacostia River (WA) adjacent to the Kenilworth Marsh in the middle section of the study area. Hydrology indicators include surface water, saturation, sediment deposits, and drift deposits. The dominant vegetation consists of box elder, green ash, silky dogwood, spicebush (*Lindera benzoin*), day lily, iris, false nettle (*Boehmeria cylindrica*), poison ivy, and Japanese honeysuckle. The soils in this area meet hydric soil indicators F19: Piedmont floodplain soils and F20: anomalous bright loamy soils.

WETLAND WW

Wetland WW is the nontidal PFO fringe of a tidal wetland that is part of the Anacostia River (WA) in the northern section of the study area. WW lies just outside the HTL. Hydrology indicators include surface water, saturation, water marks, sediment deposits, drift deposits, water-stained leaves, and aquatic fauna. The dominant vegetation consists of green ash, box elder, silky dogwood, halberdleaf tearthumb (*Polygonum arifolium*), common reed (*Phragmites australis*), Japanese honeysuckle, and poison ivy. The

soils in this area meet hydric soil indicators F19: Piedmont floodplain soils and F20: anomalous bright loamy soils.

WETLAND WX

Wetland WX is a nontidal and tidally influenced PFO wetland located at the confluence of the Anacostia River (WA) and an unnamed tributary (WY), just south of US 50 and north of the Amtrak rails in the northern section of the study area. WX (PFO1C on NWI mapping) abuts the Anacostia River and its unnamed tributary and continues west outside the study area. WX lies just outside the HTL. Hydrology indicators include surface water, high water table, saturation, water marks, sediment deposits, drift deposits, inundation visible on aerial imagery, water-stained leaves, and aquatic fauna. The dominant vegetation consists of green ash, red maple, silver maple, box elder, sweet woodreed, ground ivy (*Glechoma hederacea*), smartweed (*Polygonum* sp.), and poison ivy. The soils in this area meet hydric soil indicators F3: depleted matrix, F19: Piedmont floodplain soils, and F20: anomalous bright loamy soils.

WETLAND WY

Wetland WY, an unnamed tributary of the Anacostia River (WA), is a tidal stream that flows west into WA in the north section of the study area, just southeast of US 50 and the District/Maryland border. The 30-foot-wide and 5- to 6-foot-deep human-altered channel originates in Maryland. Floodplain forest and wetlands (WX) cover the banks. The northeastern bank and floodplain are narrowed due to the proximity of the US 50 road embankment.

WETLAND WZ

Wetland WZ is a small PFO wetland located between the Anacostia River (WA) and the proposed trail in the middle section of the study area. WZ is adjacent to the east bank of the Anacostia River, tidal traditional navigable waterway feature WA, and within the 100-year floodplain. Hydrology indicators include saturation at 2 inches depth and water-stained leaves. The dominant vegetation consists of silver maple, slippery elm (*Ulmus rubra*), white mulberry, and grape vine. The soils in this area meet hydric soil indicator F20: anomalous bright loamy soils.

VISITOR USE AND EXPERIENCE

Anacostia Park is part of the National Capital Parks – East management area. The park is a multi-use recreation area with more than 5 miles of shoreline along each bank of the Anacostia River. Of the approximately 1.7 million people who visit the park and its facilities annually, more than 80 percent come from Maryland and Virginia (NPS 2004a). The park extends along the banks of the Anacostia River above its confluence with the Potomac River to the District /Maryland boundary line, encompasses parcels at Fort McNair and Buzzard Point, and is adjacent to the U.S. Coast Guard Building.

Anacostia Park offers a wide variety of activities and facilities. Anacostia Park facilities include marinas, a boat launch, an 18-hole tournament golf course and putting range, picnic areas, athletic fields, and trails (NPS 2010a). The current regional trail network is described in chapter 1. Other activities include bird-watching and fishing (which is regulated by the District). The District's Department of Parks and Recreation also operates a swimming pool in the park.

Within the project area, Anacostia Park also includes Kenilworth Park and Aquatic Gardens. A portion of the 180-acre Kenilworth Park site was once used as a landfill (the Kenilworth Park Landfill), but restoration efforts have been initiated and portions are now being used as a multi-purpose recreational area (NPS 2004a). Kenilworth Park also includes the Kenilworth Aquatic Gardens, 14 acres of aquatic plants located on the east bank of the Anacostia River in the park. Kenilworth Aquatic Gardens are known for the expanse of water lilies and lotus that bloom in late May, attracting many visitors (NPS 2010b).

On the western bank of the Anacostia River there is a small dock that provides kayakers and canoeists a location to formally launch or exit the river. Kayakers and canoeists currently utilize the east bank as an area for informal boat launches.

Directly adjacent to the project area on the western side of the Anacostia River is the U.S. National Arboretum. With 9.5 miles of winding roads, the National Arboretum hosts 500,000 visitors annually, offering trails, garden displays, collections, and structures (USDA 2011).

HUMAN HEALTH AND SAFETY

The NPS is committed to providing high-quality opportunities for visitors and employees to enjoy parks in a safe and healthy environment. Furthermore, the NPS strives to protect human life and provide for injury-free visits. Safety applies to both park visitors and park employees.

Kenilworth Park Landfill: The Kenilworth Park Landfill site is located in the Kenilworth Park and Aquatic Gardens on the east side of the Anacostia River, located in the vicinity of the proposed alignment. The landfill is divided into two sections, KPN and KPS. Figure 3-2 displays the general location of both landfills.

From 1942 until 1968, the District operated the Kenilworth Park Landfill on the northern portion of the park (KPN), between Watts Branch (a tributary of the Anacostia River) and the Aquatic Gardens. During this period, the KPN Landfill received municipal waste and incinerator ash. Municipal waste was burned at KPN until 1968, followed by a brief period of landfilling without open burning, before landfill operations moved south of Watts Branch to the southern portion of the entire landfill property (KPS). By the 1970s, the entire landfill (KPN and KPS) had ceased operations and was covered with soil, revegetated, and reclaimed for recreation purposes.

In 1973, the District Department of Parks and Recreation opened the Kenilworth–Parkside Community Center in the northeast portion of KPN, which had been cleared for recreational use; playing fields also were built on the northern and southern portions of KPN. KPS is currently closed to the public.

In late 1998, the NPS began conducting environmental investigations at the landfill to determine what risks, if any, the former landfills may pose to human health or the environment. A number of studies have been conducted since that time by the NPS, the Agency for Toxic Substances and Disease Registry , and the District to determine the nature and extent of contamination associated with the past waste-disposal activities.

The most comprehensive of these studies are the Remedial Investigations conducted by the NPS pursuant to CERCLA. The remedial investigation for KPN was completed in late 2007 and the KPS remedial investigation was completed in June 2008 (NPS n.d.c). Contaminants of potential concern identified by the two remedial investigations include polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons, dieldrin (a pesticide), arsenic, and lead (NPS n.d.c). Both remedial investigations concluded that there is insignificant migration of contamination from the historically deposited wastes to groundwater or surface water (NPS n.d.c).

Supplemental field sampling performed in the fall of 2008 and spring of 2009 indicated no risk from methane gas at either the Kenilworth–Parkside Community Center or Thomas Elementary School (NPS n.d.c).

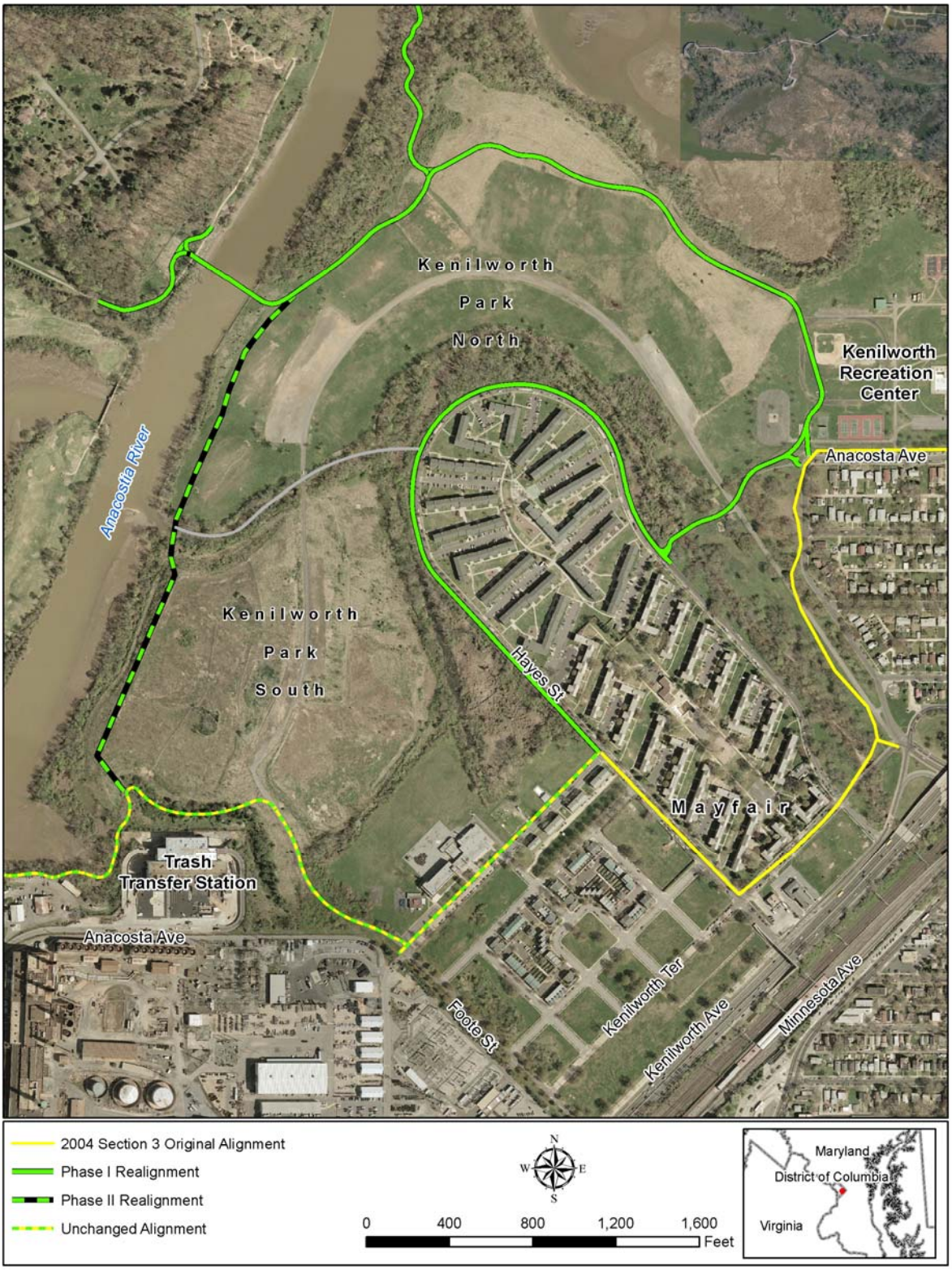

FIGURE 3-2. KENILWORTH PARK LANDFILL NORTH AND SOUTH

The NPS is currently developing a feasibility study to identify and evaluate potential remedial alternatives for contamination at the site. The results from this study will be used to select the final remedy. Due to the similarity and proximity of the two landfills, and to make the process more efficient, a single feasibility study will be completed that will address both KPN and KPS. Completion of the feasibility study is expected by early 2012, followed by a proposed plan (for public review and comment) and a record of decision, which will select the course of action for the site (NPS n.d.c).

NEIGHBORHOODS

Neighborhoods in the area of Section 3 of the ARW Trail east of the Anacostia River have grown in a suburban pattern, often with small enclaves platted out and constructed as residential developments. The District's Office of Planning 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 for all areas of the city (NPS 2004a).

There are five established neighborhoods in the project area (see figure 2-1):

- **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 (NPS 2004a).
- **Mayfair.** Built between 1925 and 1949, Mayfair 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 (NPS 2004a).
- **Eastland Gardens / Kenilworth.** Consisting primarily of single-family detached and semidetached 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 (NPS 2004a).
- **Central Northeast (NE).** Residents of this neighborhood, which includes multiple housing types and styles, have no direct access to the park or waterfront (NPS 2004a).
- **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 (NPS 2004a).

Neighborhood Access: Residents on either side of the river have few routes to the Anacostia waterfront. On the east, a 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, Burroughs (Deane) Avenue, Douglas Street, portions of 40th Street, and portions of Anacostia Avenue. Four of the five neighborhoods in the project area — Kenilworth, Mayfair, Eastland Gardens, and River Terrace — abut Anacostia Park and have direct access to the park via local roads and Anacostia Avenue.

CULTURAL RESOURCES

Section 106 of the NHPA, as amended, and as implemented in 36 CFR 800, requires federal agencies to consider the effects of federally funded, regulated, or licensed undertakings on cultural resources listed in or eligible for inclusion in the National Register; moreover, the federal agency must afford the Advisory Council on Historic Preservation the opportunity to comment in the event that an undertaking will have

an adverse effect on a cultural resource that is eligible for or listed in the National Register. For the purposes of this EA, cultural resources impact topics include cultural landscapes, historic structures and districts, and either recorded or potential historic and prehistoric archeological sites. American Indian traditional cultural properties, ethnographic resources, and museum objects were dismissed as impact topics. The consideration of cultural resources by the NPS meets pertinent requirements of the NHPA and related legislation and implementing regulations.

For this study, efforts to identify cultural resources included a review of information provided by the park, supplemented by interviews with park staff, the District Historic Preservation Office (DC HPO), cultural resource survey data, and other published and unpublished sources. For historic structures and cultural landscapes, the principal sources reviewed were the D.C. Inventory of Historic Sites (DC HPO 2009), National Register nomination forms, and the NPS List of Classified Structures (LCS) database. The LCS contains "information about historic and prehistoric structures in which the NPS has or plans to acquire any legal interest. Properties included in the LCS are either in or eligible for the National Register or are to be treated as cultural resources by law, policy, or decision reached through the planning process even though they do not meet all National Register requirements."

The study area considered for this EA includes the land within the current NPS jurisdiction of Kenilworth Aquatic Gardens and Anacostia Park and the USDA property the National Arboretum. The study area is adjacent to Langston Golf Course, under the jurisdiction of the NPS.

Historical Background: When Captain John Smith explored the Potomac River in 1608, he discovered a thriving Indian village at the junction of the Potomac River and the Anacostia River. The Nacochtank Indians built villages along the shorelines, and it is from the word "anaquash," meaning a village trading center, that the river derives its name. European settlers did not fully begin to claim the land along the Anacostia River until the 1660s. The fertile soil was suitable for tobacco farming and settlers cleared the once forested land and developed farms.

When the site for the capital city of Washington, D.C., was chosen in 1790, the lands along the Anacostia River consisted mostly of plantations used for the cultivation of tobacco and grain. Small and large residences dotted the landscape on land patents dating from the 17th century (Engineering Science, Inc. 1989). In 1792, the Anacostia River, then known as the Eastern Branch (of the Potomac), was already developing as an important part of Pierre L'Enfant's plan for the new federal city. Tobias Lear, the personal secretary of George Washington, wrote the following in his 1793 report *Observations on the River Potomack, the Country Adjacent, and the City of Washington*:

> The eastern branch affords one of the finest harbors imaginable. The channel is generally so near the city, that a wharf extended 40 or 50 feet from the bank, will have water enough for the largest ships to come up, discharge and receive their cargoes. The land on each side of the branch is sufficiently high to secure shipping from any wind that blows . . . while vessels in the main river, if they should be caught there by ice, are liable to receive great injury, and are sometimes totally lost by it, those in branch lay in perfect security. (Lear 1793)

Property owners and businessmen soon constructed wharves along the waterfront, and in 1799 the Navy Yard was built on the western shore of the Anacostia River, which further promoted waterfront development.

Land clearing, farming, and construction activities led to the siltation of the Anacostia River early on and often inhibited transportation. Regular dredging occurred after 1875 and consequently, tidal flats along the river became exposed, along with raw sewage in the mud and grasses. By the end of the 19th century, the flats had become a nuisance and were a health concern due to mosquitoes and pollution (Engineering Science, Inc. 1989).

As early as 1898, Congress authorized the dredging of the Anacostia River and directed that the reclaimed material be placed on the flats "with the objectives of land reclamation, sanitation, and promotion of navigation and commerce" (Gutheim 1977). However, it was the 1901 McMillan Commission, led by Senator James McMillan (Michigan), that set the stage for the development of Anacostia Park to provide gardens and recreational space for public use. Inspired by the City Beautiful movement and L'Enfant's original baroque plan, the commission created a plan to guide the future development of Washington, D.C., toward the City Beautiful aesthetic. In March 1901, the McMillan Plan successfully passed a Senate resolution that developed plans for improvements to the city's park system. The 1902 plans discussed the development of the Anacostia Flats as a park, referred to as the "Anacostia Water Park" (U.S. Congress, Senate 1902).

The USACE began work on dredging the river and filling the flats in 1902 and the project continued until 1925. To sufficiently support the dredged material, a seawall was built along the shoreline (Gutheim 1977, 141). After it was determined that the reclaimed area would be used for public purposes, Congress passed the Anacostia River Flats Act in 1914, providing for the acquisition, reclamation, and development of lands on both sides of the Anacostia River for highway and park purposes. The Commission of Fine Arts' annual report of 1914 identified the park as an "important element in restoring the 'balance in development' that had tended toward the northwest." The park was formally declared Anacostia Park in 1919 (Gutheim 1977). Congress established the National Arboretum in 1927, and the Commission of Fine Arts chose its location upstream from Anacostia Park. In 1933, Anacostia Park was transferred to the NPS, and additional improvements were made, including the construction of Langston Golf Course in 1938.

In 1879, W. B. Shaw, a retired Civil War veteran from Maine, purchased 37 acres of land along the eastern shore of the Anacostia River and in 1882 he began to grow water lilies on the marshy sections of the land. Because the lilies thrived, Shaw created more ponds and began to hybridize the plants. In 1912, Shaw and his daughter, L. Helen Shaw Fowler, began to sell their lilies commercially and shipped thousands of the flowers to New York, Boston, and Chicago. The gardens produced lilies that were not available anywhere else in the United States. Fowler took over the gardens in 1912 and by the 1930s the gardens encompassed 42 pools. By this time, however, the USACE work on the Anacostia River had progressed to the point that the federal government condemned the garden as federal land. Fowler finally agreed to sell the core 8.5 acres of her gardens to the federal government in 1938 and the property was placed under the management of the NPS (Donaldson 2010). Directly southwest of the gardens are the administration building (built in 1912) and two original greenhouses (built in 1913) that were used in the commercial aquatic plant operations. The former Shaw property, now known as the Kenilworth Aquatic Gardens, is the only site in the national park system whose primary purpose is to raise and propagate aquatic plants.

CULTURAL LANDSCAPES

Kenilworth Aquatic Gardens

Kenilworth Aquatic Gardens was listed in the D.C. Inventory of Historic Sites in 1968 and in the National Register in 1978. The property is historically significant as a designed landscape associated with botanical study and the development of water plants. The property meets National Register Criterion B for its association with the lives and persons significant in our past and Criterion C as a significant and distinguishable entity whose components may lack individual distinction. The period of significance begins in 1882, the earliest year that Shaw may have first planted water lilies on the site, and ends in 1938, when the NPS took over the property (Donaldson 2010). The contributing resources of Kenilworth Aquatic Gardens include the lily ponds, the ancient lotus pond, and the remaining original structures: the administration building (Aquatic Garden Visitor Center / Office) and the north and south greenhouses. Recreational structures built after the acquisition of the gardens by the NPS, including the picnic areas, restrooms, and new greenhouses, are not considered historically significant (Dillon 1973). Currently, the

Kenilworth Aquatic Gardens are the only area of Anacostia Park that has structures included in the park's LCS. There are five structures within the gardens that are listed in the LCS database: the Exterior Tanks, Greenhouse 1, Greenhouse 2, the Administration Building, and the Ponds and Dikes (figure 3-3).

FIGURE 3-3. KENILWORTH AQUATIC GARDENS

In 2010, the NPS approved a Cultural Landscape Inventory (CLI) of the Kenilworth Aquatic Gardens (Donaldson 2010). The CLI includes a history of the site, existing conditions, an analysis of the site's significance and integrity, a discussion of landscape characteristics, and a list of contributing and noncontributing resources to the Kenilworth Aquatic Gardens cultural landscape, which are provided in table 3-2.

TABLE 3-2. KENILWORTH AQUATIC GARDENS CULTURAL LANDSCAPE INVENTORY CONTRIBUTING LANDSCAPE FEATURES

Contributing Landscape Features	
Topography	Anacostia floodplain Raised ground in the vicinity of the building complex
Circulation	All pond paths except those between ponds 10, 12, 15, 16, 17, 19, and 20 Dirt lane around the perimeter of the ponds and past the west side of the building complex Lane leading from Anacostia Avenue to main greenhouse, past the Helen Fowler site Access leading east from the ponds, cutting between the administration building and hothouse 3

Contributing Landscape Features	
Constructed water features	All ponds except ponds 10, 12, 15, 16, 17, 19, and 20 Galvanized iron pipes Dikes between ponds 10, 12, 15, 16, 17, 19, and 20
Views and vistas	Views across pools w/ varied vegetation types, w/ some screening and shade from trees Views almost entirely obscured by hedges of lotus Views looking north and south with woodlands in distance Views looking west with wetlands in the distance
Spatial organization	Arrangement of all ponds except ponds 10, 12, 15, 16, 17, 19, and 20 Arrangement of three concrete pools east of the hothouses and the administration building Arrangement of two smaller concrete pools along the road east of the gardens Building complex, including the administration building and three hothouses
Buildings and structures	Two-story portion of the administration building Hothouses 1, 2, and 3 Display pools 1, 2, 3, A, B, and C
Vegetation	Weeping willows, willow oaks, and bald cypress Iris Holly tree, cherry tree, and two dogwood trees north of hothouse 1
Land use	Recreational use of the gardens Horticultural use of the hothouses, the ponds, and display pools
Small-scale features	Wooden boats Cement garden benches, rustic wooden benches

The Kenilworth Aquatic Gardens consist of 8.5 acres of land on the edge of a marsh along the eastern banks of the Anacostia River. The CLI boundaries of the gardens run along the northern, western, and southern boundaries of the historic pools and include the building complex east of the ponds. Here, the boundary extends east to Anacostia Avenue. The boundary does not include the cluster of seven small ponds in the southwestern corner of the complex, because these ponds were constructed in the late 1940s and early 1950s, outside the period of significance. Thus, the CLI boundary of Kenilworth Aquatic Gardens encompasses the grounds as they existed in 1938, when the NPS acquired the property.

The CLI states that the lands adjacent to the Kenilworth Aquatic Gardens contribute to their cultural landscape. The gardens are bordered on three sides by the restored marshlands of Kenilworth Marsh, a part of Kenilworth Park (shown in figure 3-4). The preservation of the marshland is in part a result of the neighboring aquatic gardens. The Anacostia Flats, the level floodplain lining the river, were largely eliminated during the late 19th and early 20th centuries by the dredge and fill performed by the USACE. However, the area that became Kenilworth Park and Aquatic Gardens was for the most part left untouched, partly because the marsh played a crucial role in feeding water into the garden ponds. (Donaldson 2010).The CLI notes, however, that footpaths and boardwalks currently in the marsh provide "easy access to the more formal gardens, and it is common for visitors to wander fluidly from one context

to the other. Together, the marsh and the gardens are thus two components of a carefully integrated whole whose production stems from the subtle interplay of biological, cultural, and historic factors" (Donaldson 2010). Thus, Kenilworth Marsh contributes to the significance of the Kenilworth Aquatic Gardens.

FIGURE 3-4. KENILWORTH MARSH

HISTORIC STRUCTURES AND DISTRICTS

Historic structures and districts in the study area include the U.S. National Arboretum and Anacostia Park itself. Adjacent to the study area is the Langston Golf Course Historic District. The National Arboretum, the Langston Golf Course Historic District, and the Kenilworth Aquatic Gardens are listed in the National Register. Anacostia Park as a whole has been determined eligible for the National Register. Kenilworth Gardens is also considered to be a cultural landscape.

Anacostia Park

The NPS considers Anacostia Park to be eligible for the National Register as a historic district because of its association with historic events including the 1932 Bonus Army marches and the desegregation movement, its design and architecture as a part of the McMillan Plan, the reclamation and construction of the seawall by the USACE, the construction of park facilities by Works Progress Administration (WPA) workers, and its potential for yielding both prehistoric and historic archeological sites. The DC HPO has not formally concurred with this determination, but for the purposes of this EA, the park is considered National Register eligible as a result of documentation and comments made by the NPS and DC HPO with regard to the South Capitol Street EA (Parsons Brinckerhoff 2008). No formal historic district boundaries for the resource have been established; however, preliminary boundaries coincide with the current park boundaries.

Four additional structures, sites, and objects located in Anacostia Park may be eligible for the National Register, but have not been formally evaluated by the park:

- Anacostia Field House

- Anacostia River Seawall
- Bonus Marchers Campsite
- Stones of the Old United States Capitol Building

The Anacostia River Seawall is located within the study area boundaries. If this resource could be affected by either of the alternatives considered for proposed project, it should be evaluated for National Register eligibility, so that impacts can be appropriately assessed. A description of the Anacostia River Seawall follows.

Anacostia River Seawall

The Anacostia River Seawall, which lines both sides of the Anacostia River, is the result of a 50-year program implemented by the USACE in 1891 due to health and flooding issues associated with the condition of the river. As funding was made available through congressional appropriations, the USACE dredged the river and filled the marshland that was known as the Anacostia Flats. To properly support the fill, a seawall was constructed along the shoreline of the river. Construction of the seawall along the Anacostia River proved to be more difficult than the seawall constructed on the Potomac, because the soil was considerably softer. In 1892, funds had been exhausted, yet only a small portion of the Anacostia River Seawall had been constructed. Construction resumed in 1902 and the USACE drew from its experience on the Potomac River by placing riprap in trenches above the waterline to allow for settling.

The riprap base of the Anacostia River Seawall measured approximately 40 feet wide and 10 feet high. The top width of the trapezoidal riprap wall was approximately 23 feet. As the riprap settled, additional riprap was added to maintain the elevation of the top. Once the riprap had been in place "as long as possible," the top was leveled off at mean low water and a masonry wall set in concrete mortar was constructed. Because dredged material from the seawall trench and the navigation channel was insufficient to fill the embankments, "private persons and organizations were allowed to dump waste, ashes, and other unspecified materials to provide additional bulk" (Overbeck 1985). The riprap base of the wall was built mostly of salvaged stone from demolished structures, including the Old Navy Yard Bridge.

In 1913, the USACE began using concrete blocks for the lower course of the seawall. The blocks were molded by hired labor and were composed of one part cement, three parts sand, and six parts gravel. Settlement was a major problem for the Anacostia River Seawall and by 1915, the USACE constructed pile grillage in the more unstable areas. Construction of sections of the seawall continued through World War II.

The Anacostia River Seawall continues from Buzzard's Point to the District/Maryland border. The wall is considered historically significant as an expression of the reclamation project that created Anacostia Park.

United States National Arboretum (USDA)

Congress established the U.S. National Arboretum in 1927. Washington, D.C., was seen as an ideal site for a national arboretum because of its numerous visitors, large scientific community, and its hospitable climate due its location between the northern and southern United States. The original property consisted of 189 acres, purchased in 1928. The property was enlarged by 196 acres in 1934, and subsequent acquisitions between 1938 and 1949 enlarged the property to 412 acres. Currently, the National Arboretum consists of 446 acres with 9.5 miles of winding roadways (Gerson 1972; USDA 2011).

Proposals for a national arboretum in Washington, D.C., date from as early as the McMillan Commission of 1901. After the elimination of the Botanic Gardens from the National Mall in the 1920s, the desire for an arboretum regained momentum. The Commission of Fine Arts, the successor of the McMillan Commission, chose the site for the new arboretum. Frederick Law Olmsted, Jr., was a member of the Commission of Fine Arts Advisory Council and was directly involved in the planning of the arboretum.

Thus, the National Arboretum is "the last in a long line of Olmsted connected undertakings in the District, a succession which includes every major park project since Olmsted Sr.'s work on the Capitol Grounds in the 1870s" (Gerson 1972).

Development of the National Arboretum during its formative years was slow. The Civilian Conservation Corps cleared brush, prepared soil, built ponds, and constructed six bridges during the 1930s; however, additional work was not completed until after World War II. A master plan was completed in 1948–1949. Construction on the permanent road system began in 1949 but was not completed until 1958. Greenhouses were constructed by 1962 and the administration/laboratory building (now the administration building / visitor center) was built in 1964. The Washington, D.C., architectural firm of Deigert and Yerkes designed the building and received an American Institute of Architects (AIA) award for their efforts (Gerson 1972).

The National Arboretum was listed in the District Inventory of Historic Sites in 1968 and in the National Register of Historic Places in 1973. The world-renowned institution is a major element of the city's park system and an important contribution of the Commission of Fine Arts. It is significant for its association with noted landscape architect Frederick Law Olmsted, Jr., and as one of the largest urban arboretums in the country. It serves as a repository for international gifts, is the site of the Latrobe columns from the U.S. Capitol's East Portico, and contains significant archeological remains. Major collections include the Morrison Glen Dale Azalea Garden, Gotelli Dwarf Conifer Collection, National Boxwood Collection, National Bonsai and Penjing Museum, National Grove of State Trees, National Herb Garden, and other plantings of native and nonnative trees, shrubs, and perennials (Gerson 1972; DC HPO 2009).

Langston Golf Course Historic District

The Langston Golf Course (known today as Langston Legacy Golf Course) opened in 1939 after a long campaign by African-American golfers to gain access to local golfing facilities. The facility, named after John Mercer Langston, the first African-American elected to public office in 1855, was originally built under the WPA program as a segregated golf facility for African-American golfers. In 1938, the *Washington Post* reported:

> Transformation of a mosquito-infested 36-acre tract of waste land in Anacostia Park adjoining Benning Road and Kingman Marsh into a golf course and recreation center for colored citizens is nearing completion by WPA workers. . . "(*Washington Post* 1938).

Although originally planned as an 18-hole course, limited funding only allowed for an initial nine holes to be built. The course was finally expanded in 1955, when it was enlarged to 18 holes. Langston Legacy Golf Course has been the home course of the nation's first golf clubs for African-American men (the Royal Golf Club) and women (Wake Robin Golf Club). Langston is also home of the international Pro-Am tournament, the Capitol City Open, an event that has attracted many African-American professional golfers. Today the course retains most of its original layout, both the original nine holes and the nine holes that were added in 1955; however, minor changes have been made to accommodate playing conditions. The landscape character of the golf course along the river contributes to the qualities that make the site eligible for its listing on the National Register (Cole 1989; Langston Junior Boys and Girls Golf Club 2009).

Langston Golf Course was listed in the National Register in 1999. Langston Golf Course Historic District is significant because of its "symbolic association with the development and desegregation of public golfing and recreational facilities in the greater District area and with the growth of golf as a popular recreational and professional sport for African-Americans" (Cole 1989). It is also significant as the home course of the Royal Golf Club and the Wake Robin Wake Club. The clubs were the first African-American golf clubs for men and women established in the U.S. and played an important role in the

development of Langston Golf Course and the desegregation of the District's golf clubs. Additionally, the Langston Golf Course Historic District is also significant for its association with Harold L. Ickes, Secretary of the Interior (1933–1941), and his efforts to open all NPS facilities to African-American citizens (Cole 1989).

The golf course's entire landscape in the parkland setting is a contributing feature of the historic district. As a whole, the district consists of 145 acres on a man-made landscape of grassy, undulating terrain. The district's boundaries include the Anacostia River on the east and Benning Road on the south. The complex western boundary consists of 26th Street, Spingarn High School, I Street, and 22nd Street. The northern boundary includes Maryland Avenue, M Street, and the southern boundary of the National Arboretum. Noncontributing features include the 1955 clubhouse, a 1977 maintenance shed, a 1985 driving range hut, the 1954 and 1977 bridges over Kingman Marsh, and the remnant of the miniature golf course built in the 1950s (Cole 1989). No structures in the Langston Golf Course are listed in the LCS.

ARCHEOLOGICAL RESOURCES

For this study, efforts to identify archeological resources included a review of studies and databases maintained by the NPS and the DC HPO, along with a review of general literature concerning the archeology of the District of Columbia. There is no modern archeological overview for Anacostia Park, but information is available in reports and investigations that have been conducted over more than a century of archeological study. Archeological sites were identified as early as the 1880s in what are now park lands, but urbanization and landfilling has made it difficult to investigate these sites in modern times. Because there is no modern archeological overview and assessment for Anacostia Park and many of the existing studies are quite old, there is a lack of reliable locational information for archeological resources in the park. It is assumed that many of the sites recorded in the late 19th and early 20th centuries were based on surface collections in plowed fields. In modern times, these sites may have become buried beneath flood-deposited sediments, river-bottom dredgings, or landfill deposits.

As early as the late 1800s, investigations along the lower Anacostia River yielded an abundance of aboriginal material culture. Local landowners amassed substantial collections of aboriginal artifacts, which sparked an interest in local prehistory. This growing interest resulted in the formation of the Anthropological Society of Washington in 1870. Members of this group and other amateur archeologists began to investigate the Anacostia area more intensively for evidence of its earliest inhabitants.

S.V. Proudfit, an active member in the Anthropological Society of Washington who was among the more diligent 19th-century collectors, identified many of the sites in the park. He was also one of the first explorers of the region to speculate about the location of the village of Nacochtank. Based on Captain John Smith's 1608 map and description of the village, Proudfit postulated that several sites he identified on the east bank of the Anacostia might be the remains of the village (Proudfit 1889). Proudfit's mapping of then-known sites in the District shows six village sites along the Anacostia River between Benning Road and the District/Maryland border.

William Henry Holmes, of the United States National Museum (now the National Museum of Natural History) in the late 19th and early 20th centuries, was another pioneer in the study of local prehistory. Like Proudfit, Holmes speculated on the location of the village of Nacochtank, but concluded that it could be located anywhere along the east bank of the Anacostia River from Giesboro Point to the vicinity of the present-day Benning Bridge (Holmes 1889).

In the late 1950s, Howard A. MacCord provided a summary of prior archeological work in the Anacostia River Valley and briefly reported on the excavation of a site near Kenilworth, Maryland. Drawing on earlier reports and unpublished sources, he observed that aboriginal sites had been identified throughout the Anacostia River Valley but had been virtually destroyed by modern urban development, particularly along the lower reaches of the river. MacCord noted that the major pottery-producing sites were concentrated along the east (or left) bank of the river (present-day Anacostia Park), and that the sites

located along the tributary streams usually lacked pottery but did contain stone tools typical of the Archaic period (MacCord 1957).

Many of the artifacts gathered by the early collectors are now housed in the National Museum of Natural History (now the Smithsonian Institution), but since most collectors kept no records, there are no data to place these objects in context. In the 1960s Bruce Powell attempted to establish the site locations for corresponding collections held by the Smithsonian Institution, and many of these site locations are now known by the letters "BP." Approximately 45 sites have been identified and given site numbers along the Anacostia River, including 26 in Anacostia Park. For many of these sites, only limited information is available, and the precise locations and conditions of many of the sites are unknown. A list of these sites whose locations are near the project area, along with as much information about the site types and dates as could be found, appears in table 3-3.

TABLE 3-3. ARCHEOLOGICAL RESOURCES IN STUDY AREA VICINITY

Site Number and Name	Description	National Register Status
51NE001 (Kenilworth)	Prehistoric village with Woodland period ceramics near Beaverdam Creek; partially excavated by MacCord (1957); MacCord gives size as 1 acre; noted by Hume (1975) to cover several acres on sandy terrace above Beaverdam Creek; correlates with Hume's site GWU 1 and BP-11; site location has not been verified in modern times	Unevaluated
51NE007	Prehistoric site; correlated by Hume (1975) to BP-14; reportedly covered by 2 to 3 feet of fill; site location has not been verified	Unevaluated
51NE008	Prehistoric site located near PEPCO plant; correlated by Hume (1975) to BP-15; site location has not been verified	Unevaluated
51NE012	Prehistoric village site, first recorded in late 19th century; site location has not been verified	Unevaluated
51NE017 Hoffman's	Prehistoric site located at Aquatic Gardens; contains Woodland period ceramics; estimated by Hume to cover 10 to 12 acres; Hume's (1975) site form (GWU 3) correlates this with BP-12; site location has not been verified	Unevaluated
51NE019	Prehistoric site located near Mayfair Terrace (former race course); incorrectly mapped by Hume (1975); may correlate with BP-13	NA
Redbank	Site noted by Hume (1975) near Kenilworth Aquatic Gardens	Unevaluated

NA = not applicable.

A survey of the Anacostia Force Main traversed much of Anacostia Park, although sampling a very narrow corridor. That study (Hume 1975), undertaken by Gary Hume of George Washington University, attempted to correlate earlier site locations with the actual finds, drawing on source material located in numerous research institutions in the metropolitan area, including the Smithsonian Institution, the Potomac River Archaeological Survey (located at American University), and the NPS, with varying degrees of success. Hume has detailed the difficulty of establishing site locations and the numerous apparent plotting errors that had accumulated over a century of archeological investigation. In the section between New York Avenue and Benning Road, Hume noted the concentration of material in the Benning Road / PEPCO plant area and suggested that this was the likely location of the village of Nacochtank. Hume documented other sites between Benning Road and New York Avenue and attempted to correlate them to sites identified by Proudfit and Powell. Some of the site locations established by Hume have been revised based on the use of historical maps that were unavailable to Hume.

A survey of the District's Department of Parks and Recreation playgrounds included a survey of the Kenilworth–Parkside Recreation Center, which abuts the Kenilworth Aquatic Gardens. The area was

considered to have high potential for prehistoric sites, although the fieldwork was limited to a surface survey. Nothing of interest was found, but additional testing was recommended for this property (Henley 1984).

Planning studies for the Barney Circle transportation project led to a number of archeological studies in Anacostia Park, including an overview that attempted to identify archeologically sensitive areas in the park. The study area included park land on both sides of the Anacostia River from the 11th Street bridges upstream to the Benning Road Bridge. The study did note that much of the park along the east side of the river has a very high potential to yield prehistoric archeological resources in primary contexts (Bromberg et al. 1989). Unfortunately, this study did not cover the area between Benning Road and New York Avenue /Route 50 that is the focus of the present study (Bromberg et al. 1989).

A number of archeological studies have been completed at the U.S. National Arboretum property, which partially lies in the study area for this EA, covering the west side of the Anacostia River. A preliminary archeological assessment was completed for a the entire 444-acre property, which identified some 32 potential historic site locations along with Site 51NE012; this study (Geidel 1993) was generally limited to archival research, with fieldwork limited to a walkover examination to inspect the topography for evidence of disturbance. Site 51NE012 is of the greatest interest to the present undertaking, because it was located along the Anacostia River shoreline somewhere in the vicinity of Langston Golf Course and the National Arboretum. Geidel (1993) reports the site location as being within arboretum property, but its exact location or condition was not verified by field testing.

Virtually all the archeological work that has been done in the study area predates modern mapping techniques, especially GIS. Without current site locational information and the lack of recent field survey data, it is not possible to establish accurate information on the location and condition of archeological resources in the study area. It is clear that the study area was once a favored occupation area for American Indian groups. Unlike the lower sections of Anacostia Park, the eastern shoreline of the Anacostia River between Benning Road and New York Avenue has changed relatively little since the late 19th century, judging from maps published in the late 19th century (U.S. War Department 1864; U.S. Coast and Geodetic Survey 1888). Modern development has undoubtedly destroyed some of the archeological sites that have been documented in this area, but it is also likely that some archeological resources are still preserved here.

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

This "Environmental Consequences" chapter analyzes both beneficial and adverse impacts that would result from implementing either of the alternatives considered in this EA. This chapter also includes definitions of impact thresholds (e.g., negligible, minor, moderate, and major), methods used to analyze impacts, and the analysis methods used for determining cumulative impacts. As required by the CEQ regulations implementing NEPA, a summary of the environmental consequences for each alternative is provided in table 2-1, which can be found in "Chapter 2: Alternatives." The impact topics presented in this chapter, and the organization of the topics, correspond to the resource discussions contained in "Chapter 3: Affected Environment."

GENERAL METHODOLOGY FOR ESTABLISHING IMPACT THRESHOLDS AND MEASURING EFFECTS BY RESOURCE

The following elements were used in the general approach for establishing impact thresholds and measuring the effects of the alternatives on each resource category:

- General analysis methods as described in guiding regulations, including the context and duration of environmental effects
- Basic assumptions used to formulate the specific methods used in this analysis
- Thresholds used to define the level of impact resulting from each alternative
- Methods used to evaluate the cumulative impacts of each alternative in combination with unrelated factors or actions affecting park resources
- Methods and thresholds used to determine whether impairment of specific resources would occur under any alternative

These elements are described in the following sections.

GENERAL ANALYSIS METHODS

The analysis of impacts follows CEQ guidelines and Director's Order 12 (NPS 2001) procedures and incorporates the best available information applicable to the region and setting, the resources being evaluated, and the actions being considered in the alternatives. For each impact topic addressed in this chapter, the applicable analysis methods are discussed, including assumptions and impact intensity thresholds.

ASSUMPTIONS

Several guiding assumptions were made to provide context for this analysis. These assumptions are described below.

Geographic Area Evaluated for Impacts (Area of Analysis). The geographic study area (or area of analysis) for this assessment is the project area outlined in figure 2-1, the Kenilworth Park section of Anacostia Park. The area of analysis may extend beyond the park's boundaries for some cumulative impact assessments. The specific area of analysis for each impact topic is defined at the beginning of each topic discussion.

IMPACT THRESHOLDS

Determining impact thresholds is a key component in applying NPS *Management Policies 2006* (NPS 2006) and Director's Order 12 (NPS 2001). These thresholds provide the reader with an idea of the intensity of a given impact on a specific topic. The impact threshold is determined primarily by

comparing the effect to a relevant standard based on applicable or relevant/appropriate regulations or guidance, scientific literature and research, or best professional judgment. Because definitions of intensity vary by impact topic, intensity definitions are provided separately for each impact topic analyzed in this document. Intensity definitions are provided throughout the analysis for negligible, minor, moderate, and major impacts. In all cases, the impact thresholds are defined for adverse impacts. Beneficial impacts are addressed qualitatively.

The potential impacts of both alternatives are described in terms of type (beneficial or adverse); context; duration (short or long-term); and intensity (negligible, minor, moderate, or major). Definitions of these descriptors are provided below.

Beneficial: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.

Adverse: A change that declines, degrades, and/or moves the resource away from a desired condition or detracts from its appearance or condition.

Context: The affected environment within which an impact would occur, such as local, parkwide, regional, global, affected interests, society as whole, or any combination of these. Context is variable and depends on the circumstances involved with each impact topic. As such, the impact analysis determines the context, not vice versa.

Duration: Short-term impacts would occur during the implementation of the alternative (i.e., for the action alternative, during trail construction, including all phases); long-term impacts would extend beyond implementation of the alternative. The duration would be the same for all impact topics, with the exception of archeology. For archeology, the duration is provided within that section.

Intensity: Because definitions of impact intensity (negligible, minor, moderate, and major) vary by impact topic, intensity definitions are provided separately for each impact topic analyzed.

CUMULATIVE IMPACTS ANALYSIS METHOD

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

Cumulative impacts were determined by combining the impacts of the alternative being considered with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects and plans at Anacostia Park and, if applicable, the surrounding area. Table 4-1 summarizes these actions that could affect the various resources at the park, along with the plans and policies of both the park and surrounding jurisdictions, which were discussed in chapter 1. Additional explanation for most of these actions is provided in the narrative following the table.

The analysis of cumulative impacts was accomplished using four steps:

Step 1 — Identify Resources Affected. Fully identify resources affected by either of the alternatives. These include the resources addressed as impact topics in chapters 3 and 4 of this document.

Step 2 — Set Boundaries. Identify an appropriate spatial and temporal boundary for each resource. The temporal boundaries selected were approximately three years in the past (all other past actions would be

reflected in the affected environment descriptions), and reasonably foreseeable actions up to about five years in the future. The spatial boundary or study area for each impact topic is listed under each topic.

Step 3 — Identify Cumulative Action Scenario. Determine which past, present, and reasonably foreseeable future actions to include with each resource. These are listed in table 4-1 and described below.

Step 4 — Cumulative Impact Analysis. Summarize impacts of these other actions (x) plus impacts of the proposed action (y), to arrive at the total cumulative impact (z). This analysis is included for each resource in this chapter.

TABLE 4-1. CUMULATIVE IMPACTS ANALYSIS SUMMARY TABLE

Impact Topic	Study Area	Past Actions	Present Actions	Future Actions
Soils	Project area of Anacostia Park and the immediate vicinity	Completion of Section 2 of the ARW Trail	Construction of Section 1 of the ARW Trail, CSO project	Kenilworth Park Landfill remediation
Vegetation	Project area of Anacostia Park and the immediate vicinity	Completion of Section 2 of the ARW Trail	Construction of Section 1 of the ARW Trail, CSO project	Kenilworth Park Landfill remediation
Wildlife and Wildlife Habitat	Project area of Anacostia Park and the immediate vicinity	Completion of Section 2 of the ARW Trail	Construction of Section 1 of the ARW Trail; Anacostia Watershed Restoration Plan	Anacostia Watershed Restoration Plan
Wetlands	Project area of Anacostia Park and the immediate vicinity	Completion of Section 2 of the ARW Trail	Construction of Section 1 of the ARW Trail; Anacostia Watershed Restoration Plan	Anacostia Watershed Restoration Plan
Visitor Use and Experience	Project area of Anacostia Park and the immediate vicinity	Completion of Section 2 of the ARW Trail	Construction of Section 1 of the ARW Trail, CSO project	Kenilworth Park Landfill remediation; AWI projects
Human Health and Safety	Project area of Anacostia Park and the immediate vicinity	None	None	Kenilworth Park Landfill remediation; Anacostia Watershed Restoration Plan; Poplar Point CERCLA activities
Neighborhoods	Project area of Anacostia Park and the immediate vicinity	Completion of Section 2 of the ARW Trail	Construction of Section 1 of the ARW Trail	Kenilworth Park Landfill remediation; AWI projects
Cultural Landscapes	Project area of Anacostia Park and the immediate vicinity	None	None	Poplar Point redevelopment; 11th Street bridges project
Historic Structures and Districts	Project area of Anacostia Park and the immediate vicinity	None	None	Poplar Point redevelopment; 11th Street bridges project
Archeological Resources	Project area of Anacostia Park and the immediate vicinity	None	None	None

The following past, present, and reasonably foreseeable future actions at Anacostia Park or in the surrounding area have been identified as having the potential to affect the resources evaluated in this EA:

- Anacostia Waterfront Initiative (ongoing). The AWI is a multi-agency effort to revitalize the areas around the waterfront of the Anacostia River by creating a hub of economic development and bringing thousands of new jobs, residents, and visitors to the area. No additional projects are currently scheduled for this project area, but the ARW Trail is part of the AWI.
- CERCLA response actions at Kenilworth Landfill (feasibility study expected in early 2012).
- Combined Sewer Overflows (CSO) (ongoing). In accordance with EPA guidelines, the District is implementing a plan to reduce CSO overflows to achieve zero overflows and improve that water quality of the Anacostia River. To accomplish this plan, the District is undergoing a complete sewer separation to eliminate combined sewers. This process involves construction, including trenching, throughout Anacostia Park with a major construction location along Section 2 of the ARW Trail.
- Anacostia Watershed Restoration Plan (ongoing). The restoration plan examines the entire Anacostia Watershed and subwatersheds to identify specific projects in order to improve the quality of the Anacostia River.
- Reconstruction of Kenilworth Avenue NE (I-295) at Foote Street. Bridges were placed over Burroughs Avenue and Watts Branch (completed 2009).
- Completion of Sections 1 and 2 of the ARW Trail (ongoing).
- 11th Street bridges project. DDOT is replacing the two existing 11th Street bridges with three new bridges. Construction began in 2009 and will be completed by 2013.
- CERCLA response actions at Poplar Point. The Poplar Point section of Anacostia Park has been slated for transfer to the District. The NPS is currently working with the District to conduct remedial investigations to characterize present environmental conditions. A comprehensive site investigation will be implemented in 2012.
- Poplar Point redevelopment. After the completion of CERCLA activities, the relocation of NPS and U.S. Park Police Headquarters at Poplar Point in Anacostia Park is proposed. Redevelopment would include transferring 110 acres of NPS property to the District and would include 70 acres of parkland in perpetuity.

SOILS

METHODOLOGY AND ASSUMPTIONS

Potential impacts were assessed based on the extent of disturbance to soils, including natural, undisturbed soils; the potential for soil erosion resulting from disturbance; and limitations associated with the soils. Analysis of possible impacts on soils were based on on-site inspection of the resource in the project area, review of existing literature and maps, information provided by the NPS and other agencies, and professional judgment. This section assesses the potential effects of the proposed trail on soils in the project area.

STUDY AREA

The geographic study area for impacts on soils is contained within the boundaries of the proposed trail as well as associated areas that would be used for construction staging areas for equipment and supplies. It is expected that construction activities would not occur outside these areas. The study area for cumulative

analysis includes the project area in Anacostia Park and immediately adjacent areas around the project area.

IMPACT THRESHOLDS

Analyses of the potential intensity of impacts on soils were derived from available information on Anacostia Park and the professional judgment of the park staff. The following thresholds were used to determine the magnitude of impacts on soils:

Negligible: The action would result in a change to soils, but the change would be so small that it would not be of any measurable or perceptible consequence.

Minor: The action would result in a change to soils, but the change would be small and localized and of little consequence. Mitigation would be needed to offset adverse impacts, would be relatively simple to implement, and would likely be successful.

Moderate: The action could result in a change to soils; the change would be measurable and of consequence. Mitigation measures would be necessary to offset adverse impacts and would likely be successful.

Major: The action would result in a noticeable change to soils; the change would be measurable and would result in a severely adverse impact. Mitigation measures to offset adverse impacts would be needed and would be extensive, and their success would not be guaranteed.

IMPACTS OF ALTERNATIVE A: NO ACTION

Under alternative 1, the continuation of current management, the current conditions in the project area would continue. There would be no grading or excavation of soils or removal of vegetation as a result of this alternative, visitors would continue to use existing trails, and the majority of the riverfront along the project area would remain inaccessible to visitors. Implementation of the no action alternative would result in no impacts on soils.

Analysis

The no action alternative represents the current conditions in the project area, with limited and discontinuous bicycle and pedestrian access between the riverfront and adjacent communities. Under the no action alternative, Section 3 of the ARW Trail would not be constructed and the use of the existing trails would result in no modification to the soils in the project area at Anacostia Park. The only riverfront access in the project area is the River Trail, which is an existing, well-defined footpath located along the Anacostia River in the Kenilworth Aquatic Gardens. Otherwise, the majority of the project area in the park is not easily accessible to visitors. Natural areas in the project area remain mostly undisturbed by human activities. There is no evidence of social trails in the project area. There would be no grading or excavation of soils or removal of vegetation as a result of this alternative. The implementation of the no action alternative would result in no impacts on soils.

Cumulative Impacts

Since no impacts are projected under the no action alternative, no cumulative impacts would occur.

Conclusion

The implementation of the no action alternative would not result in impacts on soils in the project area, as there would be no modifications to these resources. There would be no cumulative impacts.

IMPACTS OF ALTERNATIVE B: REALIGNMENT OF SECTION 3

Analysis

Under alternative B, the park would construct a new multi-use trail (Section 3 of the ARW Trail) and make enhancements to existing bicycle and pedestrian facilities in two phases. Phase I would use portions of the existing roadway network and traverse the KPN Landfill. Phase II would traverse the KPS Landfill after the completion of CERCLA remediation activities for this area of the landfill before implementation.

The typical construction (e.g., the width, material, and landscaping) for the trail would vary by location. In areas that are currently maintained as turf, the section would consist of a 10- to 12-foot-wide asphalt path that would meander around existing trees and wetlands. In the areas of the proposed trail alignment near the existing trash transfer station and in the KPN Landfill, the trail would be elevated using 1-2 feet of imported fill material placed on existing grade. A gentle slope would be used from the trail to the existing grade, and the width of the trail would be 10 to 12 feet. In environmentally sensitive areas, such as wetlands and river edges, the walkway would be constructed as a boardwalk. Other portions of the trail would include reconstructing existing roadways or constructing the trail in existing sidewalk areas. Soils would be affected in areas of construction as described below.

Phase I

In preparation for construction activities in areas currently maintained as turf or natural vegetation, heavy machinery would be used to remove the top layers of soil. The paved sections of the trail would be 10 inches deep and would be placed at grade. Clearing and grubbing to prepare the sites would be approximately 1 foot in grassy areas and approximately 3 feet in areas with substantial tree roots. Areas with inadequate subgrade would have approximately 12 inches of undercut below the pavement box. The undercut areas would then be replaced with 12 inches of graded aggregate base on a layer of geotextile.

As a result of construction activities, soils in the area of construction would be compacted, the soil layer structure would be disturbed and modified, and soils would be exposed, increasing the overall potential for erosion. A temporary decline in soil productivity would be expected in disturbed areas; however, this impact would be corrected after mitigation measures are implemented. Soil productivity would be completely eliminated for those areas within the footprint of the new trail, resulting in long-term minor adverse impacts. The construction of the trail in these sections would have localized short- and long-term minor adverse impacts on soils in the project area.

Short-term minor adverse impacts to soils would be mitigated through the use of best management practices to prevent and control soil erosion and sedimentation during the construction of the trail. In area of potential or known soil contamination, the trail would be above grade and no disturbance of soils would occur. Construction activities would also adhere to an approved erosion- and sediment-control plan. Areas damaged outside the proposed trail would be actively reseeded and mitigation measures would be implemented to stabilize the soil, repair compaction, and/or improve soil productivity.

In environmentally sensitive areas, the trail would be constructed as a boardwalk. Activities associated with construction of the boardwalk would result in short-term negligible adverse impacts on soils in the areas immediately adjacent to where construction activities would take place. New pilings would be installed to create the boardwalk, which may require vehicle or work crews to drive or place equipment off road. After these activities are completed, damaged or exposed soils would be mitigated by revegetating the affected area. Soils that are rutted would be filled in, and compressed soils would be aerated. As a result, activities associated with installing the boardwalk portion of the trail would have short-term negligible adverse impacts on soils in the project area.

In sections where the trail would be located on existing roadways or existing sidewalks, such as the trail section near Hayes Street, no impacts on soils would be expected. Soils in these areas are already covered with concrete, asphalt, or other man-made surfaces. In areas where the roadway could be reconstructed to

include the new trail, such as the area around Anacostia Avenue, the removal of the existing roadway and pavement would expose underlying soils. However, soil exposure would be temporary, because the areas would once again be covered with asphalt from the construction of the trail. Impacts on soils in these areas would be localized, short-term, minor, and adverse.

In addition, phase I would include the construction of a small dock and bridge over the Anacostia River to the U.S. National Arboretum in Kenilworth Park. The impacts from the construction of the trail on the west bank of the river would be similar to those from the construction of the trail on the east bank. Adverse impacts on soils from the construction of the bridge and dock would be localized, short and long-term, and negligible because the soil affected by the bridge construction is already inundated with water from the Anacostia River and therefore the soil has no productivity.

Phase II

The alignment under phase II would avoid the use of any existing streets and would continue the ARW Trail along the east bank of the Anacostia River. This trail alignment would be located in areas that are currently maintained as mowed lawn or meadow in the vicinity of the Kenilworth Park North Landfill and through areas currently not open to the public through Kenilworth Park South Landfill. The impacts from construction in these areas would be similar to those from the construction of the trail under phase I. In addition, the construction of a bridge over the Watts Branch is associated with phase II. The construction of the trail in areas maintained as natural vegetation would have localized short- and long-term minor adverse impacts on soils.

Cumulative Impacts

Projects that could affect soils include past, ongoing, and future projects at Anacostia Park as well as development that involves construction in or around the project area. Past or ongoing projects include the completion of Sections 1 and 2 of the ARW Trail, the CSO project, the DDOT highway construction project at I-295 and Burroughs Avenue. These projects have required or will require some soil disturbance, including localized erosion and compaction, but would include mitigation to reduce soil loss and erosion. The remediation of the Kenilworth Park Landfill would result in short-term minor adverse impacts on soils, but soils in this area have been previously disturbed. Impacts on soils from these cumulative actions would result in short-term and long-term minor adverse impacts. When combined with the localized short- and long-term negligible to minor adverse impacts of alternative B, cumulative impacts on soils would be long-term, minor, and adverse, with alternative B having a slight adverse contribution.

Conclusion

Constructing Section 3 of the ARW Trail under alternative B would involve the loss of soils due to clearing, grubbing, and other construction activities. The implementation of alternative B would result in short-term negligible to minor adverse impacts and long-term minor adverse impacts on soils. Cumulative impacts on the soils in the cumulative study area would be long-term, minor, and adverse, with alternative B having a slight contribution to adverse impacts.

VEGETATION

METHODOLOGY AND ASSUMPTIONS

Available information on vegetation and vegetation communities present at Anacostia Park was compiled and reviewed. Predictions about short- and long-term project impacts on vegetation were based on general characteristics and proposed actions affecting vegetated areas associated with the alternatives.

STUDY AREA

The geographic study area for vegetation includes the project area for the proposed actions at Anacostia Park. Trail construction activities would not occur outside this area. The study area for cumulative analysis would be the same.

IMPACT THRESHOLDS

The following thresholds were used to determine the magnitude of impacts on vegetation:

Negligible: Some individual native plants could be affected as a result of the alternative, but measurable or perceptible changes in plant community size, integrity, or continuity would not occur. The impacts would be on a small scale.

Minor: The alternative would affect some individual native plants and would also affect a relatively minor portion of that species' population. The viability of the plant community would not be affected and the community, if left alone, would recover. Mitigation could be needed to offset adverse impacts, would be relatively simple to implement, and would likely be successful.

Moderate: The alternative would affect some individual native plants and a relatively large area in the native plant community that would be readily measurable in terms of abundance, distribution, quantity, or quality. Mitigation needed to offset adverse impacts could be extensive and would likely be successful.

Major: The alternative would have a considerable effect on native plant communities that would be readily apparent, and would substantially change vegetation community types over a large area inside and outside the park. Mitigation measures to offset the adverse impacts would be required, the measures required would be extensive, and the success of these mitigation measures would not be guaranteed.

IMPACTS OF ALTERNATIVE A: NO ACTION

Analysis

Under the no action alternative, Section 3 of the ARW Trail would not be constructed. Visitors would continue to have limited and discontinuous bicycle and pedestrian access between the riverfront and adjacent communities. The only riverfront access in the project area is the River Trail, which is an existing, well-defined footpath located along the Anacostia River in the Kenilworth Aquatic Gardens. Otherwise, the majority of the project area in the park is not easily accessible to visitors. Natural vegetation in the project area remains mostly undisturbed by human activities. While there may be the occasional incident of inadvertent damage (e.g., trampling, walking on exposed roots) or intentional vandalism to individual plants and trees along the River Trail, there is no evidence of social trails in the project area further damaging vegetation. Impacts on vegetation from the occasional incidence of damage would not likely be noticeable. Adverse impacts on vegetation resulting from visitor use of the existing park trails would be considered long-term and negligible.

Cumulative Impacts

Projects that could affect vegetation include past, ongoing, and future projects at Anacostia Park as well as development that involves construction in or around the project area. Past and ongoing projects include the completion of Sections 1 and 2 of the ARW Trail and the CSO project. These projects have required and are requiring some vegetation disturbance, including clearing and tree removal to construct the trail sections or replace the sewer system. Future projects include the remediation of the Kenilworth Park Landfill, which would be expected to disturb or remove vegetation, resulting in short-term minor adverse impacts. Impacts on vegetation from these cumulative actions would result in short-term and long-term minor adverse impacts. When combined with the localized long-term negligible adverse impacts of the no

action alternative, cumulative impacts on vegetation would be long-term, minor, and adverse, with alternative A having a slight adverse contribution.

Conclusion

Under the no action alternative, existing trail use would continue in the project area, resulting in long-term negligible adverse impacts on vegetation. Cumulative impacts on vegetation would be long-term, minor, and adverse, with the no action alternative having a slight contribution to adverse impacts.

IMPACTS OF ALTERNATIVE B: REALIGNMENT OF SECTION 3

Analysis

Activities associated with alternative B that would impact vegetation include the removal of turf and native vegetation, including trees, to construct Section 3 of the ARW Trail under phases I and II.

Phase I

The construction of the trail would remove the existing vegetation within the footprint of the trail, or cover vegetation in areas where the trail would be elevated. In areas of natural vegetation or areas maintained as turf, the upper layer of existing vegetation, including grasses, shrubs, and trees, would be removed and replaced with an asphalt base. Trees to be removed would include those located in the proposed footprint of the trail and/or trees with their critical root zone within the footprint of the trail. The siting of Section 3 of the ARW Trail purposely avoided highly desirable native trees to the extent possible. Approximately 2,300 trees were inventoried in the entire project area. Of the inventoried trees, approximately 200 would be removed (Wilson 2010). The preliminary trail design was routed to avoid healthy native trees. Instead, unhealthy or invasive tree species were slated for removal wherever feasible. Due to the amount of natural vegetation that would be removed in currently undisturbed areas as a result of the construction of Section 3 of the ARW Trail, the impacts on vegetation would be long-term, moderate, and adverse.

In environmentally sensitive areas or wetland areas, the proposed trail would be constructed as a boardwalk. The construction of the trail in these areas would be conducted linearly, with all construction equipment using each newly constructed section of boardwalk as a working platform to extend the trail through the wetland. All construction equipment would remain within the ultimate footprint of the trail. The construction of the boardwalk would likely impact only a small number of individual plants, and would not impact any populations of species. These changes would not result in substantial impacts on the vegetation of the Anacostia River or the surrounding area. Overall, any adverse impacts on vegetation that would occur as a result of the construction of boardwalks in environmentally sensitive or wetland areas would be considered localized, short-term, and negligible.

On the west side of the river, the trail alignment would be placed in the same location as an existing gravel path and would not require any tree removal.

In sections where the trail would be located on existing roads or sidewalks, such as the trail section near Hayes Street or along the existing River Trail in the Kenilworth Aquatic Gardens, no adverse impacts on vegetation would be expected. No vegetation exists within the footprint of these roads and trails, because these areas are already covered with concrete, asphalt, or other man-made surfaces or consist of packed soil. Along the roads and trails, vegetation is sparse. A small portion of vegetation immediately adjacent to the roads and trails would likely be impacted during construction. Once the construction is complete, these adjacent areas would be reseeded or replanted with native species. Impacts on vegetation from the construction of Section 3 of the ARW Trail in these developed areas would be short-term, negligible, and adverse.

Hazardous trees and vegetation would be removed or trimmed back prior to construction to allow vehicles and workers to access the project site. Construction staging areas would be expected to be restricted to existing parking or paved areas in the project site; no vegetation would be impacted or removed.

Phase II

The alignment under phase II would avoid the use of any existing streets and would continue the ARW Trail along the east bank of the Anacostia River. The trail alignment on the east side would be located in areas that are currently closed to the public in the vicinity of the KPS Landfill. The impacts on vegetation from construction in these areas would be similar to those from the construction of the trail under phase I. Approximately 2,300 trees were inventoried in the entire project area. Of the inventoried trees, approximately 200 would be removed. The construction of the trail in areas maintained as natural vegetation would have long-term moderate adverse impacts on vegetation.

Cumulative Impacts

Impacts on vegetation from cumulative actions would be similar to those under the no action alternative, resulting in long-term minor adverse impacts on vegetation. When combined with the localized short-term negligible impacts and long-term moderate adverse impacts of alternative B, cumulative impacts on vegetation would be long-term, moderate, and adverse, with alternative B having a noticeable adverse contribution.

Conclusion

The construction of Section 3 of the ARW Trail under alternative B would result in long-term moderate adverse impacts on vegetation as a result of the natural vegetation that would be removed in currently undisturbed areas. Adverse impacts on vegetation that would occur as a result of the construction of boardwalks in environmentally sensitive or wetland areas would be short-term and negligible. The impacts from the construction of the trail in developed areas would be short-term, negligible, and adverse. Mitigation measures would include the removal of unhealthy or invasive tree species where feasible and retaining highly desirable native trees. Cumulative impacts on vegetation would be long-term, moderate, and adverse, with alternative B having a noticeable contribution to adverse impacts.

WILDLIFE AND WILDLIFE HABITAT

METHODOLOGY AND ASSUMPTIONS

Information on wildlife species present in the study area was based on a review of existing information on the area and consideration of common wildlife species likely to occur in the park. The analysis of potential impacts on wildlife was based on the potential for species to use the proposed project sites or to be affected by project activities or the loss of habitat associated with the construction or operation of the new Section 3 of the ARW Trail.

STUDY AREA

The geographic study area for wildlife and wildlife habitat includes the project area for the proposed actions at Anacostia Park. Trail construction activities would not occur outside this area. The study area for cumulative analysis would be the same.

IMPACT THRESHOLDS

The following thresholds were used to determine the magnitude of impacts on wildlife and wildlife habitat:

Negligible: There would be no observable or measurable impacts on native species, their habitats, or the natural processes sustaining them. Impacts would be well within natural fluctuations.

Minor: Impacts would be detectable, but they would not be expected to be outside the natural range of variability of native species' populations, their habitats, or the natural processes sustaining them. Mitigation measures, if needed to offset adverse impacts, would be slight and successful.

Moderate: Readily detectable impacts outside the range of natural variability would occur on native animal populations, their habitats, or the natural processes sustaining them. The change would be measurable in terms of population abundance, distribution, quantity, or quality, and would occur over a relatively large area. Mitigation needed to offset adverse impacts could be extensive, but would likely be successful.

Major: Readily apparent impacts outside the range of natural variability would occur on native animal populations, their habitats, or the natural processes sustaining them. The change would be measurable in terms of population viability and could involve the displacement or loss of a wildlife or aquatic life population or assemblage. Mitigation measures to offset the adverse impacts would be required and would be extensive, and the success of these mitigation measures would not be guaranteed.

IMPACTS OF ALTERNATIVE A: NO ACTION

Analysis

Under the no action alternative, the current management of Anacostia Park would remain unchanged. Section 3 of the ARW Trail would not be constructed, and visitors would continue to have limited and discontinuous bicycle and pedestrian access between the riverfront and adjacent communities.

Currently, the only riverfront access in the project area is the River Trail, an existing, well-defined footpath located along the Anacostia River in the Aquatic Gardens. Outside of the Aquatic Gardens, the majority of the project area in the park is not easily accessible to visitors. Occasional canoeists use a dock on the west bank of the Anacostia near the National Arboretum boundary. Impacts on wildlife and wildlife habitat would be associated with current visitor use on the existing trails in the park.

Under the no action alternative, terrestrial wildlife in the project area would be impacted by the occasional noise and human activity associated with the current limited park access at the site. These adverse impacts would be long-term and negligible because the terrestrial wildlife that inhabits the park has become accustomed to the occasional visitors. In the event that wildlife is disturbed and flees the immediate area, there is sufficient adjacent habitat for wildlife species to inhabit. In addition, the existing River Trail in the project area is well defined, keeping people from wandering off the trail and into the adjacent forested, meadow, or wetland and marsh areas that provide additional separation of park visitors and wildlife. Any adverse impacts on wildlife and the wildlife habitats in the project area in Anacostia Park under the no action alternative would be long-term and negligible.

Cumulative Impacts

Projects that could affect wildlife and wildlife habitat include past, ongoing, and future projects at Anacostia Park as well as development that involves construction in or around the project area. Past and ongoing projects include the completion of Sections 1 and 2 of the ARW Trail. These projects have required and will require some disturbance to wildlife and wildlife habitat, including clearing and tree removal to construct the trail sections. Impacts on wildlife and wildlife habitat from these cumulative actions would result in short-term and long-term minor adverse impacts from increased visitor access in areas that were previously undeveloped. Future projects include the restoration of the Anacostia River Watershed, which would be expected to improve water quality and improve aquatic habitat, resulting in a long-term beneficial impact. When combined with the short- and long-term negligible adverse impacts of alternative A, cumulative impacts on wildlife and wildlife habitat would be long-term, minor, and adverse, with alternative A having a slight adverse contribution.

Conclusion

Under the no action alternative, wildlife disturbance from current visitor use of trails would continue. These visitor activities would have long-term negligible adverse impacts on wildlife and wildlife habitat. Cumulative impacts on wildlife and wildlife habitat would be short-term and long-term, minor, and adverse, with the no action alternative having a slight contribution to adverse impacts.

IMPACTS OF ALTERNATIVE B: REALIGNMENT OF SECTION 3

Analysis

Activities proposed under alternative B that would likely impact wildlife and wildlife habitat in Anacostia Park include the construction of Section 3 of the ARW Trail under phases I and II.

Phase I

Activities associated with the trail construction would likely displace those species that currently use the areas where the proposed activities would be taking place. This displacement would result from the increased human activity and noise associated with construction vehicles on site. In addition, mortality or injury of some smaller, less mobile, species could occur as a result of construction activities. However, adverse impacts on terrestrial wildlife would be considered minor because of the relatively small area being affected as compared to Anacostia Park as a whole, and the fact that there are other areas adjacent to the construction sites where displaced individuals could move and that would provide adequate habitat. In addition, the loss or displacement of individuals of a non–threatened or endangered species would not jeopardize the viability of the populations in and adjacent to the park. These minor adverse impacts on terrestrial wildlife would be short-term because they would occur only during the construction period. Following construction activities, it is expected that any displaced species would likely return to the area.

Construction of the proposed trail through areas that are currently undisturbed natural wildlife habitat would result in the loss of those habitats. However, long-term adverse impacts on terrestrial wildlife habitat would be minor because of the relatively small area being affected as compared to Anacostia Park as a whole and because of the limited clearing of large trees.

In environmentally sensitive areas or wetland areas, the proposed trail would be constructed as a boardwalk. Construction of the boardwalk would likely impact only approximately 1,200 square feet of wetland habitat. Boardwalks through wetland areas would be constructed in a low-impact manner, which would entail setting the first boardwalk pilings from an adjacent nonwetland 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 the newly constructed section of boardwalk as a working platform to extend the trail through the wetland. All construction equipment would remain within the ultimate footprint of the trail. The impacts on wetland habitats would not adversely affect the total population of any one of the species inhabiting the area. Once construction is complete, species would be expected to resume using the wetland habitat located in and adjacent to the project area. As a result, there would be short-term minor adverse impacts on those species and their habitats that lie within the footprint of the trail that is proposed to cross wetland areas.

Construction of the trail, bridge, and dock in areas maintained as natural vegetation would have short-term minor adverse impacts on wildlife and long-term minor adverse impacts on wildlife habitat, while the construction of the trail on existing roads would result in short-term negligible adverse impacts.

In sections where the trail would be located on existing roads or sidewalks, such as the trail section near Hayes Street, negligible adverse impacts on wildlife and wildlife habitat would be expected. These areas are predominantly developed and covered with concrete, asphalt, or other man-made surfaces, and provide little habitat for wildlife species. It is expected that the few urbanized birds and small mammals that can be found on these developed sites would be temporarily displaced from areas in or immediately surrounding construction areas. Once trail construction is complete, native shrub and tree species would

be planted where possible to provide habitat. It is expected that some of the displaced species, particularly birds, would return and use the open areas adjacent to the developed areas once construction is complete. Impacts from the construction of Section 3 of the ARW Trail in developed areas would be short-term, negligible, and adverse.

Phase II

The alignment under phase II would avoid the use of any existing streets and would continue the ARW Trail along the east bank of the Anacostia River. This trail alignment would be located in areas that are currently maintained as mowed lawn and meadow in the vicinity of the KPS Landfill or along an existing gravel path. The impacts on wildlife and wildlife habitat from construction in these natural areas would be similar to those from the construction of the trail under phase I, with temporary disturbance during construction.

Cumulative Impacts

Impacts from cumulative actions under alternative B would be similar to those under the no action alternative, resulting in long-term minor adverse impacts on wildlife and wildlife habitat. When combined with the short-term and long-term minor adverse impacts of alternative B, cumulative impacts on wildlife and wildlife habitat would be long-term, minor, and adverse, with alternative B having a noticeable adverse contribution.

Conclusion

Construction of Section 3 of the ARW Trail under alternative B would result in short-term minor adverse impacts on wildlife during the construction period and long-term minor adverse impacts during the operation of the trail due to increased visitor accessibility. Following construction activities, it is expected that any displaced species would likely return to the area. Construction of the proposed trail through areas that are currently undisturbed natural wildlife habitat would result in the loss of those habitats; however, impacts would be minor because of the relatively small area being affected when compared to Anacostia Park as a whole. There would be short-term minor adverse impacts on those species inhabiting wetland areas that lie within the footprint of the trail. Cumulative impacts on wildlife and wildlife habitat would be long-term, minor, and adverse, with alternative B having a noticeable contribution to adverse impacts.

WETLANDS

METHODOLOGY AND ASSUMPTIONS

The NPS has adopted a "no net loss" of wetlands policy. Executive Order 11990, "Protection of Wetlands," states that federal agencies are to avoid to the extent possible long-term and short-term impacts associated with the destruction or modification of wetlands and avoid direct and indirect support of new construction in wetlands whenever practical alternatives exist. The USACE regulates development in wetland areas pursuant to Section 404 of the Clean Water Act (33 CFR 320–330). NPS Director's Order 77-1: *Wetland Protection* and Procedural Manual 77-1: *Wetland Protection* (NPS 2008a, 2011) provide NPS policies and procedures for complying with Executive Order 11990 (1977). As stated therein,

> Actions proposed by the NPS that have the potential to have adverse impacts on wetlands will be addressed in an EA or an Environmental Impact Statement (EIS). If the preferred alternative in an EA or EIS will result in adverse impacts on wetlands, a "Statement of Findings" documenting compliance with this Director's Order and Procedural Manual #77-1 will be completed. Actions that may be excepted from the Statement of Findings requirement are identified in the Procedural Manual. (NPR 2008a)

This project is exempted from the statement of findings requirement because it is an "excepted action" under Director's Order #77-1, since it would involve a foot/bicycle trail or boardwalk where the primary purpose includes public education, interpretation, or enjoyment of wetland resources and where the total wetland impact from fill placement would be 0.1 acre or less (NPS 2011). The total acreage of disturbance under both phases would be 0.028 acre.

The impact analysis and the conclusions for possible impacts on wetlands were based on a review of existing literature and studies and information provided by park staff and other agencies. During design, the locations of wetlands were overlaid with the proposed Section 3 realignment so that the trail alignment could be adjusted to avoid direct impacts on wetlands wherever possible.

STUDY AREA

The geographic study area for wetlands includes the project area for the proposed action at Anacostia Park. Trail construction activities would not occur outside this area. The study area for cumulative impacts is the same.

IMPACT THRESHOLDS

The following thresholds were used to determine the magnitude of impacts on wetlands:

Negligible: A barely measurable or perceptible change in wetland size, integrity, or continuity could occur.

Minor: The impact would be easily measurable or perceptible. A small change in size, integrity, or continuity could occur due to effects such as construction-related runoff. However, the overall viability of the resource would not be affected.

Moderate: The impact would be sufficient to cause a measurable change in the size, integrity, or continuity of the wetland or would result in a small but permanent loss in wetland acreage.

Major: The action would result in a measurable change in all three parameters (size, integrity, and continuity) or a permanent loss of large wetland areas. The impact would be substantial and highly noticeable.

IMPACTS OF ALTERNATIVE A: NO ACTION

Analysis

Under the no action alternative, the proposed realignment of Section 3 of the ARW Trail would not occur. There would be no excavation of soils, placement of fill, or removal of vegetation as a result of this alternative. There would be no impact on wetlands, because construction activities would not occur and the use of existing trails would not affect wetlands. The no action alternative would result in no impacts on wetlands in the project area.

Cumulative Impacts

Since no impacts are projected under the no action alternative, no cumulative impacts would occur.

Conclusion

The implementation of the no action alternative would result in no adverse impacts on wetlands in the study area. There would be no cumulative impacts.

IMPACTS OF ALTERNATIVE B: REALIGNMENT OF SECTION 3

Analysis

Phase I

Wetland impacts are estimated to be approximately 1,200 square feet (0.027 acre). Most impacts on wetlands and waterways resulting from construction would be temporary. Boardwalks through wetland areas would be constructed in a low-impact manner. Low-impact construction methods include setting the first boardwalk pilings from an adjacent nonwetland 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 the newly constructed section of boardwalk as a working platform to extend the trail through the wetland area. All construction equipment would remain within the ultimate footprint of the trail. The activities in these areas may cause a temporary disturbance; however, the construction of the boardwalk areas would not lead to a substantial loss of wetlands. Wetlands WA, WD, and WI (see chapter 3 descriptions) would be expected to experience long-term localized minor adverse direct impacts from the construction of the proposed trail (0.027 acre). All actions would incorporate best management practices, such as silt fencing, to minimize permanent impacts on wetlands and to prevent sediment and fill material from accumulating in wetlands as well as downstream from the wetlands.

The construction of a pedestrian bridge across the Anacostia River would impact an additional 40 square feet of wetlands from two of the bridge pilings in the river where the average low water level is less than 2 meters deep. Similarly, the construction of the small dock could displace up to an additional 20 square feet of wetland due to pilings. The additional impacts on wetlands increase the combined impact to 0.029 acre, which is less than the 0.1 acre of disturbance that would require a statement of findings for an excepted project.

As the result of increased impervious surface area from the proposed trail, wetlands adjacent to the trail may experience increased stormwater runoff, resulting in long-term minor adverse impacts. Overall, impacts from phase I would result in long-term minor adverse impacts on wetlands.

Phase II

Phase II would not impact wetlands.

Cumulative Impacts

Impacts on wetlands from completed and ongoing cumulative actions, including the construction of Sections 1 and 2 of the ARW Trail, have been and would be long-term, minor, and adverse. Future projects, including the Anacostia Watershed Restoration Project, would result in long-term beneficial impacts on wetlands as the result of improved water quality in the watershed. When combined with the long-term minor adverse impacts of alternative B, cumulative impacts on wetlands would be long-term, minor, and adverse, with alternative B having a slight adverse contribution.

Conclusion

Alternative B would result in long-term minor adverse impacts on approximately 1,260 square feet (0.029 acre) of wetlands. Cumulative impacts on wetlands would be long-term, minor, and adverse, with alternative B having a slight contribution to adverse impacts.

VISITOR USE AND EXPERIENCE

METHODOLOGY AND ASSUMPTIONS

The purpose of this impact analysis is to assess the effects of the alternatives on visitor use and experience at Anacostia Park. To determine impacts, the current uses at the park were considered and the potential

effects of the construction of the proposed ARW Trail on visitor experience and use were analyzed. The types of visitor experience and use/visitation that occur in Anacostia Park and that might be affected by the proposed actions, as well as noise experienced by visitors, were considered.

STUDY AREA

The study area for visitor use and experience is the boundary for the project area. The boundary includes Anacostia Park from just south of the Benning Road Bridge north into Maryland, including Kenilworth Park and Aquatic Gardens and the National Arboretum. The study area for cumulative impacts analysis encompasses Anacostia Park and surrounding properties.

IMPACT THRESHOLDS

The following thresholds were defined for visitor use and experience:

Negligible: Visitors would likely be unaware of impacts associated with implementation of the alternative. There would be no noticeable change in visitor use and/or experience or in any defined indicators of visitor satisfaction or behavior.

Minor: Changes in visitor use and/or experience would be slight and detectable, but would not appreciably limit critical characteristics of the visitor experience. Visitor satisfaction would remain stable. If mitigation were needed, it would be relatively simple and would likely be successful.

Moderate: A few critical characteristics of the desired visitor experience would change and/or the number of participants engaging in a specified activity would be altered. Some visitors who desire their continued use and enjoyment of the activity/visitor experience might pursue their choices in other available local or regional areas. Visitor satisfaction would begin to decline. Mitigation measures would probably be necessary and would likely be successful.

Major: Multiple critical characteristics of the desired visitor experience would change and/or the number of participants engaging in an activity would be greatly reduced. Visitors who desire their continued use and enjoyment of the activity/visitor experience would be required to pursue their choices in other available local or regional areas. Visitor satisfaction would markedly decline. Extensive mitigation measures would be needed, and success would not be guaranteed.

IMPACTS OF ALTERNATIVE A: NO ACTION

Analysis

The no action alternative represents the current conditions in the project area, with limited and discontinuous bicycle and pedestrian access between the riverfront and adjacent communities. Under the no action alternative, Section 3 of the ARW Trail would not be constructed and there would be no connection from Section 2 of the ARW Trail to the Bladensburg Trail. Visitors to Anacostia Park would continue to visit Kenilworth Park and Aquatic Gardens and use the existing, fragmented trail system in the park, including the River Trail and associated Aquatic Garden trails. There would be no separate facilities for bicyclists and pedestrians, and visitors would continue to cross park roads to reach the riverfront, but would continue to use the park. The no action alternative would result in long-term negligible adverse impacts on visitor use and experience.

Cumulative Impacts

NPS projects in the vicinity of the project area, such as the completion of Section 2 of the ARW Trail, have had a beneficial impact on visitor use and experience by improving park facilities and providing direct access to the riverfront. The CSO project is also occurring within the area of the Section 2 alignment and is causing a short-term, moderate adverse impact on visitor use during the replacement of

the sewer system. The construction of Section 1 of the ARW Trail is ongoing and is also expected to have a beneficial impact by allowing direct access to the riverfront. Future projects in the study area, including AWI projects and the remediation of the Kenilworth Park Landfill, would have beneficial impacts on visitor use and experience by providing an improved environment for recreation. When combined with the long-term negligible adverse impacts of alternative A, cumulative impacts on visitor use and experience would be short-term, moderate adverse and long-term and beneficial, with the no action alternative having a slight adverse contribution.

Conclusion

The implementation of alternative A would result in long-term negligible adverse impacts on visitor use and experience from the continued lack of pedestrian and bicycle facilities and the lack of direct access to the riverfront. Combined with other projects in the study area, there would be long-term beneficial cumulative impacts on visitor use and experience, with alternative A having a slight adverse contribution.

IMPACTS OF ALTERNATIVE B: REALIGNMENT OF SECTION 3

Analysis

Under alternative B, Section 3 of the ARW Trail would be constructed throughout the northern section of Anacostia Park, including Kenilworth Park and Aquatic Gardens. During the construction period, visitors to the Aquatic Gardens may experience noise from construction equipment and lack of access due to closures during construction, which may disrupt their visitor experience. The construction activities associated with alternative B would add noise pollution from heavy machinery and localized air pollution from the operation of construction vehicles, which may impact some user groups, such as bird-watchers, more than others. A portion of the existing River Trail would be closed during construction. Construction in other areas of the project area would be located closer to the urban corridor; therefore, impacts from noise would be less noticeable. Construction activities would have short-term minor adverse impacts on visitor use and experience.

Phase I

Under phase I, the construction of Section 3 of the ARW Trail would allow for continuous access from the end of Section 2 of the ARW Trail to the Aquatic Gardens and the Bladensburg Trail in Maryland. Visitors would be able to access the riverfront without crossing park roads and would be provided a trail to be able to walk or bicycle from one section of the park to another without the use of a motor vehicle. Visitor experience would benefit from the completion of improved park facilities.

The construction of the phase I alignment would provide visitors with a continuous trail along the riverside and across the Anacostia River into the National Arboretum, improving the visitor experience and allowing visitors to avoid the use of the existing road network when traveling from one section of the park to another, as well as improving the connection between the eastern and western sides of the river.

Additionally, the proposed dock adjacent to the east bridge abutment would support canoe, kayak, and small boat use, helping to meet the increasing public demand for improved river access, which would result in a long-term beneficial impact to visitor use and experience.

As a result of the completion of phase I, there would be an increased volume of pedestrians and bicyclists would be introduced to an area of the park where use is currently limited to pedestrians. This new use may result in a long-term minor adverse impact on visitors desiring a less busy River Trail experience with fewer visitors and less noise. Some user groups, including bird-watchers, may experience a disrupted visitor experience. Overall, phase I would be expected to have a long-term beneficial impact to visitor use and experience from the trail, bridge, and dock.

Phase II

Impacts to visitor use and experience under phase II would be similar to those described under phase I. Phase II would result in short-term minor adverse impacts during the construction period and long-term beneficial impacts.

Cumulative Impacts

Completed and ongoing cumulative actions would be similar to those under alternative A, resulting in beneficial impacts on visitor use and experience. When combined with the short-term, moderate and long-term minor adverse impacts and long-term beneficial impacts of alternative B, cumulative impacts on visitor use and experience would be long-term and beneficial, with alternative B having a noticeable beneficial contribution and a slight adverse contribution.

Conclusion

The implementation of alternative B would result in short-term minor adverse impacts on visitor use and experience as a result of construction activities. In addition, alternative B would have long-term, primarily beneficial impacts on visitor use and experience from improved visitor access and regional connection to existing bicycle and pedestrian trails, albeit with some minor adverse effects on visitors desiring a less busy experience along the ARW Trail. Cumulative impacts on visitor use and experience would be long-term and beneficial, with alternative B having a noticeable beneficial contribution and a slight adverse contribution.

HUMAN HEALTH AND SAFETY

METHODOLOGY AND ASSUMPTIONS

The analysis of human health and safety considers risks to NPS staff, construction personnel, and the general public that are associated with hazards in the project area as well as the proposed Section 3 realignment action. Impacts for this resource area were analyzed qualitatively, using information provided by the project architects and NPS staff familiar with the current operation and maintenance in the project area.

STUDY AREA

The study area for human health and safety is the boundary for the project area. The boundary includes Anacostia Park from just south of the Benning Road Bridge north into Maryland, including Kenilworth Park and Aquatic Gardens. The study area for cumulative impacts analysis encompasses Anacostia Park and surrounding properties.

IMPACT THRESHOLDS

The impact intensities for the assessment of impacts on human health and safety follow. Where impacts on health and safety become moderate, it is assumed that current visitor satisfaction and safety levels would begin to decline, and some of the site's long-term visitor goals would not be achieved.

Negligible: Impacts on health and safety would not be measurable or perceptible.

Minor: Impacts on health and safety would be measurable or perceptible, but it would be limited to a relatively small number of visitors or employees at localized areas. Mitigation could be needed, but would be relatively simple and likely to be successful.

Moderate: Impacts on health and safety would be sufficient to cause a change in accident rates at existing low accident locations or in areas that currently do not exhibit noticeable accident trends. Mitigation measures would probably be necessary and would likely be successful.

Major: Impacts on health and safety would be substantial. Accident rates in areas usually limited to low accident potential would be expected to substantially increase in the short and long-term. Extensive mitigation measures would be needed, and success would not be guaranteed.

IMPACTS OF ALTERNATIVE A: NO ACTION

Analysis

The no action alternative represents the current conditions in the project area, with limited and discontinuous bicycle and pedestrian access between the riverfront and adjacent communities. Under the no action alternative, Section 3 of the ARW Trail would not be constructed and there would be no connection from Section 2 of the ARW Trail to the Bladensburg Trail. When visitors reach the end of Section 2 of the ARW Trail, they would be forced onto the existing road network without any formal trail or designated lane. The no action alternative would result in long-term negligible adverse impacts on human health and safety.

Cumulative Impacts

Completed NPS projects in the vicinity of the project area, such as the construction of Section 2 of the ARW Trail, would not impact human health and safety. The construction of Section 1 of the ARW Trail is ongoing and would also not be expected to impact human health and safety. Future projects in the study area, including the remediation of the Kenilworth Park Landfill and the Anacostia Watershed Restoration Project, would have long-term beneficial impacts on human health and safety by removing contaminants and improving water quality. When combined with the long-term negligible adverse impacts of alternative A, cumulative impacts on human health and safety would be long-term and beneficial, with the no action alternative having a slight adverse contribution.

Conclusion

The implementation of the no action alternative would result in long-term negligible adverse impacts on human health and safety. When combined with the beneficial impacts from the cumulative actions, the no action alternative would add a slight adverse impact on human health and safety, resulting in an overall long-term beneficial cumulative impact on human health and safety.

IMPACTS OF ALTERNATIVE B: REALIGNMENT OF SECTION 3

Analysis

Under alternative B, Section 3 of the ARW Trail would be constructed throughout the northern section of Anacostia Park, including Kenilworth Park and Aquatic Gardens.

Phase I

During the construction of phase I, clear closure signs would be posted in order to prevent visitors from inadvertently entering the construction site, and the NPS would formulate a health and safety plan. With these mitigation measures, impacts on health and safety during the construction period would be short-term, negligible, and adverse. In areas of potential soil contamination, the trail would be elevated from grade and constructed on 1-2 feet of fill material to avoid disturbance of any soils. Phase I would provide a direct connection between the end of Section 2 of the ARW Trail, through Anacostia Park, to the Bladensburg Trail, improving visitor safety by eliminating the need for trail users to be routed onto public roads without a separate trail lane. Additionally, the inclusion of a formalized launch location on the eastern bank for kayakers and canoeists would improve human health and safety in the project area. Due to these improvements, phase I would result in a long-term beneficial impact on human health and safety.

Phase II

The construction of the phase II alignment would provide visitors with a continuous trail along the riverside after the remediation at the KPS Landfill has been completed or once the landfill area has been cleared for public use, similar to KPN Landfill. Since phase II would not be constructed until the remedial investigations have been completed and proper remediation and mitigation measures have been developed, phase II would have no long-term adverse impacts on human health and safety. Short-term impacts during construction would be similar to phase I. Phase II would eliminate the need for park users to use the existing road network, further improving the safety of users on the trail.

Phases I and II would result in long-term beneficial impacts on human health and safety.

Cumulative Impacts

Completed and ongoing cumulative actions would be similar to those under alternative A, resulting in long-term beneficial impacts on human health and safety. When combined with the long-term beneficial impacts and short-term minor adverse impacts of alternative B, cumulative impacts on human health and safety would be long-term and beneficial, with alternative B having a noticeable beneficial contribution and slight adverse contribution.

Conclusion

The implementation of alternative B would result in short-term negligible adverse and long-term beneficial impacts on human health and safety. Combined with other projects in the study area, there would be long-term beneficial cumulative impacts.

NEIGHBORHOODS

METHODOLOGY AND ASSUMPTIONS

The purpose of this impact analysis is to assess the effects of the alternatives on the neighborhoods surrounding Anacostia Park adjacent to the project area. To determine impacts, the current neighborhood accessibility to the park was considered and the potential effects of the construction of the proposed ARW Trail on neighborhoods were analyzed.

STUDY AREA

The study area for neighborhoods is the boundary for the project area and the adjacent neighborhoods of River Terrace, Mayfair, Central Northeast (NE), Eastland Gardens / Kenilworth, and Colmar Manor / Bladensburg. The study area for cumulative impacts is the same.

IMPACT THRESHOLDS

The following thresholds were defined for neighborhoods:

Negligible: Neighborhoods would likely be unaware of impacts associated with the implementation of the alternative.

Minor: The effects on neighborhoods would be small but detectable. The impact would be slight, but would not be detectable outside the neighboring lands.

Moderate: The effects on neighborhoods would be readily apparent. Changes would be limited and confined locally.

Major: The effects on adjacent neighborhoods would be readily apparent. Changes would be substantial and would extend beyond the local areas.

IMPACTS OF ALTERNATIVE A: NO ACTION

Analysis

The no action alternative represents the current conditions in the project area, with limited and discontinuous bicycle and pedestrian access between the riverfront and adjacent communities. Under the no action alternative, Section 3 of the ARW Trail would not be constructed and there would be no connection from Section 2 of the ARW Trail to the Bladensburg Trail.

With the no action alternative, neighborhoods adjacent to the park would continue to have limited access, and direct access to the waterfront would only be available from the Aquatic Gardens area of the project site. The Mayfair and Central NE neighborhoods would continue to experience limited or no direct access to the park. The no action alternative would result in long-term negligible adverse impacts on neighborhoods.

Cumulative Impacts

Completed NPS projects in the vicinity of the project area, such as the construction of Section 2 of the ARW Trail, have had a beneficial impact on neighborhoods by improving park access to the park and riverfront below the project area. The River Terrace neighborhood is partially located along Section 2 of the ARW Trail and would experience the most benefit. The construction of Section 1 of the ARW Trail is ongoing and is also expected to have a beneficial impact by allowing direct access to the riverfront. Future projects in the study area, including AWI projects and the remediation of the Kenilworth Landfill, would have beneficial impacts on neighborhoods by removing contamination and improving water quality in the vicinity of the neighborhoods. When combined with the long-term negligible adverse impacts of alternative A, cumulative impacts on neighborhoods would be long-term and beneficial, with alternative A having a slight adverse contribution.

Conclusion

The implementation of alternative A would result in long-term negligible adverse impacts on neighborhoods from the continued lack of direct access to the park and the riverfront. Combined with other projects in the study area, there would be long-term beneficial cumulative impacts, with alternative A having a slight adverse contribution.

IMPACTS OF ALTERNATIVE B: REALIGNMENT OF SECTION 3

Analysis

Under alternative B, Section 3 of the ARW Trail would be constructed throughout the northern section of Anacostia Park, including Kenilworth Park and Aquatic Gardens.

Phase I

Under phase I, neighbors adjacent to the park may experience noise from construction equipment, which may be disruptive. Noise from construction would mostly affect the Mayfair neighborhood along Hayes Street and Anacostia Avenue, where the trail would be located on the existing street. Construction activities associated with alternative B would add noise pollution from heavy machinery and air pollution from the operation of construction vehicles, which may temporarily impact some neighborhoods. Construction would be limited to daytime hours and the area is located close to the urban corridor; therefore, impacts from noise would be less noticeable. Construction activities would have short-term and intermittent minor adverse impacts on neighborhoods.

Under phase I, the construction of Section 3 of the ARW Trail would allow for more direct access to the park from adjacent neighborhoods and would extend waterfront access along the Aquatic Gardens area and across the Anacostia River to the National Arboretum. Construction of the trail along Hayes Street would eliminate existing on-street parking in the Mayfair neighborhood. Parking spots at this location are

not regularly fully occupied and it is expected that parking in the Mayfair Mansions housing complex would be able to accommodate the existing parking demand. The increased accessibility for park neighbors would result in long-term beneficial impacts and the elimination of parking spots would result in long-term negligible adverse impacts.

Phase II

The construction of the phase II alignment would improve direct neighborhood access to the waterfront by extending the Section 3 realignment along the eastern edge of the Anacostia River from the pedestrian bridge to just below the Mayfair neighborhood. Phase II would result in beneficial impacts on neighborhoods. Neighborhoods would not be impacted during the construction period of phase II, as the proposed phase II alignment is not adjacent to park neighbors.

Phases I and II would result in short-term and intermittent minor adverse impacts during the construction period and long-term negligible adverse impacts and long-term beneficial impacts.

Cumulative Impacts

Completed, ongoing, and future cumulative actions would be similar to those under alternative A, resulting in beneficial impacts on neighborhoods. When combined with the short-term intermittent minor adverse impacts and long-term beneficial impacts of alternative B, cumulative impacts on neighborhoods would be long-term and beneficial, with alternative B having a noticeable contribution.

Conclusion

Implementation of alternative B would result in short-term minor adverse impacts on neighborhoods as a result of construction activities. In addition, alternative B would have long-term beneficial impacts on neighborhoods from increased access to the park and riverfront area. Cumulative impacts on neighborhoods would be long-term and beneficial, with alternative B having a noticeable beneficial contribution.

CULTURAL RESOURCES

GENERAL METHODOLOGY AND ASSUMPTIONS

The NPS categorizes cultural resources by the following categories: cultural landscapes, historic structures and districts, archeological resources, museum objects, and ethnographic resources. As noted in "Impact Topics Analyzed in this Environmental Assessment" of chapter 1, only impacts on cultural landscapes, historic structures and districts, and archeological resources are of potential concern for this project. There would be no impacts on ethnographic resources or museum objects, so these topics were dismissed from consideration.

The analyses of effects on cultural resources that are presented in this section respond to the requirements of both NEPA and section 106 of the NHPA. In accordance with the Advisory Council's regulations implementing section 106 (36 CFR 800, "Protection of Historic Properties"), impacts on cultural resources were identified and evaluated by (1) determining the APE; (2) identifying cultural resources present in the APE that are either listed in or eligible to be listed in the National Register (i.e., historic properties); (3) applying the criteria of *adverse effect* to affected historic properties; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under the implementing regulations for section 106, a determination of either *adverse effect* or *no adverse effect* must also be made for affected historic properties. 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 (for example, 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 proposal that would occur later in time, be farther removed in distance, or be

cumulative (36 CFR 800.5). A determination of *no adverse effect* means there is either no effect or that the effect would not diminish, in any way, the characteristics of the cultural resource that qualify it for inclusion in the National Register.

CEQ regulations and Director's Order 12: *Conservation Planning, Environmental Impact Analysis and Decision Making* (NPS 2001) also call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact; e.g., reducing the intensity of an impact from major to moderate or minor. Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under NEPA only. Cultural resources are nonrenewable resources and adverse effects generally consume, diminish, or destroy the original historic materials or form, resulting in a loss in the integrity of the resource that can never be recovered. Therefore, although actions determined to have an adverse effect under section 106 may be mitigated, the impact remains adverse.

The NPS guidance for evaluating impacts (Director's Order 12) requires that impact assessment be scientific, accurate, and quantified to the extent possible (NPS 2001). For cultural resources, it is seldom possible to measure impacts in quantifiable terms; therefore, impact thresholds must rely heavily on the professional judgment of resource experts.

CULTURAL LANDSCAPES

METHODOLOGY AND ASSUMPTIONS

For a historic district, structure, site, or landscape to be listed in the National Register, it must possess significance (the meaning or value ascribed to the historic district or structure) and have integrity of those features necessary to convey its significance.

STUDY AREA

The study area coincides with the boundaries of Anacostia Park north of Benning Road NE, to the District/Maryland boundary line. The study area follows the east side of the Anacostia River and includes the west side of the Anacostia River along the southwest corner of the National Arboretum property. The study area includes the Kenilworth Aquatic Gardens.

The proposed activities have the potential to impact the National Register–listed Kenilworth Aquatic Gardens, which is treated as a cultural landscape.

IMPACT THRESHOLDS

For the purposes of analyzing potential impacts on cultural landscapes, the thresholds for the intensity of an impact are defined as follows:

Negligible: The impact is at the lowest level of detection, with neither adverse nor beneficial consequences. For the purposes of Section 106, the determination of effect would be *no adverse effect*.

Minor: Alteration of a pattern(s) or feature(s) of a historic property listed in or eligible for the National Register would not diminish the integrity of a character-defining feature(s) or the overall integrity of the historic property. For the purposes of Section 106, the determination of effect would be *no adverse effect*.

Moderate: The impact would alter a character-defining feature(s) of a historic property and diminish the integrity of that feature(s) of the historic property. For the purposes of Section 106, the determination of effect would be *adverse effect*.

Major: The impact would alter a character-defining feature(s) of the historic property and severely diminish the integrity of that feature(s) and the overall integrity of the historic property. For the purposes of Section 106, the determination of effect would be *adverse effect*.

Beneficial: No levels of intensity for beneficial impacts are defined. Beneficial impacts can occur under the following scenarios: when character-defining features of the historic property would be stabilized/preserved in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (NPS 1996) to maintain its existing integrity; when the historic property would be rehabilitated in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* to make possible a compatible use of the property while preserving its character-defining features; or when a historic property would be restored in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* to accurately depict its form, features, and character as it appeared during its period of significance. For the purposes of Section 106, a beneficial effect is equivalent to *no adverse effect*.

IMPACTS OF ALTERNATIVE A: NO ACTION

Analysis

Under the no action alternative, the NPS would not construct a new trail and footbridge or make any enhancements to existing bicycle and pedestrian facilities. The NPS would continue to maintain and operate existing trails and implement minor improvements as part of its normal maintenance and safety operations. None of these activities has had any effect on cultural landscapes, nor is it expected that continued practices would result in any impacts on cultural landscapes.

Cumulative Impacts

Since no impacts are projected under the no action alternative, no cumulative impacts would occur.

Conclusion

The implementation of the no action alternative would result in no direct, indirect, beneficial, or adverse impacts on cultural landscapes in the study area. No cumulative effects on cultural landscapes would occur under the no action alternative.

IMPACTS OF ALTERNATIVE B: REALIGNMENT OF SECTION 3

Analysis

Alternative B consists of multi-use trail options that generally parallel the Anacostia River. The typical construction (e.g., the width, material, and landscaping) for the trail section would vary by location. This alternative would connect the southern portions of Anacostia Park with Kenilworth Park and Aquatic Gardens and the Bladensburg Trail in Maryland and would connect the park with the National Arboretum via a pedestrian bridge.

Phase I

Phase I would occur in the marshland adjacent to National Register–listed Kenilworth Gardens Cultural Landscape. On the east side of the Anacostia River, the trail would run adjacent to the Anacostia River Seawall in the Kenilworth Marsh directly northwest of the Aquatic Gardens. Although the trail would be located in Kenilworth Marsh, a contributing feature to the Kenilworth Aquatic Gardens Cultural Landscape, the trail would not compromise the integrity of the marsh because trails and paths are already present in Kenilworth Marsh. These actions would somewhat alter aspects of the setting; however, they would not diminish the integrity of character-defining features or compromise the overall integrity of the Kenilworth Aquatic Gardens Cultural Landscape, resulting in indirect long-term minor adverse impacts, or *no adverse effect* under Section 106, on cultural landscapes.

Phase II

Phase II would follow the eastern bank of the Anacostia, joining the phase I alignment south of the Kenilworth Aquatic Gardens. Phase II would occur adjacent to National Register–listed Kenilworth Gardens. While these actions would somewhat alter aspects of the setting, they would not diminish the integrity of character-defining features or compromise the overall integrity of the Kenilworth Gardens Cultural Landscape. Therefore, these activities would have indirect long-term negligible adverse impacts, or *no adverse effect* under Section 106, on cultural landscapes.

Cumulative Impacts

A few previously completed and ongoing projects in Anacostia Park, including the Anacostia Waterfront Initiative, the feasibility study at Kenilworth Park Landfill (CERCLA activities), the Anacostia Watershed Restoration, and the DDOT highway project at I-295 and Burroughs Road have had or are expected to have no impacts on cultural landscapes.

Some future projects that could have impacts on cultural landscapes in the study area include the 11th Street bridges project, the Poplar Point redevelopment project, and the Poplar Point restoration project. The NEPA compliance for the Poplar Point redevelopment project is not yet available, but the EIS for the 11th Street bridges project determined that the project would result in an adverse effect on Anacostia Park because 1.5 acres of open recreation area would be lost. While the project would not impact the seawalls themselves, it would impact land close to the seawalls on both sides of the Anacostia River. Thus, a finding of *adverse effect* was recommended. Given the magnitude of these three projects in Anacostia Park, especially the 11th Street bridges project, adverse impacts on historic structures and districts are expected for Anacostia Park and the Anacostia River Seawall, which extends into the present study area. As a result, cumulative impacts for alternative B would be long-term, minor, and adverse, with alternative B having a slight adverse contribution.

Conclusion

Adverse impacts on cultural landscapes from alternative B would be negligible to minor, which is equivalent to *no adverse effect* under Section 106. Alternative B would result in indirect short-term and long-term minor adverse cumulative impacts on cultural landscapes.

HISTORIC STRUCTURES AND DISTRICTS

METHODOLOGY AND ASSUMPTIONS

For a historic district, structure, site, or landscape to be listed in the National Register, it must possess significance (the meaning or value ascribed to the historic structure or district) and have integrity of those features necessary to convey its significance.

STUDY AREA

The study area coincides with the boundaries of Anacostia Park north of Benning Road NE to the District/Maryland boundary line. The study area follows the east side of the Anacostia River and includes the west side of the Anacostia River along the southwest corner of the National Arboretum property. A National Register–listed historic district included in the study area is the National Arboretum, and adjacent to the study area is the National Register–listed Langston Golf Course Historic District.

The proposed activities have the potential to impact three National Register–listed or National Register–eligible historic districts and one historic structure that may be National Register eligible but that has not been formally evaluated:

- Anacostia Park (National Register eligible)
- Anacostia River Seawall (potentially National Register eligible)

- United States National Arboretum (National Register listed)
- Langston Golf Course Historic District (National Register listed)

For cumulative impacts, the study area includes all of Anacostia Park on the eastern side of the Anacostia River.

IMPACT THRESHOLDS

For the purposes of analyzing potential impacts on historic structures and districts, the thresholds for the intensity of an impact are defined as follows:

Negligible: The impact is at the lowest level of detection, with neither adverse nor beneficial consequences. For the purposes of Section 106, the determination of effect would be *no adverse effect*.

Minor: Alteration of a pattern(s) or feature(s) of a historic property listed in or eligible for the National Register would not diminish the integrity of a character-defining feature(s) or the overall integrity of the historic property. For the purposes of Section 106, the determination of effect would be *no adverse effect*.

Moderate: The impact would alter a character-defining feature(s) of a historic property and diminish the integrity of that feature(s) of the historic property. For the purposes of Section 106, the determination of effect would be *adverse effect*.

Major: The impact would alter a character-defining feature(s) of the historic property and severely diminish the integrity of that feature(s) and the overall integrity of the historic property. For the purposes of Section 106, the determination of effect would be *adverse effect*.

Beneficial: No levels of intensity for beneficial impacts are defined. Beneficial impacts can occur under the following scenarios: when character-defining features of the historic property would be stabilized/preserved in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995) to maintain its existing integrity; when the historic property would be rehabilitated in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* to make possible a compatible use of the property while preserving its character defining features; or when a historic property would be restored in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* to accurately depict its form, features, and character as it appeared during its period of significance. For the purposes of Section 106, a beneficial effect is equivalent to *no adverse effect*.

IMPACTS OF ALTERNATIVE A: NO ACTION

Analysis

Under the no action alternative, the NPS would not construct a new trail and footbridge or make any enhancements to existing bicycle and pedestrian facilities. The NPS would continue to maintain and operate existing trails and implement minor improvements as part of its normal maintenance and safety operations. None of these activities has had any effect on historic structures and districts, nor is it expected that continued practices would result in any impacts on historic structures or districts.

Cumulative Impacts

Since no impacts are projected under the no action alternative, no cumulative impacts would occur.

Conclusion

Implementation of the no action alternative would result in no direct, indirect, beneficial, or adverse impacts on historic structures and districts in the study area. No cumulative effects on historic structures and districts would occur under the no action alternative.

IMPACTS OF ALTERNATIVE B: REALIGNMENT OF SECTION 3

Analysis

Alternative B consists of multi-use trail options that generally parallel the Anacostia River. The typical construction (e.g., the width, material, and landscaping) for the trail section would vary by location. This alternative would connect the southern portions of Anacostia Park with Kenilworth Park and Aquatic Gardens and the Bladensburg Trail in Maryland and would connect the park with the National Arboretum via a pedestrian bridge.

Phase I

Phase I would occur within the boundaries of National Register–eligible Anacostia Park and adjacent to the potentially eligible Anacostia River Seawall. On the east side of the Anacostia River, the trail would run adjacent to the Anacostia River Seawall in the Kenilworth Marsh directly northwest of the Aquatic Gardens. The construction of the trail adjacent to Anacostia Seawall would not result in a loss of integrity because the proposed action would not involve physical changes to the seawall. These actions would somewhat alter aspects of the setting of Anacostia Park and the Anacostia Seawall; however, they would not diminish the integrity of character-defining features or compromise the overall integrity of historic resources, resulting in indirect long-term minor adverse impacts, or *no adverse effect* under section 106, on historic structures and districts.

Phase I would also include a pedestrian bridge, which would cross the Anacostia River at the location of Kenilworth Park on the east side of the river and at the southwest corner of the National Arboretum on the west side of the river. On the west side of the river, the trail would travel southwest of the bridge along the Anacostia River and then continue west on an existing road in the southeast corner of the National Arboretum. The trail would follow an existing gravel road currently used occasionally by maintenance vehicles. A temporary staging area would be located west of the bridge crossing on NPS property, adjacent to the National Arboretum property.

Under phase I, the pedestrian bridge constructed over the Anacostia Seawall would not directly damage the fabric of the Anacostia Seawall because the pilings and the bridge itself would bypass the seawall. However, mitigation measures would need to be implemented during construction to ensure that the seawall is not damaged indirectly. Short-term and long-term minor adverse impacts would be mitigated in the construction permit and would involve fencing off and protecting the seawall during construction activities.

The construction of the bridge would introduce a new visual element adjacent to the National Arboretum property and the adjacent Langston Golf Course. While the trail would follow an existing gravel road, approaches to the bridge and the temporary staging area would require minimal clearing of trees and vegetation directly adjacent to the National Arboretum property near the terminus of Holly Springs Drive, a road accessible to visitors. Overall, these activities under phase I would not significantly diminish the integrity of character-defining features or compromise the overall integrity of these historic resources. Trees remaining along the road in the National Arboretum and trees along the edges of the Langston Golf Course would serve as a buffer and for the most part would obstruct views of the bridge and the staging area. The staging area would be removed after construction. While the views of the bridge, trail, and dock, and the loss of vegetation would somewhat reduce the integrity of setting, the integrity of the districts as a whole would be retained. Therefore, these activities would have indirect short-term and long-term minor impacts, or *no adverse effect* under Section 106, on historic structures and districts.

Phase II

Phase II would follow the eastern bank of the Anacostia, joining the phase I alignment south of the pedestrian bridge. Phase II would occur within the boundaries of National Register–eligible Anacostia Park and adjacent to the potentially eligible Anacostia River Seawall in Anacostia Park. While these actions would somewhat alter aspects of the setting, they would not diminish the integrity of character-defining features or compromise the overall integrity of these historic resources. Therefore, these activities would have indirect long-term minor adverse impacts, or *no adverse effect* under Section 106, on historic structures and districts.

Cumulative Impacts

A few previously completed and ongoing projects in Anacostia Park, including the AWI, the feasibility study at Kenilworth Park Landfill (CERCLA activities), the Anacostia Watershed Restoration, and the DDOT highway project at I-295 and Burroughs Road, have had or are expected to have no impacts on historic structures and districts.

Some future projects that could have impacts on historic structures and districts in the study area include the 11th Street bridges project, the Poplar Point redevelopment project, and the Poplar Point restoration project. The NEPA compliance for the Poplar Point redevelopment project is not yet available, but the EIS for the 11th Street bridges project determined that the project would result in an adverse effect on Anacostia Park because 1.5 acres of open recreation area would be lost. While the project would not affect the seawalls themselves, it would affect land close to the seawalls on both sides of the Anacostia River. Thus, a finding of *adverse effect* was recommended. Given the magnitude of these three projects in Anacostia Park, especially the 11th Street bridges project, adverse impacts on historic structures and districts are expected for Anacostia Park and the Anacostia River Seawall, which extends into the present study area. As a result, cumulative impacts for alternative B would be long-term, minor, and adverse, with alternative B having a slight adverse contribution.

Conclusion

Adverse impacts on historic structures and districts from alternative B would be long-term minor and adverse, which is equivalent to *no adverse effect* under section 106. Alternative B would result in indirect long-term minor adverse cumulative impacts on historic structures and districts. Mitigation measures would need to be implemented to ensure that direct and/or indirect impacts would not occur to the Anacostia Seawall.

ARCHEOLOGICAL RESOURCES

METHODOLOGY AND ASSUMPTIONS

Because archeological resources exist essentially in subsurface contexts, potential impacts on archeological resources are assessed according to the extent to which the proposed alternatives would involve ground-disturbing activities such as excavation or grading. The analysis of possible impacts on archeological resources was based on a review of previous archeological studies, consideration of the proposed design concepts, and other information provided by the NPS.

STUDY AREA

The study area, or area of potential effect (APE), considered in this EA broadly includes Anacostia Park between Benning Road and New York Avenue, east of the Anacostia River. On the west side of the river, the APE would follow an existing gravel road on NPS property and extend onto a paved road on the National Arboretum property. The APE would be limited to the actual trail alignment where construction activities would occur, including a construction staging area on the west side of the river. It is assumed that ground-disturbing activities required for new construction or upgrading of the trail would be relatively shallow, on the order of 1 foot or less below existing grade. Somewhat deeper impacts would be

associated with the bridge, where foundation work would be necessary to support the abutments on each side of the river. The study area for cumulative impacts is the same.

IMPACT THRESHOLDS

Impacts on archeological resources occur when the proposed alternative results in complete or partial destruction of the resource, which is termed a loss of integrity in the context of section 106. Impact thresholds for archeological resources consider both the extent to which the proposed alternative results in a loss of integrity and the degree to which these losses can be compensated by mitigating activities, such as preservation or archeological data recovery. The process begins with the assessment of a resource according to its eligibility for the National Register, because only sites considered significant enough for listing in the National Register are protected by federal regulations.

Under federal guidelines, resources are eligible for the National Register if they possess integrity and if they meet one or more of the criteria of eligibility for inclusion in the National Register. Most archeological resources found eligible for the National Register are significant under criterion D because they have the potential to provide important information about history or prehistory. However, in some circumstances, archeological resources might be found significant because (1) they are associated with events that have made a significant contribution to the broad patterns of our history (National Register criterion A), (2) they are associated with the lives of persons significant in our past (National Register criterion B), or (3) they exhibit the distinctive characteristics of a type, period, or method of construction (National Register criterion C).

For the purposes of analyzing impacts on archeological resources, thresholds for the intensity of an impact are based on the foreseeable loss of integrity. All these discussions consider only the direct impacts of construction, because operation of the facilities should have no ground-disturbing activities and no additional effect on archeological resources under either of the alternatives under consideration. All impacts are considered long-term (e.g., lasting longer than the period of construction).

Negligible: Impact is at the lowest levels of detection, with neither adverse nor beneficial consequences. The determination of effect for Section 106 would be *no adverse effect.*

Minor: Disturbance of a site(s) results in little, if any, loss of integrity. For the purposes of Section 106, the determination of effect would be *no adverse effect.*

Moderate: Disturbance of a site(s) results in loss of integrity to the extent that there is a partial loss of the character-defining features and information potential that form the basis of the site's National Register eligibility. Mitigation is accomplished by a combination of archeological data recovery and in-place preservation. The determination of effect for Section 106 would be *adverse effect.*

Major: Disturbance of a site(s) results in loss of integrity to the extent that it is no longer eligible for the National Register. Its character-defining features and information potential are lost to the extent that archeological data recovery is the primary form of mitigation. The determination of effect for Section 106 would be *adverse effect*.

Beneficial: A beneficial impact would occur when actions were taken to actively preserve or stabilize a site in its preexisting condition, or when it would be preserved in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* to accurately depict its form, features, and character as it appeared during its period of significance. For the purposes of Section 106, the determination of effect would be *no adverse effect*.

Duration: All impacts on archeological resources are considered long-term.

IMPACTS OF ALTERNATIVE A: NO ACTION

Analysis

The no action alternative would continue the existing practices for land use along the study area. The NPS would not construct a new trail or make any enhancements to existing bicycle and pedestrian facilities or construct a new bridge. The existing trails and open space would be maintained in their current condition. None of these activities is having any effect on archeological resources, nor is it expected that continued land use practices would result in any impacts on archeological resources.

Cumulative Impacts

None of the past, present, and future projects included in the cumulative impact analysis would have any impact on the archeological resources in the park; therefore, no cumulative impacts on archeological resources would be anticipated from implementation of the no action alternative.

Conclusion

The implementation of the no action alternative would result in no direct, indirect, beneficial, or adverse impacts on archeological resources in the study area. No cumulative effects on archeological resources would occur under the no action alternative.

IMPACTS OF ALTERNATIVE B: REALIGNMENT OF SECTION 3

Under alternative B, the park would construct a new multi-use trail (Section 3 of the ARW Trail) and make enhancements to existing bicycle and pedestrian facilities in two phases. Phase I would use portions of the existing roadway network in order to bypass the KPS Landfill. Phase II would be implemented upon the completion of CERCLA remediation activities for the landfill.

The typical construction (e.g., the width, material, and landscaping) for the trail would vary by location. In areas that are currently maintained as turf, the section would consist of a 10- to 12-foot-wide asphalt path that would meander around existing trees and wetlands. The trail would be landscaped with additional trees and plants. In environmentally sensitive areas, such as wetlands and river edges, the walkway would be constructed as a boardwalk. Other portions of the trail would include reconstructing existing roadways or constructing the trail in existing sidewalk areas. Impacts on archeological resources are described below.

Where ground-disturbing activities occur, impacts on archeological resources are generally adverse, direct, and long-term, and these impacts would vary depending on the type of activity and the amount of site area affected or the resource's relative loss of integrity. Examples of ground-disturbing activity include excavations required for bridge construction, grading of trails, preparation of the construction staging area, and landscaping. In this situation, it is not possible to fully assess impacts on archeological resources because the park does not have a complete inventory of National Register–eligible archeological resources. The precise locations of archeological sites that have been identified in the vicinity of the project area are mostly unknown, because most of these sites were identified on the basis of nonprofessional collectors and antiquarians who worked before modern times. It should be noted that many of the known sites in the park are deeply buried beneath fill deposits, which makes it difficult to identify these sites and to delineate their boundaries. At the same time, the fact that sites are deeply buried minimizes the likelihood that project-related impacts would occur. Future studies, including subsurface archeological investigations, would be necessary to establish site boundaries and assess the condition of these sites prior to a formal assessment of anticipated impacts. In the event that these studies identify National Register–eligible resources that would be subject to adverse effects, the NPS would develop mitigation measures in accordance with Section 106 of the NHPA.

Analysis

Alternative B consists of multi-use trail options that generally parallel the Anacostia River, with some locations farther inland. The typical construction (e.g., the width, material, and landscaping) for the trail section would vary by location, but would generally be on the order of 10 feet wide for new trail segments. Some sections of the trail would be on paved areas. The bridge would cross the Anacostia River upstream from the mouth of Hickey Run. Archeological resources have been identified in this general area, but their boundaries and condition have not been sufficiently well delineated to support a rigorous impact analysis. This is primarily a result of the fact that virtually all the archeological work that has been done in the study area predates modern mapping techniques, especially GIS. A number of major American Indian village sites were first identified in the late 19th century along this reach of the Anacostia River, but their locations have not been verified in modern times. Modern development has undoubtedly destroyed some of the archeological sites that were first identified more than a century ago, but it is also likely that some archeological resources are still preserved.

Phase I

In preparation for construction activities in areas currently maintained as turf or natural vegetation, heavy machinery would be used to remove the top layers of soil. The paved sections of the trail would be 10 inches deep and would be placed at grade. Clearing and grubbing to prepare the sites would be approximately 1 foot in grassy areas and approximately 3 feet in areas with substantial tree roots. Areas with inadequate subgrade would have approximately 12 inches of undercut below the pavement box. The undercut areas would then be replaced with 12 inches of gravel on a layer of geotextile. In areas of known or suspected soil contamination, the trail would be elevated and would result in no ground disturbance; therefore, any archeological resources in these areas would not be affected.

The pedestrian bridge would require the construction of abutments on both sides of the river, which would involve relatively deep ground disturbance. On the east side of the river, it is assumed that there is little potential for the preservation of archeological resources, given the previous construction of the seawall and the landfill. On the west, the prior construction of the seawall would have presumably resulted in at least a partial loss of any archeological resources in this area, if any had existed in that location. The nearest previously recorded archeological site along the western shoreline of the river is Site 51NE012, and its location might be somewhere within one-half mile from the bridge crossing. Additionally, NPS land on the west side of the river is an active floodplain where potential archeological resources may have been buried by recent flood-deposited sediment or dredging from river channel maintenance.

Archeological sites in surface or near-surface settings would suffer adverse impacts from new construction; however, it is assumed that most archeological resources are buried beneath fill deposits or modern floodplain deposits, so the impacts might range from negligible to minor in most cases. The locations and depths of fill material have not been delineated in the study area; it is assumed that there are areas of fill related to the maintenance of the river channel, and it is clear that there are massive fill deposits associated with the Kenilworth Park Landfill. Mitigation of potential adverse effects from the proposed trail construction would be accomplished by future studies to identify and document National Register–eligible resources in the APE. These studies would include a geoarcheological study and an archeological identification and evaluation study — possibly followed by an archeological data recovery program — that would be completed prior to construction. Alternatively, the NPS would develop a program of construction monitoring and archeological documentation that would be implemented during the construction phase of the project.

Phase II

The phase II alignment would involve new construction for the central section of the study area, a segment that runs very close to the Anacostia River shoreline.

Because it is unknown whether National Register–eligible archeological resources exist along the phase II alignment, it is not possible to complete a rigorous impact analysis. Ground-disturbing activities would generally be limited to the uppermost 1.5 feet of the soil column within a roughly 10-foot-wide corridor, except at the bridge crossing and at the construction staging area. Potential impacts on archeological resources may range from negligible to minor and adverse, depending on the depth of recent flood-deposited sediment or fill. Mitigation of potential adverse effects from the proposed trail construction would be accomplished by future studies to identify and document National Register–eligible resources in the APE. These studies would include a geoarcheological study, possibly followed by an archeological identification and evaluation study and ultimately an archeological data recovery program, depending on the results of the initial geoarcheological investigation. This program would be completed prior to construction. Alternatively, the NPS would develop a program of construction monitoring and archeological documentation that would be implemented during the construction phase of the project. The former option would involve a program of archeological study in advance of construction, while the latter would involve a program of archeological study during construction.

Cumulative Impacts

None of the projects considered in the cumulative impact analysis for this EA would have any effect on archeological resources in the study area, nor is it possible to identify a specific intensity of impacts that might occur from implementation of alternative B, because the presence of National Register–eligible archeological resources in the study area is not known. Therefore, no cumulative effects would be anticipated as a result of alternative B.

Conclusion

Adverse impacts on archeological resources could range from negligible to minor, depending on the relative loss of integrity and information potential. It is generally assumed that any impacts on archeological resources would be direct and long-term. For the purposes of Section 106, it is assumed that there would be *no adverse effect,* given the relatively small amount of ground disturbance that would be required for construction of the new trails, the bridge, and the staging area. A number of archeological resources were identified in the study area vicinity during previous studies (see table 3-4), but the location and condition of these sites has not been verified in modern times. To mitigate potential adverse impacts on archeological resources, the NPS would develop appropriate mitigation measures in future Section 106 consultation. Most likely, these mitigation measures would include a geoarcheological investigation that might be followed by an archeological inventory and evaluation study, followed by appropriate documentation for any National Register–eligible resources that could not be avoided during construction. Alternatively, the NPS would develop and implement a program of construction monitoring to document archeological resources during the construction phase of the project.

CHAPTER 5: CONSULTATION AND COORDINATION

Coordination with state and federal agencies was conducted during the NEPA process to identify issues and/or concerns related to natural and cultural resources in Anacostia Park.

All consultations with the DC HPO, as mandated in Section 106 of NHPA, are occurring as part of the development of this EA. The proposed activities have the potential to impact two National Register–listed or National Register–eligible properties and two properties that may be National Register eligible but which has not been formally evaluated:

- Kenilworth Aquatic Gardens (National Register listed)
- Anacostia Park (National Register eligible)
- Anacostia River Seawall (potentially National Register eligible)
- Langston Golf Course (National Register listed)

Archeological sites may exist in the project area as well.

The NPS began coordination with the DC HPO regarding the Section 3 ARW Trail realignment in 2010. A revised section 106 consultation letter to include the pedestrian bridge was sent to the DC HPO in April 2011 (see appendix A). No formal response has yet been received and coordination and consultation is still ongoing. This EA includes an assessment of effect under Section 106 of the NHPA in the "Environmental Consequences" section under "Cultural Resources," and a copy of this EA will be sent to the DC HPO to complete the Section 106 compliance. The DDOT previously consulted with the Maryland Historic Trust in 2004, and the proposed Section 3 alignment in Maryland has not changed. The Maryland Historic Trust responded that no historic resources would be affected.

In accordance with Section 7 of the Endangered Species Act of 1973, in April 2009 the NPS sent a letter to solicit comments from the USFWS regarding the existence of threatened or endangered species in the project area. In April 2009 the USFWS responded, confirming that there are no threatened or endangered species in the project area (see appendix A).

In April 2009 the NPS sent a letter to the MDNR Wildlife and Heritage Division and the District Department of the Environment to request information on rare, threatened, and endangered species in the project area. The MDNR responded in April 2009, stating that "there are no State or Federal records for rare, threatened, or endangered species within the boundaries of the project site" (see appendix A). The District Department of the Environment has not yet responded.

LIST OF PREPARERS

U.S. DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE

NATIONAL CAPITAL REGION

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David Plakorus, Environmental Planner

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Julia Yuan, Environmental Scientist

GLOSSARY AND ACRONYMS

GLOSSARY OF TERMS

Affected environment — The existing environment to be affected by a proposed action and alternatives.

Archeological resource — Any material remnants or physical evidence of past human life or activities which are of archeological interest, including the record of the effects of human activities on the environment. They are capable of revealing scientific or humanistic information through archeological research. Any material remnants of human life or activities which are at least 100 years of age, and which are of archeological interest (32 CFR 229.3(a)).

Archeological survey — Archeological survey is the process of using explicitly specified methods to prospect for archeological sites- appropriate survey methods vary widely for different environments and archeological resource types.

Artifact — A material object made or modified in whole or in part by man. Among the most common artifacts on archeological sites are fragments of broken pottery (sherds), stone tools, chips (debitage), projectile points, and similar lithic debris.

Consultation — The act of seeking and considering the opinions and recommendations of appropriate parties about undertakings that might affect properties on the National Register. Appropriate parties ordinarily include the State Historic Preservation Officer and Advisory Council on Historic Preservation. Consultation is very formal and procedurally oriented. Correct procedures are promulgated in 36 CFR 800.

Contributing resource — A building, site, structure, or object that adds to the historic significance of a National Register property or district.

Council on Environmental Quality (CEQ) — Established by Congress within the Executive Office of the President with passage of NEPA. CEQ coordinates federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives.

Criteria of effect — Standards promulgated by Advisory Council on Historic Preservation in (36 CFR 800) and applied to determine whether an undertaking will affect any property on National Register.

> *Effect*: Federal action on a National Register–listed or eligible property that results in a change, beneficial or adverse, in the quality or characteristics that qualify the property for inclusion on the National Register.
>
> *Adverse Effect*: Action that results in the total or partial destruction or alteration of an National Register–listed or eligible property. Adverse effect may also result if a property is isolated from its surrounding environment, if neglect of the property results in the deterioration or destruction of the property, and/or if the land occupied by the property is sold or transferred, and there are no provisions in the deed or transfer agreement to provide for the preservation, maintenance, or use of the property, etc.

Cultural landscape — A geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values.

Cultural resources — Historic districts, sites, buildings, objects, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or any other reason.

Enabling legislation — NPS legislation setting forth the legal parameters by which each park may operate.

Environmental assessment (EA) — An environmental analysis prepared pursuant to NEPA to determine whether a federal action would significantly affect the environment and thus require a more detailed EIS.

Ethnographic resource — A site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it.

Executive Order — Official proclamation issued by the President that may set forth policy or direction or establish specific duties in connection with the execution of federal laws and programs.

Historic district — A geographically definable area, urban or rural, possessing a significant concentration, linkage, or continuity of sites, landscapes, structures, or objects, united by past events or aesthetically by plan or physical developments. A district may also be composed of individual elements separated geographically but linked by association or history.

Museum object — Assemblage of archeological objects, objects, works of art, historic documents, and/or natural history specimens collected according to a rational scheme and maintained so they can be preserved, studied, and interpreted for public benefit. Museum objects normally are kept in park museums, although they may also be maintained in archeological and historic preservation centers.

National Environmental Policy Act of 1969 (42 USC 4321–4347) (NEPA) — The act as amended articulates the federal law that mandates protecting the quality of the human environment. It requires federal agencies to systematically assess the environmental impacts of their proposed activities, programs, and projects including the "no action" alternative of not pursuing the proposed action. NEPA requires agencies to consider alternative ways of accomplishing their missions in ways which are less damaging to the environment.

National Historic Preservation Act of 1966 (16 USC 470 et seq.) (NHPA) — An act to establish a program for the preservation of historic properties throughout the nation, and for other purposes, approved October 15, 1966 (Public Law [PL] 89-665; 80 STAT. 915; 16 USC 470 as amended by PL 91-243, PL 93-54, PL 94-422, PL 94-458, PL 96-199, PL 96-244, PL 96-515, PL 98-483, PL 99-514, PL 100-127, and PL 102-575).

National Register of Historic Places (National Register) — A register of districts, sites, buildings, structures, and objects important in American history, architecture, archeology, and culture, maintained by the Secretary of the Interior under authority of section 2(b) of the Historic Sites Act of 1935 and section 101(a)(1) of the NHPA of 1966, as amended. The National Register provides for three levels of significance: national, state, and local.

NPS Organic Act of 1916 — Enacted in 1916, this act commits the NPS to making informed decisions that perpetuate the conservation and protection of park resources unimpaired for the benefit and enjoyment of future generations.

Planning, Environment, and Public Comment (PEPC) — The NPS website for public involvement. This site provides access to current plans, environmental impact analyses, and related documents on public review. Users of the site can submit comments for documents available for public review.

Programmatic Agreement — A written agreement among a federal agency, State Historic Preservation Officer, and Advisory Council on Historic Preservation that stipulates how a program or a class of undertakings repetitive in nature or similar in effect will be carried out so as to avoid or mitigate adverse effects on cultural resources.

Scoping — Scoping, as part of NEPA, requires examining a proposed action and its possible impacts; establishing the depth of environmental analysis needed; determining analysis procedures, data needed, and task assignments. The public is encouraged to participate and submit comments on proposed projects during the scoping period.

Section 106 — Refers to Section 106 of the NHPA of 1966, which requires federal agencies to take into account the effects of their proposed undertakings on properties included or eligible for inclusion in the National Register and give the Advisory Council on Historic Preservation a reasonable opportunity to comment on the proposed undertakings.

Significance — Significance of cultural resources is evaluated in terms of National Register criteria published in 36 CFR 60.

ACRONYMS

APE	area of potential effect
ARW	Anacostia Riverwalk
AWI	Anacostia Waterfront Initiative
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CLI	cultural landscape inventory
DBH	diameter at breast height
DC HPO	District of Columbia Historic Preservation Officer
DDOT	District Department of Transportation
DM	Departmental Manual
EA	environmental assessment
EIS	environmental impact statement
HTL	high tide line
KPN	Kenilworth Park Landfill North
KPS	Kenilworth Park Landfill South
LCS	List of Classified Structures
MDNR	Maryland Department of Natural Resources
MHW	mean high water
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NWI	National Wetlands Inventory
PEPC	Planning, Environment, and Public Comment (NPS website)
PEPCO	Potomac Electric Power Company
PL	Public Law
USACE	U.S. Army Corps of Engineers

USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service

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APPENDIX A
Agency Consultation Letters

United States Department of the Interior
U.S. Fish & Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401
410/573 4575

Online Certification Letter

Today's date: April 8, 2009
Project: Anacostia Riverwalk Trail Project

Dear Applicant for online certification:

Thank you for choosing to use the U.S. Fish and Wildlife Service Chesapeake Bay Field Office online list request certification resource. This letter confirms that you have reviewed the conditions in which this online service can be used. On our website (www.fws.gov/chesapeakebay) are the USGS topographic map areas where **no** federally proposed or listed endangered or threatened species are known to occur in Maryland, Washington D.C. and Delaware.

You have indicated that your project is located on the following USGS topographic map
Washington East
Based on this information and in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), we certify that except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project area. Therefore, no Biological Assessment or further section 7 consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For additional information on threatened or endangered species in Maryland, you should contact the Maryland Wildlife and Heritage Division at (410) 260-8540. For information in Delaware you should contact the Delaware Natural Heritage and Endangered Species Program, at (302) 653-2880. For information in the District of Columbia, you should contact the National Park Service at (202) 535-1739.

The U.S. Fish and Wildlife Service also works with other Federal agencies and states to minimize loss of wetlands, reduce impacts to fish and migratory birds, including bald eagles, and restore habitat for wildlife. Information on these conservation issues and how development projects can avoid affecting these resources can be found on our website (www.fws.gov/chesapeakebay).

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further

assistance, please contact Chesapeake Bay Field Office Threatened and Endangered Species program at (410) 573-4531.

Sincerely,

Leopoldo Miranda
Field Supervisor

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
John R. Griffin, Secretary
Eric Schwaab, Deputy Secretary

April 30, 2009

Michael Cunningham
Rummel, Klepper, and Kahl, LLP
81 Mosher St.
Baltimore, MD 21217-4250

RE: Environmental Review for Anacostia Riverwalk Trail Project, DC DOT – Anacostia River to MD Line to Bladensburg Trail, Prince George's County, MD.

Dear Mr. Cunningham:

The Wildlife and Heritage Service has determined that there are no State or Federal records for rare, threatened or endangered species within the boundaries of the project site as delineated. As a result, we have no specific comments or requirements pertaining to protection measures at this time. This statement should not be interpreted however as meaning that rare, threatened or endangered species are not in fact present. If appropriate habitat is available, certain species could be present without documentation because adequate surveys have not been conducted.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,

Lori A. Byrne

Lori A. Byrne,
Environmental Review Coordinator
Wildlife and Heritage Service
MD Dept. of Natural Resources

ER# 2009.0594

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Fax: 410-728-2992
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April 6, 2009

Mr. Greg Golden
Maryland Department of Natural Resources
Environmental Review
Tawes State Office Building, E-1
580 Taylor Avenue
Annapolis, Maryland 21401

Project Anacostia Riverwalk Trail Project
Prince George's County, Maryland

Subject: Request for Information on Project Area Fisheries Resources

Dear Mr. Golden:

We are providing engineering and environmental services to the District of Columbia, Department of Transportation relating to design and construction of the Anacostia Riverwalk Trail along the Anacostia River. The proposed alignment for the portion of the multi-use trail located in Maryland travels northeast along the eastern streambank and floodplain of the Anacostia River from the District of Columbia/Maryland state line, and connects into the Bladensburg Trail on Maryland-National Capital Park and Planning Commission property shortly after it crosses over an unnamed tributary to the Anacostia River. In addition to the Anacostia River, field investigations suggest that the unnamed tributary, and other wetlands identified near the alignment, are jurisdictional Waters of the U.S. (WUS). Geotechnical investigations and trail construction are expected to result in impacts to some of these WUS, which will require applying for both state and federal permit authorizations (Section 404/401). A map of the Project Area is enclosed to aid your review.

We are requesting information regarding the potential presence of state fisheries resources within or near the project area. If you have any questions concerning this project and/or the information requested, please contact me at (410) 462-9346. Thank you for your assistance.

Sincerely,
Rummel, Klepper and Kahl, LLP

Michael Cunningham
Environmental Scientist

Encl.
cc: RM, GRO, RJA (RK&K)
Allen Miller, DDOT

Coordination Sheet for Maryland Department of Natural Resources, Environmental Review Unit information on fisheries resources, including anadromous fish, related to project locations and study areas

DATE OF REQUEST: April 6, 2009

PROJECT NAME AND LOCATION: Anacostia Riverwalk Trail
Project is located near Cheverly, MD in Prince George's County on ADC Map 12 D-10. Proposed trail alignment is along eastern streambank and floodplain of the Anacostia River from the New York Ave. bridge to the Bladensburg Trail.

NAME OF STREAM(S) (and MDE Use Classification) WITHIN THE STUDY AREA:
Anacostia River, Use I-P
Unnamed tributary to Anacostia River, Use I-P

SUB-BASIN (6 digit watershed): 02-14-02 Washington Metropolitan Area

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DNR RESPONSE (sections below to be completed by MD DNR):

____Generally, no instream work is permitted in Use I streams during the period of March 1 through June 15, inclusive, during any year.

____Where presence of yellow perch has been documented in the vicinity of an instream project area, generally no instream work is permitted in Use I and Certain Use II waters during the period of February 15 through June 15, inclusive, during any year.

____Generally, no instream work is permitted in Use III streams during the period of October 1 through April 30, inclusive, during any year.

____Generally, no instream work is permitted in Use IV streams during the period of March 1 through May 31, inclusive, during any year.

____Other applicable site specific time of year restriction information:

ADDITIONAL FISHERIES RESOURCE NOTES:

ADDITIONAL COMMENTS ON BEST MANAGEMENT PRACTICES:

MD DNR, Environmental Review Unit signature

XXXXX

DATE: ----------
PHONE: 410-260-8334

81 Mosher Street | Baltimore, MD 21217 | P 410.728.2900 | T 800.787.3755 | www.rkk.com

September 29, 2009

Mr. Ibrahim Bullo
District Department of the Environment
51 N Street, NE
Washington, D.C. 20002

Project: Anacostia Riverwalk Trail Project
District of Columbia

Subject: Request for Information on State Listed Rare, Threatened and Endangered Species

Dear Mr. Bullo:

We are providing engineering and environmental services to the District of Columbia, Department of Transportation relating to design and construction of the Anacostia Riverwalk Trail along the Anacostia River. The proposed alignment for the portion of the multi-use trail located in the District of Columbia travels northeast along the eastern streambank and floodplain of the Anacostia River from the existing trail segment at Benning Road to the District of Columbia/Maryland state line. In addition to the Anacostia River, field investigations suggest that wetlands identified near the alignment are jurisdictional Waters of the U.S. (WUS). Geotechnical investigations and trail construction are expected to result in impacts to some of these WUS, which will require applying for both District of Columbia and federal permit authorizations (Section 404/401). A map of the Project Area is enclosed to aid your review.

We are requesting information regarding the potential presence of District of Columbia listed rare, threatened or endangered species within or near the project area. If you have any questions concerning this project and/or the information requested, please contact me at (410) 462-9165. Thank you for your assistance.

Sincerely,
Rummel, Klepper and Kahl, LLP

Greg O'Hare, L.P.F.
Senior Project Scientist

Encl.

cc: RM, RJA - RK&K
Allen Miller - DDOT

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Klepper
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William K. Hellmann
Emeritus

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RECEIVED
APR 13 2009
By

F COE
EJ

April 6, 2009

2009 01210

Ms. Elizabeth Cole
Project Review and Compliance
Maryland Historical Trust
100 Community Place
Crownsville, MD 21032

RECEIVED
APR 29 2009
RUMMEL, KLEPPER & KAHL, LLP

Project **Anacostia Riverwalk Trail Project**
Prince George's County, Maryland

Subject: Request for Cultural Resource Information

Dear Ms. Cole:

We are providing engineering and environmental services to the District of Columbia, Department of Transportation relating to design and construction of the Anacostia Riverwalk Trail along the Anacostia River. The proposed alignment for the portion of the multi-use trail located in Maryland travels northeast along the eastern streambank and floodplain of the Anacostia River from the District of Columbia/Maryland state line, and connects into the Bladensburg Trail on Maryland-National Capital Park and Planning Commission property shortly after it crosses over an unnamed tributary to the Anacostia River. In addition to the Anacostia River, field investigations suggest that the unnamed tributary, and other wetlands identified near the alignment, are jurisdictional Waters of the U.S. (WUS). Geotechnical investigations and trail construction are expected to result in impacts to some of these WUS, which will require applying for both state and federal permit authorizations (Section 404/401). A map of the Project Area is enclosed to aid your review. A map of the Project Area is enclosed to aid your review.

We are requesting information regarding the presence of any important cultural resources in the project area. If you have any questions concerning this project and/or the information requested, please contact me at (410) 462-9346. Thank you for your assistance.

Sincerely,
Rummel, Klepper and Kahl, LLP

Michael Cunningham
Environmental Scientist

Encl.
cc: RM, GRO, RJA (RK&K)
Allen Miller, DDOT

The Maryland Historical Trust has determined that there are no historic properties affected by this undertaking.
4/27/09
Date

NR listed
BW Pkwy limits PG:69-26
2004 03818
Prior NRS Review in 2004 #13 BC 4/27/09

JA2/108-069

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April 6, 2009

Ruth Trocolli, Ph.D.
City Archaeologist
Historic Preservation Office
Office of Planning
2000 14th Street, NW
4th Floor (Reeves Center)
Washington, DC 20009

Project: **Anacostia Riverwalk Trail**
Kenilworth Trail Section – Design Section 3

Subject: **Request for Cultural Resource Information**

Dear Dr. Trocolli:

The District of Columbia Department of Transportation (DDOT) has contracted with Rummel Klepper and Kahl, LLP and EAC/Archaeology, Inc. to provide complete design plans and specifications for the Anacostia Riverwalk Trail Kenilworth Trail Section – Design Section 3. The proposed trail alignment runs along the east side of the Anacostia River from the end of the Bladensburg Path in Prince George's County and extending south along the east bank of the Anacostia River to the existing path terminus under the Benning Road bridge, a distance of approximately 3.3 miles. While the majority of the proposed trail is located within the District, approximately 1800 feet of the proposed trail that is north of New York Avenue is located within Prince George's County, MD. A vicinity map and a set of the preliminary design plans for the proposed trail are enclosed.

RK&K/EAC/A are continuing Section 106 coordination initiated as part of the Environmental Assessment (December 2004) completed for the entire Anacostia Riverwalk Trail by the National Park Service and DDOT. The Environmental Assessment included a review of information collected from DC Historic Preservation Office (DCHPO), the National Park Service's National Capital Parks-East offices (NPS), and the Maryland Historic Trust (MHT). The proposed APE for historic and archaeological resources is located approximately 50 feet outside the edge of the proposed trail to accommodate proposed grading and construction. The EA determined that there are no known historic structures and that there is one known archeological site within the APE of the Kenilworth Trail Section. The known archeological site (51NE1) is located near the confluence of Lower Beaver Dam Creek with the Anacostia River. (see enclosed Figure 3-3 from the EA). Since the precise location of site 51NE1 is unknown, potential construction impacts are unknown at this time as is the degree of site disturbance.

We understand that the federal/state permit authorization warrants further review of the project for Section 106 compliance with your office as well as the National Park Service and the Maryland Historic Trust. Consequently, we are requesting guidance concerning archaeological and architectural requirements for the proposed Anacostia Riverwalk Kenilworth Trail Section prior to construction.

If you have any questions concerning this project and/or the information requested, please contact me at 410-462-9247 or Elizabeth Comer at 410-443-6767. Thank you very much for your time and assistance.

Sincerely,

Richard J. Adams Jr., P.E.
Associate

cc: Mr. Stephen Syphax, NPS
Ms. Elizabeth Cole, MHT
Mr. Allen Miller, DDOT
Ms. Elizabeth Comer, EAC/A
JAZ/108-069
RJA/JCW
RM/GRO

APPENDIX B
Draft Statement of Findings

STATEMENT OF FINDINGS

FOR

EXECUTIVE ORDER 11988, "FLOODPLAIN MANAGEMENT"

Anacostia Riverwalk Trail Section 3 Realignment

Environmental Assessment

Anacostia Park

Recommended: _____ _____

Alexcy Romero, Superintendent, Anacostia Park — Date

Certification of
Technical Adequacy and
Servicewide Consistency: _____ _____

Chief, Water Resources Division — Date

Approved: _____ _____

Steve Whitesell, Regional Director, National Capital Region — Date

STATEMENT OF FINDINGS

Anacostia Park (the park) has prepared an environmental assessment (EA) for the construction of Section 3 of the Anacostia Riverwalk Trail, located in Washington, D.C., and Montgomery County, Maryland.

Executive Order 11988, "Floodplain Management," requires the National Park Service (NPS) and other federal agencies to evaluate the likely impacts of actions in floodplains. The objective of Executive Order 11988 is to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. NPS Director's Order 77-2: *Floodplain Management* and Procedural Manual 77-2 provide NPS policies and procedures for complying with Executive Order 11988. This Statement of Findings documents compliance with these NPS floodplain management procedures.

PROPOSED ACTION

Alternative B (the NPS preferred alternative) proposes to construct the trail within the Kenilworth portion of Anacostia Park. The trail is proposed to be constructed in two phases (see figure 1). Phase I would connect the southern portions of Anacostia Park with the Kenilworth Aquatic Gardens and the Bladensburg Trail in Montgomery County, Maryland. Under this phase the existing trail that currently ends near the Benning Road Bridge would be extended north, running parallel with the Anacostia River until it reaches the District Department of Public Works Trash Transfer Station, where the trail would turn east and run along the eastern and then the northern side of the Kenilworth Park Landfill. From this point the trail would run parallel to the Anacostia River, through the Kenilworth Aquatic Gardens, until it connects with the Bladensburg Trail.

Phase I would also include the construction of a pedestrian bridge over the Anacostia River where the Watts Branch meets the river. This bridge would lead into the U.S. National Arboretum and would include a small amount of trail on the western side of the river allowing visitor access to the National Arboretum. A small spur trail would also continue to the north, along an existing dirt path. The bridge and trails on the western side of the Anacostia River would be located within the 100-year floodplain. Phase I would also include a small dock in the immediate area of the eastern bridge abutment.

Phase II of the project is the final alignment of the trail, which would run continuously parallel to the Anacostia River from the Benning Road Bridge through the Kenilworth Park Landfill, then connect to the phase I alignment at the pedestrian bridge.

Trail materials and width would vary throughout the different trail locations. In phase I, the trail would use existing trails and sidewalks and would include the construction of paved trails and elevated boardwalk structures. Trail width would range from 8 to 14 feet and the trail would include a bridge made of concrete that would be 14 feet wide with a 16-foot clearance above the Anacostia River, above the floodplain line. Phase II would consist of a paved trail ranging from 10 to 12 feet wide.

Figure 1. Proposed Section 3 Realignment

SITE DESCRIPTION

The pedestrian bridge and the majority of the trail on the western side of the Anacostia River would be located within the 100-year floodplain of the Anacostia River. A “100-year floodplain” or “100-year flood” describes an area or event subject to a 1 percent probability of a certain size flood occurring in any given year. Figure 2 provides the proposed bridge alignment within the 100-year floodplain.

For a specific community, the Federal Emergency Management Agency (FEMA) produces a Flood Insurance Rate Map (FIRM) that identifies special hazard areas and the risk premium zones applicable to the community. The FIRM applicable to the project area is community panel number 1100011100010037 C, revised September 27, 2010. A review of the FIRM indicates that the preferred alternative is located within Zone AE. This zone is defined as an area within the 100-year floodplain that has had base flood elevations and flood hazard factors determined.

Flooding is a natural process that forms and maintains river corridors. Periodic flows of water that overtop the banks of a river are the lifeblood of the riparian corridors and marshes. The seasonal variability of flow and intermittent extreme events combine to determine the physical structure and biological diversity of floodplains. Seasonal and storm-generated variations in water flow, including periodic flooding, are part of the normal function of the floodplain. Inundation of these areas outside the river bank keeps erosion and accretion in equilibrium, replenishes soils, and recharges groundwater. High flows are critical to maintaining vegetation because they transport sediment and nutrients from the river to the connecting floodplain (AFSPM 2008). The ecological integrity of a floodplain depends on the supply of water, sediment, and nutrients and the stability of vegetation in the flood zone (AFSPM 2008).

There is no record of a major flood event in the immediate vicinity of the project area. The Anacostia River occasionally floods due to stormwater runoff; however, flooding during these events is typically at the confluence of the Anacostia and Potomac Rivers, leaving the project area unaffected.

JUSTIFICATION FOR USE OF THE FLOODPLAIN

The purpose of the proposed action, to improve visitor experience and increase connectivity between Anacostia Park and the National Arboretum across the river from the Kenilworth Park section of Anacostia Park, makes the construction of a bridge and a trail within the floodplain necessary. Additionally, the nature of the trail and the pedestrian bridge would result in a minimal amount of new disturbance in the area of the floodplain. Since the majority of the proposed bridge is above the floodplain and because the trail would not add more than 6 inches of fill to the floodplain, the proposed project would not impede or accelerate high flows or inhibit the ability of the floodplain to disperse volume and energy of potential floodwaters from the Anacostia River.

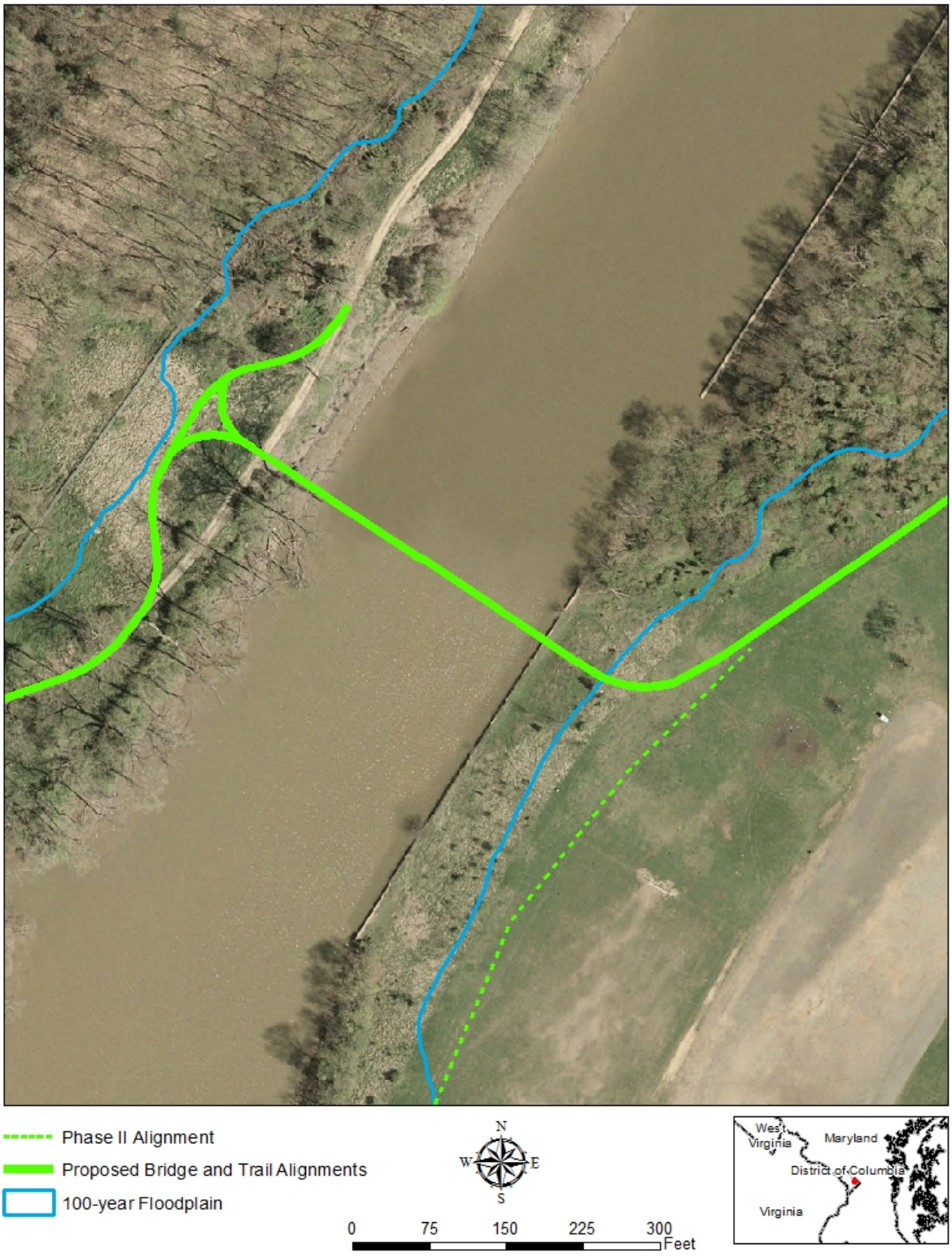

Figure 2. Proposed Bridge and Trail Alignments within the 100-year Floodplain

MITIGATION ACTIONS

Avoidance and minimization measures would be applied throughout the project design and construction to reduce impacts on sensitive resources. As stated above, the construction of the bridge and trail would not substantially alter the existing grades or drainage patterns of the site. Existing vegetation would be removed only as required during initial site preparation operations and only to the extent necessary to construct the bridge and trail.

Erosion- and sediment-control measures would be designed in accordance with best management practices and specifications for erosion and sediment control as given by the District of Columbia and the State of Maryland. At the onset of construction, stabilized construction entrances would be provided to limit tracking of sediment off site. Silt fencing would be used to establish perimeter erosion and sediment control around the site limits of disturbance. Such measures would be maintained by the contractor or park staff for the duration of construction activities.

At the conclusion of construction, disturbed areas would be graded to match preconstruction conditions, where feasible. Final site restoration would include seeding all pervious areas that were disturbed by construction. Only native plant seed mixtures approved by park staff would be used. Any areas that were natural prior to construction activities would be rehabilitated using native plant materials approved by the NPS, in accordance with the NPS National Capital Region (NCR) *Revegetation/Reclamation Guidelines* (NPS NCR 2001) and *Tree Valuation Guidelines* (NPS NCR 2004).

CONCLUSION

Although portions of the construction of the proposed bridge and trail would be located within the 100-year floodplain, the action would not result in changes to floodplain function or increases in upstream or downstream flooding. The bridges, small dock, and trail would be designed in a manner that would not impede or accelerate high flows or inhibit the ability of the floodplain to disperse the volume and energy of floodwaters from the Anacostia River. Thus, there would be negligible impacts on floodplain functions or values from the proposed construction.

As the nation’s principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historic places, and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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