National Park Service
US Department of the Interior

Anacostia Park
Washington, DC

Anacostia Park Management Plan Environmental Assessment

February 2017

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US Department of the Interior
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National Capital Parks–East
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Management Plan/Environmental Assessment

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Anacostia Park (the park) is a unit of the national park system managed by National Capital Parks–East (NACE). It encompasses approximately 1,108 acres of land composed of natural areas, cultural sites, managed waterfront areas, and public recreation facilities along the shores of the Anacostia River in Washington, DC. The park came under the jurisdiction of the National Park Service in 1933, followed by Kenilworth Park and Aquatic Gardens in 1938, both under the authority of Public Law 71-284, the Capper-Cramton Act. The legislation mandated the National Park Service to preserve the flow of water and prevent pollution in Rock Creek and the Potomac and Anacostia Rivers, to preserve forests and the natural scenery in and about Washington, and to provide recreational opportunities in the nation's capital.

This management plan/environmental assessment (management plan) is the primary guidance document for managing the park for the next 15 to 20 years. It identifies the preferred vision for the future of the park and provides the framework for decision making regarding management of the park's natural and cultural resources and the types of visitor experiences that the park will offer.

This management plan examines four alternatives: a no-action alternative (alternative 1) and three action alternatives (alternatives 2, 3, and 4). All action alternatives propose the use of management zones throughout the park to determine appropriate activities, development, and visitor experience of park areas. Each action alternative divides the park into these zones in different configurations with a combination of recreational opportunities and natural area restoration. The National Park Service (NPS) has identified alternative 3 as the preferred alternative because this alternative best meets the project's purpose and need and would provide the most flexibility in providing recreation opportunities and resource protection in the park. The action alternatives would have very similar impacts on park resources. All action alternatives would result in both beneficial and adverse impacts on soils and sediments, wetlands, upland vegetation, floodplains, archeological resources, and cultural resources.

Note to Reviewers and Respondents:
If you wish to comment on this management plan, you may post comments electronically at http://parkplanning.nps.gov/anacostiagmp or you may mail comments within 30 days of the start of the review period to the name and address below. Before including your address, phone number, email 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 will be able to do so. Requests for further information can be directed to the address below:

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CONTENTS

LIST OF FIGURES

LIST OF TABLES

1

PURPOSE AND NEED

INTRODUCTION

This management plan/environmental assessment (management plan) for Anacostia Park (the park) is the primary guidance document for managing the park for the next 15 to 20 years. It identifies the preferred vision for the future of the park and provides the framework for decision making regarding management of the park's natural and cultural resources and the types of visitor experiences that the park will offer. This management plan is a programmatic document, and as such does not describe how particular programs or projects should be implemented. In a programmatic document, information needed to determine specific impacts may not be available at the time the document is being prepared. In this case, the impacts are evaluated to the fullest extent possible; when more detailed plans are determined, site-specific documentation will then be prepared which will follow from this programmatic management plan. More detailed plans—such as the park's strategic plan, annual performance plan, and project implementation plans—will address specific decisions and actions, developed in conformance with the goals, future conditions, and appropriate types of activities and facilities identified in this management plan.

This management plan describes four alternatives, including three action alternatives and the no-action alternative, and analyzes the potential impacts these alternatives would have on the natural, cultural, and human environment. This environmental assessment has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), as amended [42 United States Code (USC) 4332(2) (C)]; the implementing regulations of the Council on Environmental Quality (CEQ) [40 Code of Federal Regulations (CFR) 1500-1508.9]; the Department of the Interior NEPA regulations (43 CFR Part 46); and National Park Service (NPS) Director's Order (DO) #12: *Conservation Planning, Environmental Impact Analysis and Decision-Making* (DO-12) (NPS 2011) and the accompanying NPS NEPA Handbook (NPS 2015a).

Compliance with the National Historic Preservation Act of 1966 (16 USC §§ 470 et seq.) Section 106 is being completed separately from and concurrent with the NEPA process, and is not included in this environmental assessment. Applicable cultural resource information, including potential impacts associated with the proposed alternatives, is documented in this environmental assessment, but does not constitute Section 106 compliance.

SITE LOCATION/DESCRIPTION

Anacostia Park encompasses approximately 1,108 acres of parkland along the banks of the Anacostia River in Washington, DC (figure 1). The park is composed of natural areas, managed waterfront areas, and public recreation facilities. On the east bank of the river, the park generally extends from the District of Columbia/Maryland line south to the mouth of the Anacostia River at Poplar Point. On the west bank of the river, the park extends from the district line to the Pennsylvania Avenue Bridge. It also includes parts of the Southwest waterfront in southwest Washington, DC, including James Creek and Buzzard Point Park.

Several areas within the park are recognized by the public using local names, including Poplar Point, Anacostia Park (generally including the Fairlawn and Twining areas of the park), Kenilworth Aquatic Gardens, Langston Golf Course, and James Creek Marina.

Unless otherwise specified, the term “project area” applies to the park in general.

PURPOSE OF AND NEED FOR ACTION

PURPOSE

The National Park Service is preparing this management plan to provide management direction for the park. The purpose of this management plan is to develop a framework for future decision making consistent with the goals for the park; to provide broad guidance and long-term strategies for park operations, resource protection, and restoration; to promote partnership opportunities that will support and complement management of the park; and to define desired resource conditions and recommend actions that will lead to those conditions.

NEED

This management plan is needed to enable the park to achieve its vision. The vision is for the park to be a signature urban park that can serve as an example of how the National Park Service can provide high quality, inspirational, natural and cultural spaces close to home, as well as a wide range of recreational and educational opportunities for urban communities. This vision includes creating a management plan that encompasses the wide range of resources within the park. The vision is also to actively manage the park to improve and protect the quality and resiliency of the Anacostia River ecosystem. The National Park Service requires a management plan to guide decisions in managing park resources and visitor experiences in the park. The park needs a comprehensive plan that will guide management actions toward achieving this vision. Without a management plan, park managers would make decisions affecting sections of the park without an overall concept for the entire landscape; this would frequently be in response to immediate pressures and needs and would be reactive in nature rather than proactive. Making management decisions without a guiding plan could result in incompatible or undesirable land uses, missed opportunities to enhance the visitor experience, or untenable management commitments.

Anacostia Park

- Anacostia Boundary
- National Capital East Parks (NPS)
- Other Park Land
- Federal and District Land
- Military
- University
- Schoolground (DC)
- Existing Sports Field
- DDOT Transportation Projects
- 100 Year Flood Plain
- 500 Year Flood Plain
- Metro
- Potential Memorial Site

- Water Taxi - Existing
- Water Access (River Trail) - Existing
- Water Trail
- Anacostia Riverwalk Trail - Existing
- Anacostia Riverwalk Trail - Proposed
- Other Trail - Existing
- Pedestrian Entrances - Existing
- Vehicular Entrances - Existing

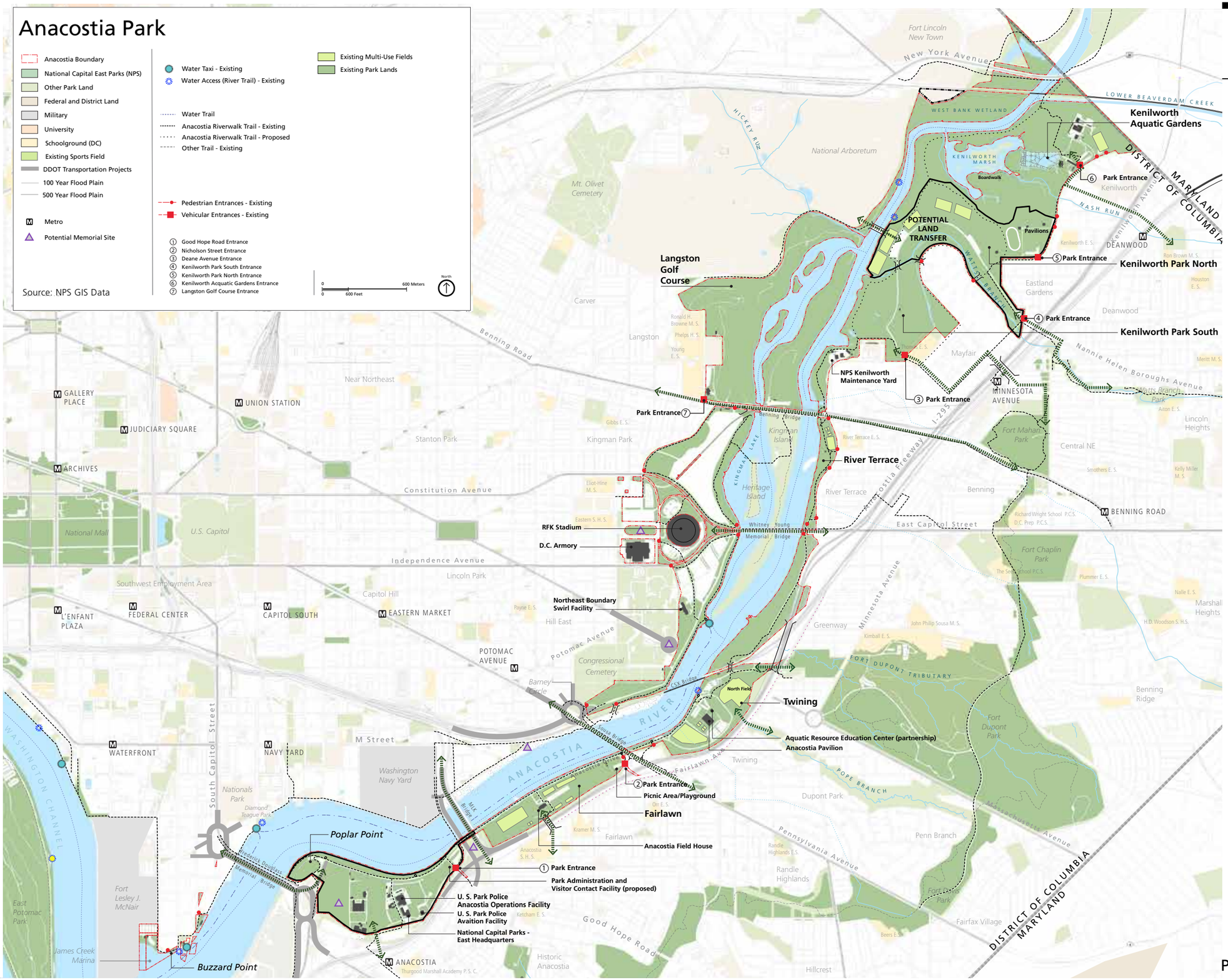
- Existing Multi-Use Fields
- Existing Park Lands

1. Good Hope Road Entrance
2. Nicholson Street Entrance
3. Deane Avenue Entrance
4. Kenilworth Park South Entrance
5. Kenilworth Park North Entrance
6. Kenilworth Acquatic Gardens Entrance
7. Langston Golf Course Entrance

0 600 Meters
0 600 Feet

North

Source: NPS GIS Data



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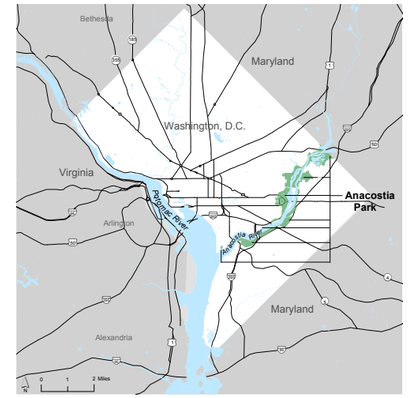

Management Plan Environmental Assessment

FIGURE 1
Project Vicinity and Existing Conditions

The plan is also needed to clarify the level of resource protection versus public use based on the park's purpose and significance; laws and policies that direct park management; the range of public expectations and concerns; site specific resources; and long-term economic costs of implementation. The plan would also help identify ways to help create and/or enhance partnership opportunities with neighbors and stakeholders.

PROJECT BACKGROUND

ORIGINS AND LEGISLATIVE HISTORY OF ANACOSTIA PARK

Most of the land known today as Anacostia Park was created under the authority of the Anacostia River Flats Act of 1914 (Public Law 63-145, 38 Stat. 517, 549). This act linked improvements to the navigable waterway of the Anacostia River with the creation of "new" land to help meet the needs of the growing population of the nation's capital. Under the auspices of the US Army Corps of Engineers (USACE), a seawall was constructed along the riverbanks, and materials dredged from the river bottom, as well as other fill that had to be brought in, were placed behind the seawall to fill the marshes. This quickly created a large amount of land that was held in place by the seawall itself. At the time, the tidal marshes along both sides of the river were considered sources of "filth, stench, and disease." This reclamation was intended to provide the dual function of eliminating a public health hazard while creating parkland for the enjoyment of the city's residents.

Additional appropriations were made through the District of Columbia Appropriations Act of 1918 (Public Law 66, 40 Stat. 950) for continuing reclamation and development of the Anacostia River and flats from the mouth of the river to the District of Columbia line; this enabled the creation of parkland that became a part of Anacostia Park. In 1924, legislation was passed that established the National Capital Park Commission (renamed the National Capital Park and Planning Commission in 1926 and then the National Capital Planning Commission [NCPC] in 1952). With this legislation, Anacostia Park became a part of the park, parkway, and playground system of the national capital (Public Law 68-202, 43 Stat. 463). The legislation identified three purposes for the park, parkway, and playground system, as follows:

- to prevent pollution of the Anacostia River (as well as Rock Creek and the Potomac River)
- to preserve the forest and natural scenery in and about Washington, DC
- to meet the park and recreation needs of Washington, DC residents

The Capper-Cramton Act of 1930 (Public Law 71-284, 46 Stat. 482, as amended) appropriated additional funds for the acquisition of land to develop and expand the comprehensive park, parkway, and playground system of the national capital. Included was additional funding for acquisition of land necessary for extension of the Anacostia Park system up the valley of the Anacostia River. In 1933, Executive Order 6166 transferred the National Capital Planning Commission's responsibilities for management of the park, parkway, and playground system—including Anacostia Park—to the National Park Service. With the transfer of the park, managers were required to comply with the specific purposes identified in the park's earlier establishing legislation while also following the National Park Service's legislative mission to conserve and protect park resources and to provide for use of the park in a manner that will leave it unimpaired for the enjoyment of future generations. Kenilworth Park and Aquatic

Gardens followed shortly thereafter, and came under the jurisdiction of the National Park Service in 1938, also under the authority of the Capper-Cramton Act.

This enabling legislation and legislative history was the basis for the park's purpose statement, which is laid out in the park's foundation document. The purpose statement, which lays the foundation for understanding the most important resources and values of the park, is as follows:

> Anacostia Park, which includes the Kenilworth Park and Aquatic Gardens, preserves forests and contributes to the protection of the water quality of the Anacostia River, protects historic, scenic, and natural resources and values, and provides high quality waterfront recreation opportunities for the local community and the visiting public (NPS 2016a).

LOCAL AND REGIONAL PLANNING EFFORTS

Local and regional partners are planning ongoing and future projects that interface with portions of Anacostia Park. These and other future projects necessitate a strong management framework, including a robust public involvement process, in order to ensure the park's vision and management direction are preserved amidst community growth and change. Table 1 below lists many of the local and regional planning efforts interfacing with the park. Actions that have or may contribute cumulative impacts on resources affected by this management plan are further described in chapter 3.

TABLE 1. LOCAL AND REGIONAL PLANNING EFFORTS

Comprehensive/Master Plans
Comprehensive Plan for Washington, DC (2011)
Extending the Legacy: Planning for America's Capital for the 21st Century
District of Columbia Bicycle Master Plan (2005)
Memorials and Museums Master Plan (2001)
Langston Golf Course Master Plan
Fort Circle Park General Management Plan (2004)
US National Arboretum Master Plan (2000)
Kingfisher Watertrail Master Plan and Public Access Project
Watershed Restoration/Revitalization
Executive Order 13508: "Chesapeake Bay Protection and Restoration" (2009)
Chesapeake Bay Agreement (2014)
Chesapeake Bay Program (1993)
Anacostia Watershed Restoration Plan
Tidal River Subwatershed Action Plan (2010)
Anacostia Waterfront Initiative (2000)
Anacostia Watershed Society
Anacostia Watershed Restoration Committee (1999)
Anacostia Watershed Toxics Alliance
Anacostia River Clean Up and Protection Act ("Bag Law")
Anacostia River Trash Reduction Plan
District of Columbia Wetland Conservation Plan (1997)
Green Marina Initiative (2001)

TABLE 1. LOCAL AND REGIONAL PLANNING EFFORTS (CONT.)

Trail/Access/Transportation
Chesapeake Bay Watershed Public Access Plan (2013)
Captain John Smith Chesapeake National Historic Trail Comprehensive Management Plan (2011)
Star-Spangled Banner National Historic Trail and Scenic Byway Comprehensive Management Plan (2012)
Potomac Heritage National Scenic Trail
East Coast Greenway
Anacostia Riverwalk Trail
Anacostia River Bicycle Trail
Bicycle and Pedestrian Plan for the National Capital Region (2006)
Paved Recreation Trails of the National Capital Region (1990)
Financially Constrained Long-Range Transportation Plan for the National Capital Region (2012)
Anacostia Transit Area Strategic Investment Plan (2004)
Benning Road Corridor Redevelopment Framework (2008)
Deanwood Strategic Development Plan (2008)
Pennsylvania Avenue, SE Corridor Development Plan (2008)
Nonmotorized Boating Special Study (1989)
South Capitol Street Corridor Project
Other Plans
Climate of Opportunity: A Climate Action Plan for the District of Columbia
Washington's Waterfronts (1999)
NCPC Report on Flooding and Stormwater (2006)
The Likelihood of Shore Protection in the District of Columbia
Capital Space: A Park System for the Nation's Capital (2010)
Sustainable DC Plan (2011)
DC Wildlife Action Plan
Anacostia Neighborhood Investment Fund Plan (2008)
Memorial Trends & Practice in Washington, DC (2012)
Congressional Cemetery Historic Landscape and Structures Report (2007)
Adopted Plans for Lands Adjoining Anacostia Park in Prince George's County, Maryland (1993, 1994)
DC Water and Sewer Authority Recommended Combined Sewer System Long-Term Control Plan (2002)
RFK Stadium Site Redevelopment Study (2006)
Capitol Riverside Youth Sports Park
Federal and District of Columbia Government Real Property Act of 2006 (DC Lands Act), P.L. 109-396, 120 Stat. 2711

PLANNING ISSUES AND CONCERNS RETAINED FOR DETAILED ANALYSIS

A planning issue is defined here as an opportunity, conflict, or problem regarding the use or management of the park. During the scoping process, specific considerations and concerns were identified as critical to this project area. Along with the purpose and need for the proposed action, the following issues guided the development of alternatives and contributed to the selection of impact topics.

Providing a variety of visitor experiences. Anacostia Park is accessed by a variety of users for the purposes of different visitor experiences, including both passive and active recreation. Any proposed management actions have the potential to affect visitor use and experience through aesthetics of the park,

opportunities for a variety of park uses, capacity of park facilities, and condition of the park facilities. The central management issue at the park relates to determining the appropriate mix, intensity, and location for different visitor experiences that should be offered at the park. Relevant laws, policies, and plans including NPS *Management Policies 2006* will inform the discussion of this issue. Potential impacts of the alternatives will be analyzed in detail under "Visitor Use and Experience" within the "Affected Environment and Environmental Consequences" chapter of this management plan.

Contaminated sites exist within or near parklands. Several sites within or near the park are undergoing investigation or remediation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). These areas were contaminated in the past due to decades of landfill operations and dumping, industrial waste disposal practices, and the use of pesticides and herbicides. Any management actions involving the disturbance of soils and sediments in, or other uses of, these areas have the potential to cause a secondary impact on human health or the environment. Relevant laws, policies, and plans including CERCLA and NPS *Management Policies 2006* will inform the discussion of this issue. Potential impacts of the alternatives will be analyzed in detail under "Soils and Sediments" and "Visitor Use and Experience" within the "Affected Environment and Environmental Consequences" chapter of this management plan.

Protecting important natural resource areas. The park's established purpose during its development in the early 20th century included prevention of pollution of the Anacostia River and preservation of the forest and natural scenery in and about Washington, DC. Today, the park—once composing the tidal flats and wetlands along the Anacostia River—bears little resemblance to its natural condition, except for sections at Kenilworth. Natural resource deterioration is widely recognized by the public, government agencies, and NPS staff as a primary issue at the park. Restoration, remediation, development, and redevelopment actions have the potential to affect, both beneficially and adversely, the local soils and sediments, wetlands, vegetation, habitat, ecological functionality, aesthetics, and floodplain capacity. It is important that any proposed management actions establish a plan for where and how environmental restoration and remediation management actions be implemented in the park. Relevant laws, policies, and plans including the *2013 Rule on Stormwater Management and Soil Erosion and Sediment Control*, Clean Water Act, CERCLA, and Executive Order 11990: "Protection of Wetlands" will inform the discussion of this issue. Potential impacts of the alternatives will be analyzed in detail under "Soils and Sediments," "Wetlands," "Upland Vegetation," and "Floodplains" within the "Affected Environment and Environmental Consequences" chapter of this management plan.

Enhanced access to park from adjacent communities. Public access to most areas of the park from adjoining neighborhoods and from the greater metropolitan area is severely constrained. The public and local agencies cite this as one of the most significant management issues facing the park. East of the river, poor access is due to construction of major roadways, bridges, and railroads that over time have cumulatively cut off much of the local access from neighborhoods. West of the river, I-395, the CSX Railroad, RFK Stadium, and security fencing around Congressional Cemetery, Langston Golf Course, and the US Department of Agriculture's National Arboretum combine to block access to adjoining neighborhoods. Issues regarding park access include motorized access from local and regional roadways, motorized travel and parking within the park, nonmotorized access and travel within the park, access to the park via public transportation, and access to the park from the Anacostia River. Proposed management actions should address where and how access to the park could be enhanced from adjacent communities

and the region, while minimizing potential impacts on adjacent communities due to noise, traffic, and parking. Relevant laws, policies, and plans including NPS *Management Policies 2006* will inform the discussion of this issue. Potential impacts of the alternatives will be analyzed in detail under "Visitor Use and Experience" within the "Affected Environment and Environmental Consequences" chapter of this management plan.

Protecting archeological resources. Formal and informal archeological studies have been undertaken within the boundaries of the park over the past 125 years and have identified many prehistoric and historic archeological sites (Katz et al. 2016). These studies show that though there has been much development and land disturbance throughout the park, areas exist that have a high probability of intact archeological resource occurrence. Any management actions in the park could have the potential to disturb resources in some of the high probability areas. Relevant laws, policies, and plans including the National Historic Preservation Act of 1966 and Executive Order 115693: "Protection and Enhancement of the Cultural Environment" will inform the discussion of this issue. Potential impacts of the alternatives will be analyzed in detail under "Archeological Resources" within the "Affected Environment and Environmental Consequences" chapter of this management plan.

Protecting historic and cultural resources. Anacostia Park is home to several documented historic sites and cultural landscapes. Historic structures, buildings, sites, and objects in the park include the Kenilworth Aquatic Gardens, Langston Golf Course, Anacostia Field House, Anacostia River Seawall, DC Water (formerly the DC Water and Sewer Authority [WASA]) Poplar Point Pump House, and the Bonus Army Encampment. The park's cultural landscapes include the Fairlawn Area Cultural Landscape, the Kenilworth Aquatic Gardens Cultural Landscape, and the Langston Golf Course Cultural Landscape. The Anacostia Park cultural landscape is also potentially contributing but has yet to be evaluated for inclusion in the National Register of Historic Places. The Anacostia River itself is considered an ethnographic resource for subsistence fishermen along the shores. Changes to the setting surrounding these areas have the potential to affect these historic and cultural resources. Relevant laws, policies, and plans including the National Historic Preservation Act of 1966, Executive Order 115693: "Protection and Enhancement of the Cultural Environment," and the *Secretary of the Interior's Standards for the Treatment of Historic Properties* will inform the discussion of this issue. Potential impacts of the alternatives will be analyzed in detail under "Archeological Resources" and "Cultural Resources" within the "Affected Environment and Environmental Consequences" chapter of this management plan.

PLANNING ISSUES AND CONCERNS DISMISSED FROM FURTHER ANALYSIS

The following presents an overview of impact topics that were considered but ultimately dismissed from further analysis in this environmental assessment. Impact topics, simply defined, are the resources that could be affected by the actions proposed under the alternatives in this management plan. An impact topic was initially considered but dismissed from further analysis if it was determined that the resource is not present in the study area or because any potential impacts would be less than minor, typically temporary, and localized. The regulatory and non-regulatory context and baseline conditions relevant to each impact topic also were analyzed in the process of determining if a topic should be retained or dismissed from

further analysis. The impact topics that have been dismissed from further analysis are discussed below along with the reasons for dismissal.

RARE, THREATENED, AND ENDANGERED SPECIES

During the scoping period, the National Park Service consulted with the US Fish and Wildlife Service (USFWS) to identify any potential rare, threatened, and endangered species that may occur within the project area. In a letter dated May 8, 2013, the US Fish and Wildlife Service stated that except for the occasional transient individual or migratory bird, there are no federally listed or proposed endangered or threatened species, or critical habits occurring in the park area. Additionally, any potential tree removal, clearing, and construction activities would not take place during the roosting and pupping season of the northern long-eared bat (June 1–July 31). Therefore, there would be no impacts on federally listed rare, threatened, and endangered species under the proposed action. Though there are several species designated as rare by the District of Columbia and the State of Maryland, adverse impacts can be avoided by timing construction actions to avoid sensitive fish species and nesting seasons of certain birds. Therefore, the impact topic of rare, threatened, and endangered species was dismissed from further analysis.

WILDLIFE AND WILDLIFE RESOURCES

Several types of wildlife habitats exist in the project area, including tidal wetland habitat, floodplain and bottomland forest habitat, upland forest habitat, managed meadows, old field habitat, parkland habitat, and stream habitat. Within these habitats are a variety of wildlife species that are adapted to using developed areas as habitat, such as gray squirrels (*Sciurus carolinensis*), opossum (*Didelphis virginiana*), raccoons (*Procyon lotor*), red and gray fox (*Vulpes vulpes* and *Urocyon cinereoargenteus*), short-tailed shrews (*Blarina brevicauda*), various species of mice (*Mus* spp.), white-tailed deer (*Odocoileus virginianus*), various grassland birds, various songbirds, and various butterflies. Many other species are adapted to using habitat adjacent to developed areas, such as the Anacostia River and other wetlands. These species include, but are not limited to, various benthic invertebrates such as segmented aquatic worms (oligochaetes) and non-biting midge larvae (chironomids), various finfish such as shad species (*Dorosoma* and *Alosa* sp.) and striped bass (*Morone saxatilis*), various reptiles and amphibians such as the eastern painted turtle (*Chrysemys picta picta*) and eastern garter snake (*Thamnophis sirtalis*), and shellfish such as the eastern floater mussel (*Pyganodon cataracta*) and the tidewater mucket mussel (*Leptodea ochracea*).

Construction activities that may result from actions tiered to this management plan may result in temporary disturbance and displacement of wildlife in localized areas. The surrounding land, however, would likely continue to provide abundant nesting, escape, and protective cover. Some animals may temporarily relocate to areas outside of the project area, but this would not be expected to have any long-term, adverse effect upon local populations. Wildlife would be expected to reoccupy the project area following construction. Much of the area that would be disturbed during actions tiered to this management plan would be characterized by lawn and turf. Upon completion of construction or rehabilitation actions, these areas would be returned to new lawn or turf with some additional shade tree

planting and landscaping. Because lawn and turf areas have a poor habitat value, impacts on wildlife in these areas would be negligible. The proposed action would also allow for potential restoration actions that would enhance or protect wildlife habitats which could mitigate disturbance due to visitor use of the park. Therefore, the impact topic of wildlife and wildlife habitat was dismissed from further analysis. If future projects are proposed that exceed the impacts described here, those impacts would be described in associated compliance documents based on the proposal at that time.

WATER RESOURCES AND WATER QUALITY

The park is located in the Anacostia River watershed, which is heavily developed. The proposed action includes natural area rehabilitation which could benefit the water quality, but the beneficial impacts are not expected to be at a level that would contribute noticeably to the Anacostia River watershed as a whole. Because this document is programmatic and does not propose specific development, specific issues such as issues related to stormwater control due to development cannot be discussed in this document. Future development projects will require additional compliance to analyze potential impacts on water quality. There are several areas of wetlands within the project areas that may be affected by the proposed action. These areas will be assessed separately under the "Wetlands" impact topic. Therefore, the impact topic of water resources and water quality was dismissed from further analysis.

AIR QUALITY

There would be a slight temporary increase in vehicle emissions and localized dust related to the proposed action during restoration activities, rehabilitation of facilities, and construction of new facilities. However, emissions are not expected to be at a level that would contribute noticeably to greenhouse gasses on a wider scale. Visitation and associated motorized travel in the park may increase where existing facilities are expanded and/or rehabilitated, and where new attractions and recreation opportunities are provided. However, the area of proposed improvements is already developed and subject to regular emissions from motor vehicles. Because most visitors to the park are from adjacent communities, and therefore the same airshed as the park, the impacts would not be measurable. Therefore, the impact topic of air quality was dismissed from further analysis.

ENVIRONMENTAL JUSTICE

Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities and low income populations and communities. According to the Environmental Protection Agency, environmental justice is the "…fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from

industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies."

The goal of "fair treatment" is not to shift risks among populations, but to identify potentially disproportionately high and adverse effects and identify alternatives that may mitigate these impacts. The alternatives presented in this environmental assessment are designed to have beneficial impacts on the nearby communities, including minority and low income communities. However, environmental justice was considered but dismissed from further analysis for the following reasons:

- The park staff and planning team solicited public participation as part of the planning process and gave equal consideration to all input from persons regardless of age, race, income status, or other socioeconomic or demographic factors.
- Implementation of the proposed action would not result in any identifiable adverse human health or other effects. Therefore, there would be no direct or indirect adverse impacts on any minority or low-income population.
- The impacts associated with implementation of the proposed action would not disproportionately affect any minority or low-income population or community.
- Implementation of the proposed action would not result in any identified effects that would be specific to any minority or low-income community.

INDIAN TRUST RESOURCES

Secretarial Order 3175 requires that any anticipated impacts on Indian Trust resources from a proposed project or action by US Department of the Interior agencies be explicitly addressed in environmental documents. The federal Indian Trust responsibility is a legally enforceable obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry out the mandates of federal laws with respect to Native American tribes. There are no known Indian Trust resources in the project area, and the lands comprising the park are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. Therefore, the impact topic of Indian Trust resources was considered but dismissed from further analysis.

2

ALTERNATIVES

INTRODUCTION

This chapter describes various alternatives for the management of the park. This environmental assessment evaluates four alternatives: the no-action alternative (alternative 1) and three action alternatives (alternatives 2, 3 and 4). The no-action alternative provides a baseline to which the action alternatives can be compared. There are a variety of components that would be implemented under all action alternatives, including the delineation of management zones that describe the desired future resource and visitor experience conditions for particular areas of the park. These elements are described in the "Elements Common to All Action Alternatives" section below. Throughout the planning process, the planning team discussed various potential components of management zones and alternatives. The components of alternatives that were discussed throughout the process evolved into the alternatives presented in this plan. The planning team did not identify any additional alternatives to be considered during this process. In addition, this chapter identifies the NPS preferred alternative and provides a summary of the environmental consequences. Impacts associated with the alternatives are described in the "Affected Environment and Environmental Consequences" chapter.

ALTERNATIVE 1: NO ACTION

Vision: continuation of current management

Under the no-action alternative, existing conditions (figure 1) would remain generally as they are, and the park would continue with current management practices for the future. The park would continue to offer visitors opportunities for active and passive recreation along the waterfront. Existing recreational facilities such as sports fields would remain in their current locations, and some fields would continue to not be used on a regular basis. Current land uses would be maintained throughout the park. Only minor changes would occur in visitor programs. The existing visitor programs and activities at Kenilworth Aquatic Gardens would continue. Interpretation in the park would continue to be developed on a site-by-site basis rather than guided by an overarching planning effort or interpretive long-range plan. River access points for the public would continue to be limited. The central area of the park would continue to be disconnected from local communities due to highway and railroad infrastructure and vehicular and pedestrian access to this area of the park would continue to be poor. Park management and operations would continue to be supported at

existing staffing levels and from existing facilities. Existing facilities would go through regular cyclic maintenance activities, and the existing park headquarters facility would remain in its current location. Regular maintenance activities would continue to include preservation of the lily and lotus ponds at Kenilworth Aquatic Gardens, daily upkeep of park grounds (mowing, vegetation trimming, and trash removal), sanitation of restrooms and picnic areas, upkeep of plumbing and electrical systems, trail maintenance, road repair, repair or replacement of damaged or weathered facilities or elements (docks, siding, gutters, trim, etc.), and painting jobs. The National Park Service would continue to work with its partners to implement resource management, remediation, and restoration actions in the park consistent with current management policies. Vegetation monitoring will continue as it has for the past decade to inform management on the condition of the wetlands.

MANAGEMENT ZONES

All action alternatives in this management plan delineate management zones that describe the desired future resource and visitor experience conditions for particular areas of the park. The alternatives use different combinations of zoning to present a range of possible ways for the National Park Service to manage the park over the next 15 to 20 years. All action alternatives include zones focused on the following resources and land uses, in varying configurations: natural resources, the Langston Golf Course, organized sport and recreation, community activities and special events, park administration and operations, and special uses. Cultural resources are also included in the management zoning. These resources are widespread throughout the park, however, and can be found across all management zones. The locations of the cultural resources are already established and, therefore, they would be managed appropriately in those locations as part of the management zone in which they fall. Below are descriptions of each management zone that would be used in all action alternatives. See the sections for action alternatives 2, 3, and 4 below for maps and descriptions of how the management zones would be delineated in each action alternative.

NATURAL RESOURCE RECREATION ZONE

Description: The focus of the natural resource recreation zone is to preserve and protect the natural landscape of forests and wetlands in the park; recreation activities that connect visitors to the natural setting will be encouraged where compatible.

Purpose: This would preserve and protect areas of forest, wetlands, cultural resources where ecological functionality has been or would be enhanced, and rehabilitate areas of previous environmental disturbance, through a variety of ecological measures. This zone also provides passive recreation and interpretive opportunities to visitors within a managed natural setting including hiking, walking, boating, experiencing the river, and enjoying and learning about nature.

Desired Resource Condition: The desired condition of this zone would be the natural landscape of forests and wetlands occurring along the river's edge, in the floodplain, and in adjacent low-lying areas. This would include the majority of the restored wetlands, stream corridors and forest management areas to be protected, preserved, and enhanced. This zone would also include lightly managed undeveloped

natural areas of woodlands, wetlands and managed meadow, as well as open fields and some areas of lawn and shade trees. The integrity and ambiance of cultural features would be protected where they are present whenever possible. Best management practices would be used to protect resources, prevent and remediate pollution, and reduce noise and visual impacts. Historic landscapes, sites, and structures would be preserved where possible, and could be rehabilitated as defined by the Secretary of the Interior's *Standards for the Treatment of Historic Properties* as necessary to accommodate park operations. Ecosystem rehabilitation would be pursued in this zone. Some ecosystem rehabilitation actions, such as the creation of larger wetlands, could require removal or changes to historic resources, particularly the Anacostia River seawall.

Desired Visitor Experience: This zone would offer visitors a natural setting; universally accessible trails and boardwalks would be provided. Interpretation and wayfinding signage would provide educational opportunities and orientation. Visitors would connect with and appreciate the natural sights, sounds, and setting. Opportunities for walking, relaxing, and small social gatherings in a natural setting would be available, as well as nature study, education and interpretation, and exploration of natural habitats. River and marsh exploration by non-motorized watercraft would be available. This zone would provide orientation, would be moderately self-directed, and would involve infrequent to moderately frequent visitor-to-visitor and visitor-to-staff contacts. Although the time visitors spend in the zone would vary, it would typically be 30 minutes to several hours.

Desired Visitor Activities: Visitors would connect with and appreciate the sights, sounds, and natural setting through boating, biking, skating, walking, picnicking, fishing, nature study, exploration, and contemplation.

Appropriate Facilities: Appropriate types of facilities within this zone include primarily unpaved trails (with limited use of paved trails); boardwalks and pedestrian bridges; limited roadways and parking; limited picnic and play facilities; educational, interpretative, and wayfinding signs; comfort stations; and water access facilities such as piers, docks, floating boat tie-ups, ramps, and non-motorized boat launches. Appropriate commercial services may include convenience concessions, shuttle services, and facilities that support guided services such as bicycle and boat tours. Any outdoor lighting would be limited to paved trail systems and would provide adequate illumination for visibility while minimizing light pollution and light trespass. Any outdoor lighting would be dark sky compliant.

GOLF COURSE ZONE

Description: Public golfing opportunities, interpretation of the historic Langston golf course, and environmentally resilient river shorelines are priorities in the golf course zone.

Purpose: This zone would provide public golfing opportunities for visitors of all ages, would protect and interpret the historical values of the Langston golf course, and would interpret the natural resources on and surrounding the golf course.

Desired Resource Condition: In this zone, the developed landscape, including mowed areas, managed plantings, buildings, parking, and access roads would be protected and preserved using best

management practices. The integrity and ambiance of cultural features would be protected where they are present. Historic landscapes, sites, and structures would be preserved where possible, and may be rehabilitated as defined by the Secretary of the Interior's *Standards for the Treatment of Historic Properties* as necessary to accommodate park operations. Ecosystem rehabilitation would be permitted in this zone.

Desired Visitor Experience: Opportunities for golfing and golf-related events would be the primary visitor experience for this zone. Visitors would receive orientation as well as have opportunities for self-direction; they would experience moderate to frequent visitor-to-visitor and limited visitor-to-staff contacts; although the time commitment would vary, it would typically be a few to several hours.

Desired Visitor Activities: Primary visitor activities in this zone would include golfing and related activities, social gatherings, and programs focusing on the interpretation of the historical significance of the golf course.

Appropriate Facilities: Appropriate types of facilities for this zone would include greens, tees, fairways, and similar facilities; concession facilities required to support golfing operations; parking and access paths; and clubhouse and support buildings.

ORGANIZED SPORT AND RECREATION ZONE

Description: Organized league play and other recreational activities on maintained fields are the focus of the organized sport and recreation zone.

Purpose: This zone would provide multi-purpose sports fields and facilities for competitive league play for a variety of field sports. When utilized for competitive league play or special events, fields and facilities would support recreational and educational opportunities traditionally found within neighborhood and regional parks. This zone would also provide space for a variety of cultural and educational opportunities through multi-purpose fields and facilities focusing on programming of special events that celebrate national and local heritage.

Desired Resource Condition: In this zone, multi-purpose sports fields and their environs including mowed turf areas, managed plantings, buildings, parking, access roads, and interstitial natural areas would be maintained and operated. Natural and water resources and ecological processes would be protected, using best management practices to accommodate concentrated visitor use. Historic landscapes, sites, and structures would be preserved where possible, and may be rehabilitated as defined by the Secretary of the Interior's *Standards for the Treatment of Historic Properties* as necessary to accommodate park operations. Ecosystem rehabilitation would be permitted in this zone.

Desired Visitor Experience: Primary visitor experiences would be opportunities to participate in and spectate at formal sporting events and informal field sports such as soccer, softball, football, lacrosse, rugby, and ultimate Frisbee. Informal recreational use such as walking, jogging, exercising, and play activities would be provided adjacent to the formal fields. This zone would provide basic amenities to

support multi-purpose sports fields and special events including restrooms, parking, and picnic areas. This zone would also offer opportunities for large-scale special events.

Desired Visitor Activities: Visitor activities in this zone would include organized sporting events and informal field sports such as soccer, softball, football, lacrosse, rugby, ultimate Frisbee, and recreational use such as walking, jogging, exercising, and play activities. Organized cultural and educational special events such as concerts and festivals would be permitted in this zone.

Appropriate Facilities: Appropriate facilities would include mown turf multi-purpose sports fields supporting football, soccer, rugby and other field sports and special events; parking and access roads; and bicycle and pedestrian trails. Appropriate commercial services may include special-event convenience concessions limited to concession food trucks, shuttle services, facilities that support guided services such as bicycle and boat tours, and temporary facilities to support special events. Outdoor lighting would be limited to those fields adjacent to other recreational and education facilities and should provide adequate illumination for visibility along paved through-paths while minimizing light pollution and light trespass. All outdoor lighting would be dark sky compliant.

COMMUNITY ACTIVITIES AND SPECIAL EVENTS ZONE

Description: A dynamic mix of educational and recreational uses (e.g., roller skating, picnicking, special events, and environmental programs) are paramount in the community activities and special events zone.

Purpose: This zone would provide visitors with opportunities to participate in recreational and educational activities traditionally found in neighborhood and regional parks, as well as multi-purpose sports fields and facilities that support play for a variety of sports. It would provide opportunities to learn about the park's cultural and natural resources through a variety of educational and interpretive experiences including special events that celebrate national and local heritage. This zone would also offer opportunities to enhance the prominence of the park as a gateway to the Anacostia River and the monumental core of the nation's capital.

Desired Resource Condition: In this zone, interpretive and educational facilities, informal recreation fields and multi-purpose sports fields with associated access and support facilities, river access and associated support facilities, managed meadows or woodlands, developed landscapes, natural and water resources, and ecological processes would be protected, using best management practices to accommodate areas of concentrated visitor use. Historic landscapes, sites, and structures would be preserved where possible, and may be rehabilitated as defined by the Secretary of the Interior's *Standards for the Treatment of Historic Properties* as necessary to accommodate park operations. Ecosystem rehabilitation would be permitted in this zone.

Desired Visitor Experience: Desired visitor experiences in this zone would be opportunities focused on education, informal sports recreation, and organized sports play. These opportunities would include neighborhood recreation, passive recreation, casual as well as concentrated visitor use, and small social gatherings. Opportunities for heritage and environmental education and interpretation would be offered.

In this zone, visitors would receive orientation as well as have opportunities for self-direction; they would experience moderate to frequent visitor-to-visitor and visitor-to-staff contacts, and although time commitment would vary, it would typically be 30 minutes to several hours. This zone would offer opportunities for special events and capacity for organized athletic events.

Desired Visitor Activities: Desired visitor activities within this zone would include organized and informal field sports (e.g., soccer, softball, football, lacrosse, rugby, ultimate Frisbee, and track events) in-line skating, exercising, sitting, playing, walking, biking, picnicking, playing tennis, playing basketball, playing baseball, gardening, accessing the water, and fishing. Cultural events, public assemblies and social gatherings, heritage and nature education, and interpretation and art appreciation would be included within this zone. Organized cultural and educational special events such as concerts and festivals would be permitted in this zone.

Appropriate Facilities: Appropriate facilities include playgrounds; tennis courts; basketball courts; handball courts; picnic tables and associated facilities; shade structures; paved and unpaved walking and bicycling trails; pedestrian and bicycle bridges; in-line skating facilities; community gardens; multi-purpose turf fields and courts suitable for a variety of organized sports; track and field facilities; plazas; amphitheaters; formal gardens; public art and interpretive facilities; and pool facilities. Recreational and educational buildings, concession-operated commercial buildings, supporting access roads and parking, and comfort stations would also be included in this zone. This zone would include flexible waterfront space for public gathering places, festivals, and concession-operated commercial activities. Appropriate commercial services may include convenience and food service concessions as; shuttle services; facilities that support guided services such as bicycle and boat tours; and temporary facilities to support special events. Any potential permanent concession structures must enhance the park setting. Additional facilities could include marinas, piers, docks, tie-ups, ramps, and boating and water access-related facilities. Outdoor lighting would provide adequate illumination for visibility while minimizing light pollution and light trespass. All outdoor lighting would be dark sky compliant.

PARK ADMINISTRATION AND OPERATIONS ZONE

Description: Facilities needed to support the management and maintenance of the park characterize the park administration and operations zone.

Purpose: This zone would support the management and operation of the park and would accommodate administrative and operational facilities that provide and/or support local, regional, and national governmental functions.

Desired Resource Condition: This zone is characterized as the support zone for park administrations and operations situated in such a manner as to have little impact on park resources and the visitor experience. Historic landscapes, sites, and structures would be preserved where possible, and may be rehabilitated as defined by the Secretary of the Interior's *Standards for the Treatment of Historic Properties* as necessary to accommodate park operations. Developed facilities would be maintained to be compatible with the mission, purpose, and significance of the park. Best management practices would be

used to protect resources, prevent pollution and reduce noise and visual impacts. Ecosystem rehabilitation would be permitted in this zone.

Desired Visitor Experience: Visitors may find park maps and information at designated visitor contact facilities. Incidental visitation may occur at operations and administrative areas, as some visitors may access these areas to obtain staff assistance. However, most visitors would not be not aware of these facilities.

Desired Visitor Activities: Activities within this zone would focus primarily on park operations and administration.

Appropriate Facilities: Appropriate types of facilities may include office buildings, walkways, pedestrian bridges, maintenance facilities, parking, access roads, visitor contact stations, shuttle services, and operations facilities. Outdoor lighting would provide adequate illumination for visibility while minimizing light pollution and light trespass. All outdoor lighting would be dark sky compliant.

SPECIAL USE ZONE

Description: Land and uses that are subject to a long-term lease are included in the special use zone.

Purpose: The special permitted lands zone includes RFK Stadium and its accessory parking lots, which were authorized by Public Law 85-300 on September 7, 1957. As a result of Public Law 99-581 (October 29, 1986) the stadium is owned by Washington, DC, the lands are leased to Washington, DC, by the National Park Service, and facilities are managed by EventsDC (formerly the DC Sports and Entertainment Commission). Other facilities authorized within the special use zone include the Environmental Conservation Corps building and parcel and the Northeast Boundary Swirl facility.

Desired Resource Condition: The desired conditions in this zone would include developed facilities for public purposes maintained to remain compatible with the mission, purpose, and significance of the park. Best management practices would be implemented to protect resources, prevent pollution, and reduce noise and visual impacts. When not intended for public visitation, facilities would be situated in such a manner as to have little impact on park resources and the visitor experience.

Desired Visitor Experience: Desired visitor experience would include opportunities to participate in public activities and functions that are compatible with the mission, purpose, and significance of the park. Other areas would generally not be intended for visitor use. There would be limited opportunities for interpretation and environmental education.

Desired Visitor Activities: Desired visitor activities would include opportunities to participate in public activities and functions that are compatible with the mission, purpose, and significance of the park. Other areas would generally not be intended for visitor use and there would be limited opportunities for interpretation and environmental education. Incidental visitation may occur, but most visitors would not be aware of the facilities.

Appropriate Facilities: Appropriate facilities for this zone would include developed facilities for public purposes compatible with the mission, purpose, and significance of the park. Best management practices would be implemented to protect resources, prevent pollution, and reduce noise and visual impacts. Buildings, structures, non-historic additions, and other development would be compatible with the landscape.

ALTERNATIVE 2

Vision: Expanded and enhanced recreational and educational opportunities with improved resource protection (30 percent of the total park consists of natural areas)

Alternative 2 (figure 2) includes management actions that would rehabilitate the park and transform it into one of Washington, DC's major recreation-based parks with a focus on organized field sports facilities, nature-based recreation and education, cultural and recreational special events, and recreational facilities supporting local neighborhoods.

Visitors to the park would experience a revitalized park with enhanced opportunities for the widest range of recreational, educational, and cultural activities and facilities throughout the park. The existing water and land trail systems along the east and west shores of the Anacostia River would be retained and enhanced, and the National Park Service would continue to work with its partners to further develop these systems.

Facilities supporting regional organized field sports and neighborhood recreation would be enhanced and expanded including the addition of new multiuse sports fields and support facilities such as restrooms, parking, or seating. Opportunities for nature-based recreation, such as land and water trails, heritage tourism, and cultural and educational special event programming, would be enhanced and expanded and made available throughout the park. New visitor facilities would be developed to support special events and for cultural attractions including opportunities for concessions.

This alternative offers the most recreational and educational programming and draws visitors into the park to learn about Anacostia's cultural and natural heritage. Ecosystem rehabilitation would be limited primarily to waterfronts, stream corridors, and selected woodlands. Mandated cultural resource management functions would be completed. Public access to the river for boating would be improved throughout the park by enhanced and expanded boat launches and boat tie-ups, and by potential new boat rental concessions and related facilities. More convenient park access and connectivity with city neighborhoods would be developed through enhanced and expanded land and water trails, bicycle infrastructure, gateways and portals, public transit, and waterborne transportation.

Future memorials would be located based on the Memorials and Museums Master Plan (NCPC 2006) and incorporated into areas approved by the National Park Service.

Anacostia Park

2016 MANAGEMENT ZONES

- Natural Resource Recreation Zone
- Golf Course Zone
- Organized Sport and Recreation Zone
- Community Activities and Special Events Zone
- Park Administration / Operations Zone
- Special Permit Zone

- DDOT Transportation Projects
- Metro
- Potential Memorial Site
- Enhanced Park Connectivity

- Water Taxi - Existing
- Water Access (River Trail) - Existing
- Water Access (River Trail) - Proposed

- Water Trail
- Anacostia Riverwalk Trail - Existing
- Anacostia Riverwalk Trail - Proposed
- Other Trail - Existing

- Pedestrian Entrances - Existing
- Vehicular Entrances - Existing

1. Good Hope Road Entrance
2. Nicholson Street Entrance
3. Deane Avenue Entrance
4. Kenilworth Park South Entrance
5. Kenilworth Park North Entrance
6. Kenilworth Acquatic Gardens Entrance
7. Langston Golf Course Entrance

- Anacostia Boundary
- National Capital East Parks (NPS)
- Other Park Land
- Federal and District Land
- Military
- University
- Schoolground (DC)

ANACOSTIA PARK FACILITIES (EXISTING + PROPOSED)

- Restrooms
- Picnic area
- Playground
- Concession facility
- Parking
- Visitor contact station
- Education facility
- Interpretive kiosk
- Wildlife viewing
- Amphitheater / Outdoor classroom
- Pedestrian trail
- Bicycle trail
- Multi-use field
- Tennis
- Golfing
- Swimming
- Skating
- Basketball
- Marina
- Boat launch
- Boat ramp
- Boat tie-up

0 600 Meters
0 600 Feet
North

Source: NPS GIS Data

Langston Golf Course

Park Entrance (7)

NPS Kenilworth Maintenance Yard (potentially relocate)

Park Entrance (3)

River Terrace

RFK Stadium

D.C. Armory

Northeast Boundary Swirl Facility

POTENTIAL LAND TRANSFER

Park Entrance (6)

Kenilworth Aquatic Gardens

Pavilions

Park Entrance (5)

Kenilworth Park North

Park Entrance (4)

Kenilworth Park South

Twining

Aquatic Resource Education Center (partnership)

Anacostia Pavilion

Park Entrance (2)

Picnic Area/Playground

Fairlawn

Anacostia Field House

Park Entrance (1)

Poplar Point

POTENTIAL LAND TRANSFER

U. S. Park Police Anacostia Operations Facility (relocate)

U. S. Park Police Aviation Facility

National Capital Parks - East Headquarters (relocate)

Buzzard Point

National Park Service
US Department of the Interior

Anacostia Park
Washington, DC

Management Plan Environmental Assessment

FIGURE 2
Alternative 2

ALTERNATIVE 3: NPS PREFERRED

Vision: Enhanced recreational and educational opportunities situated within an expanded and healthy natural areas system (45 percent of the total park consists of natural areas)

Alternative 3 (figure 3) includes management actions that would balance the rehabilitation of natural areas with sports and recreation facilities in the park to transform it into one of Washington, DC's major recreational parks and a prime natural exploration area with enhanced river access and a gateway to the Anacostia River.

Visitors to the park would experience a revitalized park with enhanced opportunities for land and water-based active and passive recreation in a naturalized park setting with a diverse river landscape and ecologically enhanced river system. The existing water and land trail systems along the east and west shores of the Anacostia River would be retained and enhanced, and the National Park Service would continue to work with its partners to further develop these systems.

Facilities supporting sports play would be consolidated, with the current organized sports capacity retained or slightly expanded. The park would maintain facilities for neighborhood and regional recreation. No new major cultural facilities would be added, though programming for heritage tourism, natural area exploration, and park interpretation would be expanded. Concession food trucks and vendors would be limited to designated developed areas.

Public access to the river for boating would be enhanced throughout the park by providing boat launches, boat tie-ups, and sites potentially supporting concessioner-provided boat rental open to the public. More convenient park access and connectivity with city neighborhoods would be developed through enhanced and expanded land and water trails, bicycle infrastructure, gateways and portals, public transit, and waterborne transportation.

Environmental rehabilitation would continue along the waterfront, stream corridors, wetlands, and forests, as well as areas within recreational zones. Remediation of contaminants affecting park resources would enhance, where possible, the riparian corridor including its ecological functionality, scenery, habitat, wetlands, resiliency, and aesthetics. Within the natural resource recreation zone, natural areas would be created through wide bands of plantings along riparian corridors and between more developed recreational zones, creating a network of naturalized areas interwoven with more developed use-intensive areas.

As under alternative 2, future memorials would be located based on the Memorials and Museums Master Plan (NCPC 2006) and incorporated into areas approved by the National Park Service.

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Anacostia Park

2016 MANAGEMENT ZONES

- Natural Resource Recreation Zone
- Golf Course Zone
- Organized Sport and Recreation Zone
- Community Activities and Special Events Zone
- Park Administration / Operations Zone
- Special Permit Zone

- DDOT Transportation Projects
- Metro
- Potential Memorial Site
- Enhanced Park Connectivity

- Water Taxi - Existing
- Water Access (River Trail) - Existing
- Water Access (River Trail) - Proposed

- Water Trail
- Anacostia Riverwalk Trail - Existing
- Anacostia Riverwalk Trail - Proposed
- Other Trail - Existing

- Pedestrian Entrances - Existing
- Vehicular Entrances - Existing

1. Good Hope Road Entrance
2. Nicholson Street Entrance
3. Deane Avenue Entrance
4. Kenilworth Park South Entrance
5. Kenilworth Park North Entrance
6. Kenilworth Acquatic Gardens Entrance
7. Langston Golf Course Entrance

- Anacostia Boundary
- National Capital East Parks (NPS)
- Other Park Land
- Federal and District Land
- Military
- University
- Schoolground (DC)

ANACOSTIA PARK FACILITIES (EXISTING + PROPOSED)

- Restrooms
- Picnic area
- Playground
- Concession facility
- Parking
- Visitor contact station
- Education facility
- Interpretive kiosk
- Wildlife viewing
- Amphitheater / Outdoor classroom
- Pedestrian trail
- Bicycle trail
- Multi-use field
- Tennis
- Golfing
- Swimming
- Skating
- Basketball
- Marina
- Boat launch
- Boat ramp
- Boat tie-up

0 600 Meters
0 600 Feet
North

Source: NPS GIS Data

Langston Golf Course

Park Entrance (7)

NPS Kenilworth Maintenance Yard (potentially relocate)

Park Entrance (3)

POTENTIAL LAND TRANSFER

Park Entrance (6)

Kenilworth Aquatic Gardens

Pavilions

Park Entrance (5)

Kenilworth Park North

Park Entrance (4)

Kenilworth Park South

River Terrace

RFK Stadium

D.C. Armory

Northeast Boundary Swirl Facility

Twining

Aquatic Resource Education Center (partnership)

Anacostia Pavilion

Park Entrance (2)

Picnic Area/Playground

Fairlawn

Anacostia Field House

Park Entrance (1)

Park Administration and Visitor Contact Facility (proposed)

POTENTIAL LAND TRANSFER

U. S. Park Police Anacostia Operations Facility (relocate)

U. S. Park Police Aviation Facility

National Capital Parks - East Headquarters (relocate)

Poplar Point

Buzzard Point

National Park Service
US Department of the Interior

Anacostia Park
Washington, DC

Management Plan Environmental Assessment

FIGURE 3
Alternative 3

ALTERNATIVE 4

Vision: Protected, restored, and expanded ecosystem with increased opportunities for nature-based recreation and education (50 percent of the total park consists of natural areas)

Alternative 4 (figure 4) includes management actions that would rehabilitate the park and transform it into one of the National Park Service's premier urban wild lands that would provide access to restored and naturalized environments within a developed urban context. This alternative would provide the most opportunities for natural and cultural heritage related land and water exploration and riparian area experiences that immerse visitors in natural areas and historic sites and landscapes. This alternative would increase the visibility, enjoyment, and protection of the river and related resources and would focus on the management of ecosystems and cultural landscapes. New recreational programming would emphasize low-impact activities and promote hands-on learning and outdoor skills.

The existing water and land trail systems along the east and west shores of the Anacostia River would be retained and enhanced, and the National Park Service would continue to work with its partners to further develop these systems. This alternative would maximize sustainable operations and concentrate activities, access, and facilities in distinct consolidated developed areas.

Visitors to the park would experience a rehabilitated park offering recreation and natural area exploration in extensively restored riparian settings with opportunities for nature study, education, interpretation, and exploration of a natural riparian environment. The park would support a diverse river landscape to provide open spaces, water- and land-based recreational facilities, as well as cultural, interpretive, and natural areas worthy of the nation's capital city.

Facilities supporting sports play would be consolidated and the current organized sports facilities capacity would be retained. New and enhanced visitor facilities at trailheads and water access points would be added. Food concession facilities would be limited to developed areas, with a focus on seasonal and special events vending

Public access to the river for boating would be enhanced throughout the park by providing new and enhancing existing facilities including boat launches, boat tie-ups, and potential sites for concessioner-provider boat rental facilities open to the public. More convenient park access and connectivity with city neighborhoods would be developed through enhanced and expanded land and water trails, bicycle infrastructure, gateways and portals, public transit, and waterborne transportation.

Environmental rehabilitation would continue with a major focus on the substantial expansion of the park's system of woodlands, wetlands, and stream corridors. Remediation of contaminants affecting park resources would enhance, where possible, the riparian corridor including its ecological functionality, scenery, habitat, wetlands, resiliency, and aesthetics. Mandated cultural resource management functions would be completed, including the preservation and rehabilitation of historically-significant cultural landscapes.

As under alternatives 2 and 3, future memorials would be located based on the Memorials and Museums Master Plan (NCPC 2006) and incorporated into areas approved by the National Park Service.

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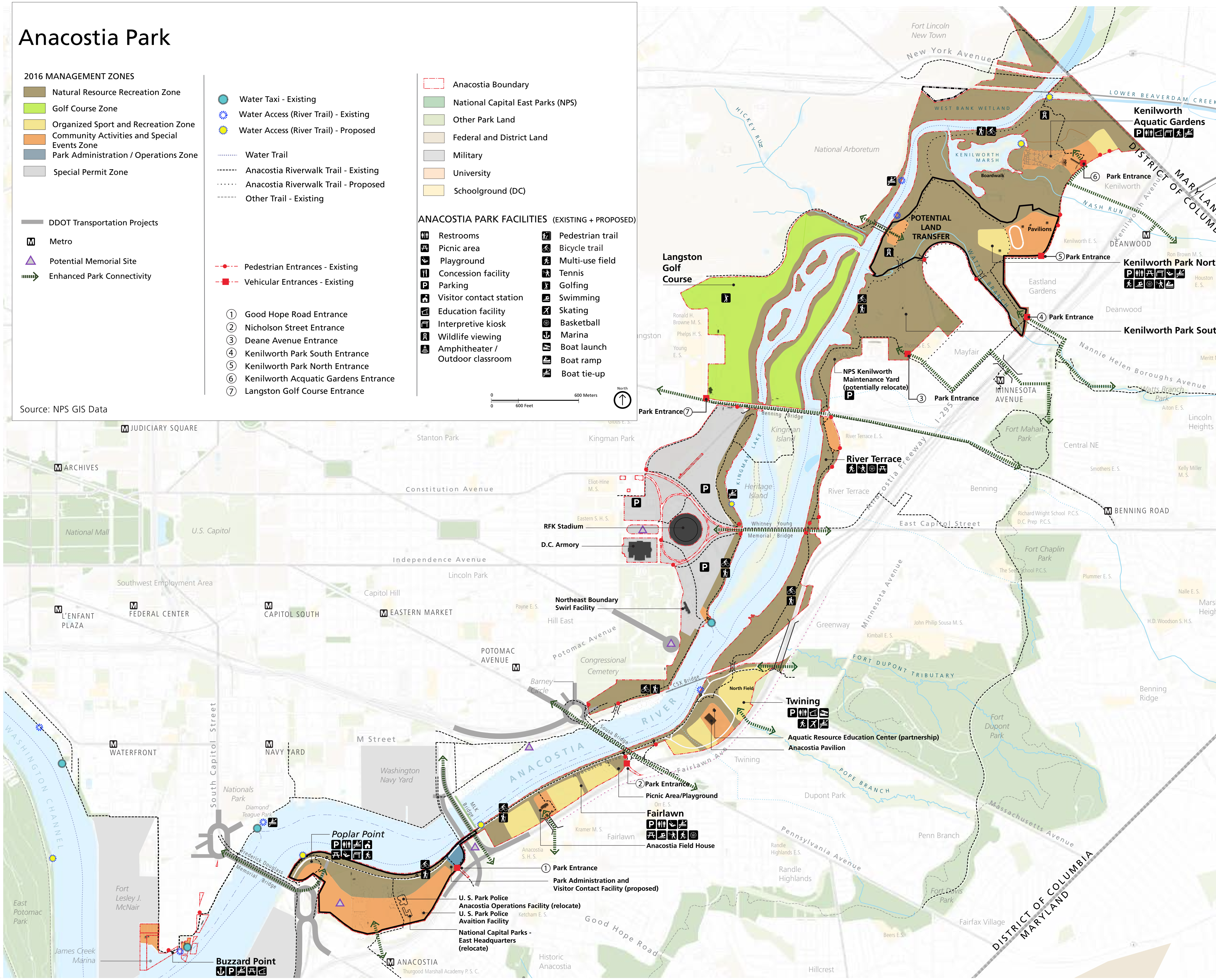
National Park Service
US Department of the Interior

Anacostia Park
Washington, DC



Management Plan Environmental Assessment

FIGURE 4
Alternative 4

COMPARISON OF MANAGEMENT ZONES UNDER ACTION ALTERNATIVES

TABLE 2. COMPARISON OF MANAGEMENT ZONES UNDER ACTION ALTERNATIVES

Zone	Alternative 2:	Alternative 3:	Alternative 4:
Natural resource recreation zone	352 acres	536 acres	620 acres
Golf course zone	167 acres	128 acres	128 acres
Organized sport and recreation zone	212 acres	133 acres	67 acres
Community activities and special events zone	204 acres	139 acres	122 acres
Park administration/ operations zone	6 acres	5 acres	4 acres
Special use zone	152 acres	152 acres	152 acres
Other lands	15 acres	15 acres	15 acres
Total Park area	1,108 acres	1,108 acres	1,108 acres

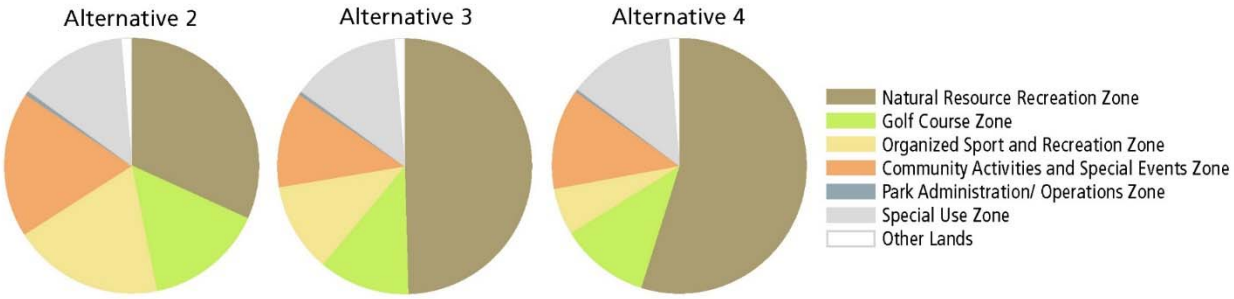


FIGURE 5: COMPARISON OF ZONE ALLOCATION BY ALTERNATIVE

NPS PREFERRED ALTERNATIVE

The preferred alternative is the alternative the National Park Service believes would best accomplish the purposes of the management plan and meet the park's current and future needs. Alternative 3 was identified as the NPS preferred alternative because it provides the most balanced combination of recreation areas and natural areas to provide the most flexibility and diversity in visitor activity and recreation opportunities in the park.

MITIGATION MEASURES OF THE ACTION ALTERNATIVES

To avoid or minimize environmental impacts related to the action alternatives, the National Park Service would implement mitigation measures whenever feasible. Although the exact mitigation measures to be implemented would depend upon the final design and approval of future projects tiered to this management plan, the following are examples of mitigation measures the National Park Service could implement for projects tiered to this plan:

- Mitigate and minimize potential impacts on natural and cultural resources during construction by ensuring designs and plans are compatible with cultural and natural resources and the character of the site, instructing contractors on the sensitivity of the general environment, and monitoring adherence to plans. Corridors for construction vehicle movement would be established and defined on the ground. Staging of construction equipment would be restricted to the road corridor, parking lots, and other identified previously disturbed areas to avoid impacts on natural and cultural resources.
- Implement standard noise abatement measures during construction. Standard noise abatement measures could include the following elements: a schedule that minimizes impacts on adjacent noise-sensitive uses, the use of the best available noise control techniques wherever feasible, the use of hydraulically or electrically powered impact tools when feasible, and location of temporary noise sources as far from sensitive uses as possible.
- Minimize soil erosion by limiting the time that soil is left exposed and by applying other erosion control measures, such as erosion matting, silt fencing, and sedimentation basins in construction areas to reduce erosion, surface scouring, and discharge to water bodies.
- If applicable, a stormwater management plan and/or an erosion and sediment control plan would be developed, and all necessary permits would be obtained.
- Implement measures to prevent invasive plants from returning to sites where they have been removed, such as ensuring that construction-related equipment arrives at the site free of mud or seed-bearing materials, and certifying that all seeds and straw material are weed-free.
- Rehabilitate areas that are temporarily disturbed during construction with native grasses and other native species as per NPS standards and consistent with the cultural landscape report.
- Follow the *Secretary of the Interior's Standards for the Treatment of Historic Properties* for all preservation and rehabilitation efforts to historic structures.
- An Unanticipated Discovery Plan would be developed to mitigate potential adverse impacts in the event that archeological resources are encountered during the actions proposed in the alternatives. If during construction previously unknown archeological resources were discovered, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented and, if significant resources could not be preserved in situ, an appropriate mitigation strategy (e.g. the excavation, recordation, and mapping of cultural remains prior to disturbance, to ensure that important archeological data that otherwise would be lost is recovered and documented) would be developed in consultation with the state historic preservation officer and, as appropriate, associated American Indian tribes.

- Tree removal, clearing, and construction activities would not take place during the bird nesting season (April 1–August 31) or the roosting and pupping season of the northern long-eared bat (June 1–July 31), to avoid disturbance to potential maternity roosts and/or nests in the area. During future project phases, if it is determined that clearing or construction is needed during these seasons, the National Park Service would coordinate with the US Fish and Wildlife Service to ensure no impacts would occur.
- Remedial activities addressing contaminants would be designed and implemented to avoid, when possible, adverse impacts on scenery, wildlife, habitat, aesthetic values, and recreational opportunities.

SUMMARY COMPARISON OF THE ALTERNATIVES

Table 3 below provides a brief summary and comparison of the key components of the no-action alternative and the three action alternatives.

TABLE 3. SUMMARY OF THE ALTERNATIVES

	Alternative 1: No Action	Alternative 2	Alternative 3	Alternative 4
Vision	Continuation of current management.	Expansion and enhancement of recreational and educational opportunities with improved resource protection.	Enhanced recreational and educational opportunities situated within expanded and enhanced natural areas.	Ecosystem protection, rehabilitation, and expansion—with expanded nature-based recreation and education.
Natural Resource Management	Continuation of partnerships to implement management and restoration activities.	Support a healthy river through continual management of ecological systems. Buffer areas around the golf course to support ecological function. Ecosystem rehabilitation efforts along selected areas	Same as alternative 2, plus: New ecosystem rehabilitation efforts along the waterfront, stream corridors, and throughout the park. Natural areas restored along riparian corridors and between developed recreational zones creating a network of natural areas interwoven with more developed areas.	Same as alternative 2, plus: New ecosystem rehabilitation efforts along the park's system of woodlands, wetlands, and stream corridors. Substantial expansion of natural areas.
Cultural Resource Management	Continuation of current management.	Maintain cultural resources including archeological sites, historic structures, and cultural landscapes. Reserve future memorial sites into NPS approved areas.	Same as alternative 2.	Same as alternative 2.
Park and Operations Maintenance	Existing park facilities and staffing levels would be maintained. Facilities would go through regular cyclical maintenance.	Adequately maintain and operate facilities for safe visitor experiences. Park administrative and service facilities could be relocated but would remain within the park.	Same as alternative 2.	Same as alternative 2.

TABLE 3. SUMMARY OF THE ALTERNATIVES (CONT.)

	Alternative 1: No Action	Alternative 2	Alternative 3	Alternative 4
Park Management	Current land use and management would be maintained.	Focused on organized field sports facilities, nature-based recreation and education, and special events supporting local neighborhoods.	Focused on improved sports and recreation facilities as well as enhanced natural areas. Restored natural areas with enhanced Anacostia River access.	Focused on providing access to restored natural areas and cultural landscapes.
Visitor Experience	Continuation of existing opportunities for active and passive recreation along the waterfront.	Experience a broad range of recreational, educational, nature-based, and cultural activities. Enhanced and expanded field sports opportunities. Enhanced and expanded opportunities for cultural activities and special events. Expanded opportunities for heritage tourism, natural area exploration, and special event programming.	Experience a broad range of recreational, educational, nature-based, and cultural activities. Experience greater opportunities for land- and water-based recreation. Expanded programming for heritage tourism, natural area exploration, and park interpretation. Expand natural areas throughout the park.	Experience a broad range of recreational, educational, nature-based, and cultural activities. Experience nature-based recreation and natural area exploration in a restored environment. Opportunities for nature study, education, interpretation, and exploration of a natural riparian environment. New recreational programming emphasizing low-impact activities and promoting hands-on learning and outdoor skills.
Facilities	Facilities would be maintained at their current locations and capacities.	New multiuse sports fields and support facilities such as restrooms, parking, or seating would be added. Develop new visitor facilities to support special events and cultural attractions including opportunities for concessions.	New facilities to enhance Anacostia River access. Capacity at sports facilities maintained or slightly increased, but space consolidated for more convenient public access and more efficient management. Concession food trucks and vendors would be permitted in designated areas.	Capacity at sports facilities maintained, but space consolidated for more convenient public access and more efficient management. New visitor facilities at trailheads. Food concessions limited to developed areas with a focus on vending, including seasonal and special event.

SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Table 4 below provides a brief summary of the impacts of the no-action and action alternatives on the impact topics selected for analysis in this management plan. These impacts are described in greater detail under their respective headings in the "Affected Environment and Environmental Consequences" section.

TABLE 4. SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Resource	Alternative 1: No Action	Alternative 2	Alternative 3	Alternative 4
Soils and Sediments	Ground disturbance due to routine maintenance of existing facilities could result in changes to existing soil conditions.	Same as under alternative 1, plus increased potential for ground disturbance due to construction of new park facilities.	Same as under alternative 2, but with a decreased potential for adverse impacts due to construction of new park facilities due to the lower acreage of management zones that would support facility development.	Same as under alternative 3, but with a decreased potential for adverse impacts due to construction of new park facilities due to the lower acreage of management zones that would support facility development.
Wetlands	Some routine maintenance of existing park facilities that are adjacent to wetlands could result in adverse impacts to wetlands.	Same as under alternative 1, plus the following. Potential waterfront and upland construction of docks, piers, boardwalks, boat launches, and pedestrian bridges may require pile driving, and excavation in and adjacent to wetlands, resulting in adverse impacts. Rehabilitation activities in the natural resource recreation zone could result in beneficial impacts if wetlands are improved or restored.	Same as under alternative 2, but with a decrease in adverse impacts and increase in beneficial impacts due to the decrease in acreage of zones that permit facility development and increase in acreage of natural resource recreation zones.	Same as under alternative 3, but with a decrease in adverse impacts and increase in beneficial impacts due to the decrease in acreage of zones that permit facility development and increase in acreage of natural resource recreation zones.

TABLE 4. SUMMARY OF ENVIRONMENTAL CONSEQUENCES (CONT.)

Resource	Alternative 1: No Action	Alternative 2	Alternative 3	Alternative 4
Upland Vegetation	Alternative 1 would have no impacts on upland vegetation.	Vegetation clearing could take place for recreational or other facility expansion projects, including rehabilitation of existing park facilities, new visitor access points, and new trails and roads. Ecosystem rehabilitation of upland woodland sites would result in a beneficial impact.	Same as under alternative 2, but the extent of the vegetation disturbance would be less due to fewer acres being allocated to zones permitting facility expansion or development. The beneficial impacts of ecosystem rehabilitation would be greater due to more acres allocated for natural resource restoration.	Same as under alternative 3, but the extent of the vegetation disturbance would be less due to fewer acres being allocated to zones permitting facility expansion or development. The beneficial impacts of ecosystem rehabilitation would be greater due to more acres allocated for natural resource restoration.
Floodplains	Alternative 1 would have no impacts on floodplains.	Adverse impacts due to potential construction of new facilities within the 100-year floodplain. Wetland restoration that could occur in the natural resource recreation zone could enhance the flood dissipation, flood storage, water quality, and wildlife habitat functions of floodplains in several areas of the park.	Same as under alternative 2, but with decreased adverse impacts due to construction of new facilities and increased beneficial impacts due to wetland restoration actions because of the decrease in acreage of zones that permit facility development and increase in acreage of natural resource recreation zones.	Same as under alternative 3, but with decreased adverse impacts due to construction of new facilities and increased beneficial impacts due to wetland restoration actions because of the decrease in acreage of zones that permit facility development and increase in acreage of natural resource recreation zones.
Archeological Resources	Routine maintenance of facilities could result in disturbance of intact archeological resources if ground disturbance is required.	Future development of facilities could result in disturbance of intact archeological resources if ground disturbance is required. Natural resource zone could protect resources from disturbance by limiting future development.	Same as alternative 2 with decreased adverse and increased beneficial impacts due to decrease in acreage of organized sports zone and increase in acreage of natural resource zones.	Same as alternative 3 with decreased adverse and increased beneficial impacts due to decrease in acreage of organized sports zones and increase in acreage of natural resource zones.

TABLE 4. SUMMARY OF ENVIRONMENTAL CONSEQUENCES (CONT.)

Resource	Alternative 1: No Action	Alternative 2	Alternative 3	Alternative 4
Cultural Resources	Routine maintenance would continue to preserve and protect cultural resources. Future use of historic structures could have adverse impacts if historic character is changed.	Management zones facilitate preservation and protection of cultural resources. Potential use or development near cultural resources could detract or damage cultural integrity. Small areas of the seawall could be removed to promote wetland restoration. No impacts on ethnographic resources would be expected.	Same as alternative 2, but with overall decreased adverse and increased beneficial impacts due to decrease in acreage of organized sports zone and increase in acreage of natural resource zones. However, more areas of the seawall could be removed to promote more areas of wetland restoration.	Same as alternative 3, but with overall decreased adverse and increased beneficial impacts due to decrease in acreage of organized sports zones and increase in acreage of natural resource zones. However, more areas of the seawall could be removed to promote more areas of wetland restoration.
Visitor Use and Experience	Current management would continue to provide a range of recreational opportunities for visitors. Access into the park would remain limited and continue to result in an adverse impact. Motorized travel within the park would continue to be limited and disconnected. Existing facilities brought up to standard would make them generally safer for visitor use.	Recreational and educational opportunities expanded throughout the park through an emphasis on organized sports and community activity facilities. More convenient park access and connectivity with city neighborhoods through enhanced trails, bicycle infrastructure, gateways and portals, public transit, and waterborne transportation. Construction of future facilities could result in a temporary adverse impact if visitors are not able to access certain areas of the park due to temporary closures.	Same as under alternative 2, but with an increased emphasis on natural resource zone recreation and a decrease in organized sports zone, which could have both beneficial and adverse impacts on visitor use depending on the types of activities individual visitors prefer to take part in within the park.	Same as under alternative 3, but with an increased emphasis on natural resource zone recreation and a decrease in organized sports zone, which could have both beneficial and adverse impacts on visitor use depending on the types of activities individual visitors prefer to take part in within the park.

3

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Organized by impact topic, this chapter describes the current environmental conditions in and surrounding the project area. These conditions serve as a baseline for understanding the resources that could be affected by implementing the project. In addition, this chapter analyzes both beneficial and adverse impacts that would result from implementing any of the alternatives considered in this environmental assessment. This chapter also includes methods used to analyze impacts and the analysis methods used for determining cumulative impacts. As required by CEQ regulations implementing the National Environmental Policy Act, a summary of the environmental consequences for each alternative is provided in table 4 which can be found in "Chapter 2: Alternatives."

GENERAL METHODOLOGY FOR ANALYZING IMPACTS

In accordance with the CEQ regulations, direct, indirect, and cumulative impacts are described under each impact topic (40 CFR 1502.16), and the impacts are assessed in terms of context and intensity (40 CFR 1508.27). Where appropriate, mitigating measures for adverse impacts are also described and incorporated into the evaluation of impacts. The specific methods used to assess impacts for each resource may vary; therefore, these methodologies are described under each impact topic. For all resource topics, the area evaluated for impacts is the area delineated as the project area (figure 1).

TYPE OF IMPACT

Impacts are discussed by type, as follows (the terms "impact" and "effect" are used interchangeably throughout this document):

Direct: Impacts that would occur as a result of the proposed action at the same time and place of implementation (40 CFR 1508.8).

Indirect: Impacts that would occur as a result of the proposed action but later in time or farther in distance from the action (40 CFR 1508.8).

Adverse: Impacts that would cause an unfavorable result to the resource when compared to the existing conditions.

Beneficial: Impacts that would result in a positive change to the resource when compared to the existing conditions.

ASSESSING IMPACTS USING COUNCIL ON ENVIRONMENTAL QUALITY CRITERIA

The impacts of the alternatives are assessed using the Council on Environmental Quality definition of "significance" (1508.27), which requires consideration of both context and intensity:

(a) **Context**—This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

(b) **Intensity**—This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

(1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect would be beneficial.

(2) The degree to which the proposed action affects public health or safety.

(3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, parklands, prime farmlands, wetland, wild and scenic rivers, or ecologically critical areas.

(4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.

(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

(6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by

terming an action temporary or by breaking it down into small component parts.

(8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

(10) Whether the action threatens a violation of federal, commonwealth, or local law or requirements imposed for the protection of the environment.

For each impact topic analyzed, an assessment of the potential significance of the impacts according to context and intensity is provided in the "Conclusion" section that follows the discussion of the impacts under each alternative. Resource-specific context is presented in the "Methodologies" section under each resource topic and applies across all alternatives. Intensity of the impacts is presented using the relevant factors from the list in (b) above. Intensity factors that do not apply to a given resource topic and/or alternative are not discussed.

CUMULATIVE IMPACTS ANALYSIS METHODOLOGY

Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, or 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, and human community being affected and should focus on impacts that are truly meaningful. Cumulative impacts are considered for all alternatives, including the no-action alternative.

Cumulative impacts were determined for each affected resource by combining the impacts of the alternative being analyzed and other past, present, and reasonably foreseeable actions that would also result in beneficial or adverse impacts. Because some of these actions are in the early planning stages, the evaluation of the cumulative impact is based on a general description of the projects. These actions were identified through the internal and external project scoping processes and are summarized below. In defining the contribution of each alternative to cumulative impacts, the following terminology is used:

Imperceptible: The incremental effect contributed by the alternative to the overall cumulative impact is such a small increment that it is impossible or extremely difficult to discern.

Noticeable: The incremental effect contributed by the alternative, while evident and observable, is still relatively small in proportion to the overall cumulative impact.

Appreciable: The incremental effect contributed by the alternative constitutes a large portion of the overall cumulative impact.

PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS

Anacostia Riverwalk Trail

The Anacostia Riverwalk Trail (ART) is part of the District of Columbia's Anacostia Waterfront Initiative to enhance the shores of the Anacostia River. The Anacostia Riverwalk Trail is an ongoing effort to establish a seamless, scenic pedestrian and bicycle trail along the east and west banks of the Anacostia River. The trail will ultimately connect existing and planned trails in southeast Washington and Maryland with downtown Washington. It would offer recreational opportunities, health benefits, off street bicycle commuting, grade separated street crossings, access to and from the surrounding neighborhoods, and access to public transportation, including buses as well as metro stations. Key elements of the project include shared-use paths and educational signage, enhanced trail viewsheds to bring users closer to the water's edge, and minimized impacts of paving or other trail infrastructure on the natural environment. To date, the ART is open the full length of the east bank of the river (DDOT 2015a); planned segments include a bridge across the river to connect the Kenilworth Aquatic Gardens to the National Arboretum. The ART action has resulted in contributions or has the potential to contribute to the cumulative impact on soils and sediments, wetlands, upland vegetation, floodplains, archeological resources, cultural resources, and visitor use and experience.

Langston Golf Course Rehabilitation

The National Park Service plans to rehabilitate Langston Golf Course to bring the golf course up to modern standards and improve course features. This plan is being developed through a Potential Concession Facility Improvement Project (CFIP) for the next concession contract. The rehabilitation will eliminate existing safety hazards, operational inefficiencies, drainage problems, and turf management problems. Proposed improvements include connecting bunkers to existing drainage system on the fairway to limit puddling, installing erosion control liners in bunkers to aid drainage during heavy rain, improve drainage at the driving range to remove standing water after heavy rains, add a cover over the driving range to allow for continued use during any weather, constructing a smooth and continuous cart path to improve play and increase customer visibility, and improving the men's and women's restrooms. The golf course will continue to be a public facility, subject to a user fee. These actions have the potential to contribute to the cumulative impact on soils and sediments, wetlands, cultural resources, and visitor use and experience.

Wetland and Resident Canada Goose Management

In 2014, the National Park Service completed the *Wetlands and Resident Canada Goose Management Plan/Environmental Impact Statement* for Anacostia Park. This management plan was developed to guide management actions to restore nearly 100 acres of tidal wetlands along the Anacostia River shoreline and to manage the increasing number of resident Canada geese that is currently jeopardizing the tidal wetland restoration efforts. For wetland management, the plan includes elements related to hydrology, vegetation, education, wetland restoration, park operations, erosion control, managing invasive plant species, and construction of new trails. To manage the resident Canada geese, the plan includes lethal control, habitat modification, scare and harassment, reproductive control, and education. This management plan has the potential to contribute to the cumulative impact on soils and sediments, wetlands, upland vegetation, floodplains, archeological resources, cultural resources, and visitor use and experience.

Anacostia Watershed Restoration Plan

In 2010, the Anacostia Watershed Restoration Partnership released the *Anacostia River Watershed Restoration Plan and Report* which detailed restoration opportunities within each of the Anacostia River's 14 primary subwatersheds and the tidal river reach. The goals of the plan are to dramatically reduce pollutant loads, protect and restore ecological integrity, improve fish passage, increase wetland acreage, expand forest cover, and increase public and private partnership. The plan employs eight action-oriented restoration strategies, which includes stormwater retrofit; stream restoration; wetland creation and restoration; fish blockage removal and modification; riparian reforestation, meadow creation, street trees, and invasive management; trash reduction; toxic remediation; and parkland acquisition (AWRP 2010). These restoration efforts are ongoing throughout the region and along the Anacostia River itself. This restoration plan has contributed and has the potential to contribute to the cumulative impact on soils and sediments, wetlands, floodplains, and visitor use and experience.

11th Street Bridge Park

The 11th Street Bridge Park is a public park, proposed by a public-private partnership, that would traverse the width of the Anacostia River atop the existing piers that held the old 11th Street bridge before it was replaced. This park would include pedestrian connection between both shores of the Anacostia River as well as green spaces, an open plaza, and areas for recreation. This project has the potential to contribute to the cumulative impact on cultural resources and visitor use and experience.

DC United Soccer Stadium

A new 20,000-seat stadium for the DC United soccer team will be constructed in Buzzard Point and is scheduled to open in 2018. The stadium will be located just a few blocks north of parklands at Buzzard Point, between Second and First Streets west to east and between R and T Streets south to north. Once the new stadium opens, the soccer team will no longer train or play at RFK Stadium. Currently, the District of Columbia owns the land on which the stadium will be built, but the District will transfer the land to DC United in late 2016. This has the potential to contribute to the cumulative impact on cultural resources and visitor use and experience.

Poplar Point Land Transfer and Redevelopment

The National Park Service is proposing to transfer approximately 110 acres of land known as Poplar Point to the District of Columbia as mandated by Congress through Federal and District of Columbia Government Real Property Act of 2006 (DC Lands Act). The land proposed for transfer is primarily open, developable space that the District proposes to redevelop with a mix of retail, residential, and cultural/civic uses. According to the 2010 *Poplar Point Redevelopment Draft Environmental Impact Statement* prepared by the District of Columbia and the National Park Service, the redevelopment is in the early planning stages, but a conceptual development plan will include a mixed-use community and at least 70 acres of parks and open space within Poplar Point. The parks and open space will include wetlands, landscaped areas, pedestrian walkways, bicycle trails, seating, open-sided shelters, natural areas, recreational use areas, and memorial sites. The mixed-use community could include cultural institutions, museums, transit, residential, and commercial uses. When the land transfer is complete, the park headquarters would continue to be located within Poplar Point at a location to be determined, and would be integrated into the new development. The US Park Police (USPP) facilities located in Poplar Point,

including the Anacostia Operations Facility (AOF) and the aviation hangar, would be relocated out of Poplar Point to the North Field area of Twining. This action has the potential to contribute to the cumulative impact on soils and sediments, wetlands, upland vegetation, floodplains, archeological resources, cultural resources, and visitor use and experience.

DC Water Clean Rivers Project

DC Water has established a 40-year program of infrastructure improvements designed to significantly reduce raw sewage and trash that is released into surface waters in the District of Columbia from combined sewer outfalls (CSOs) (DC WASA). Implementation of the plan will reduce the number of CSO events along the Anacostia River from 82 events to 2 events annually. The plan identifies several wastewater system improvements that will occur within the limits of the park. In 2010, the National Park Service completed the *District of Columbia Water and Sewer Authority Long Term Control Plan Combined Sewer Overflow Control Program Environmental Assessment* to review the impacts of implementation of the long-term control plan, which includes construction of three major tunnel segments that will control combined sewer overflows to the Anacostia River. A large portion of these tunnels will be located on or beneath National Park Service lands, particularly the segment known as the Anacostia River Tunnel. This tunnel will be approximately 12,500 feet in length and extend from RFK Stadium to the Poplar Point Pumping Station. It will be installed in soft ground, primarily in public space, 100 feet below ground. The tunnel will include six construction staging areas, six drop/junction shafts, three shaft to tunnel connections, five odor control and ventilation facilities, and two diversion chambers. Construction began in 2013 and is expected to be complete in late 2017 (DC Water 2016). This project has the potential to contribute to the cumulative impact on soils, wetlands, upland vegetation, archeological resources, and visitor use and experience.

District of Columbia Transportation Improvement Projects

Several projects adjacent to the park are proposed that would improve traffic circulation through congested or problematic intersections and roadways. The following improvement projects would have the potential to contribute to the cumulative impact on soils and sediments, floodplains, cultural resources, and visitor use and experience.

South Capitol Street Corridor

The US Department of Transportation Federal Highway Administration and the District of Columbia Department of Transportation (DDOT) have completed the *South Capitol Street Record of Decision and Supplemental Final Environmental Impact Statement/Section 4(f) Evaluation* in 2015 for the South Capitol Street Corridor Project. This project would be located across and on both shores of the Anacostia River, adjacent to the park near Poplar Point and Buzzard Point. This project will replace the Frederick Douglass Memorial Bridge and transform related sections of urban freeway into a scenic boulevard that increases pedestrian and vehicular safety, improves multi-modal transportation options, increases community accessibility, and supports economic development on both sides of the Anacostia River. Key project elements include a new six-lane Frederick Douglass Memorial Bridge, reconstructing South Capitol Street as a six-lane boulevard with an improved streetscape on the west side of the Anacostia River, new traffic interchanges and ovals on both sides of the river, improvements to nearby local roads, increased bicycle and pedestrian facilities, and improved drainage and stormwater management

throughout the corridor. This project would include the reconstruction of the existing one-way driveway to the park at Poplar Point into a two-way access point with shared use bicycle and pedestrian paths. Unneeded access roads would be removed and converted into greenspace.

Barney Circle and Southeast Boulevard Transportation Planning and Feasibility Study

DDOT is developing strategies to redevelop the Barney Circle area, located at the west end of the John Philip Sousa Bridge where Southeast Boulevard, Pennsylvania Avenue SE, and various neighborhood streets converge. As currently configured, Barney Circle prevents several turning movements to and from neighborhood side streets, and the Southeast Freeway between 11th Street and Pennsylvania Avenue has been removed from the interstate system and provides an opportunity to integrate the right of way to meet the Anacostia Waterfront Initiative transportation planning principles (DDOT 2016). DDOT conducted a transportation planning study in 2013 for the Barney Circle area. A final draft Feasibility Study was released in January 2016 that presented the viability of three concepts for the redevelopment of the Barney Circle area.

Pennsylvania Avenue–Minnesota Avenue Intersection Improvement

The District of Columbia Department of Transportation, the National Park Service, and the Federal Highway Administration are proposing improvements to the intersection at Pennsylvania Avenue SE and Minnesota Avenue SE, in the Twining Square area a few blocks east of the park boundary. Goals of this project are to improve pedestrian and vehicular safety; create a consolidated, usable open space for the community; and improve multimodal connectivity and support land use (DDOT 2012). The preferred alternative selected in the associated environmental assessment and finding of no significant impact is to create a traffic square concept that would circulate vehicular traffic around an expanded central park area, with Pennsylvania Avenue bisecting (DDOT 2015b).

Kenilworth Avenue Corridor Study

Kenilworth Avenue, located just east of the park boundary running roughly parallel with the Anacostia River, serves as an important commuter route linking I-395, I-295, and the Baltimore–Washington Parkway. The *Kenilworth Avenue Corridor Study* was completed in 2007 by the District of Columbia Department of Transportation to look at possible transportation improvements as part of the Anacostia Waterfront Initiative. The study examined ways to provide a safer, more pedestrian friendly environment; create a more pleasing urban setting for Kenilworth Avenue; and improve access for local neighborhoods. The study assessed several individual projects designed to accomplish those goals in the section of Kenilworth Avenue between Pennsylvania Avenue and Eastern Avenue. When implemented, these projects will transform Kenilworth Avenue into an urban roadway enhanced through reduced visual clutter and improved connections and interchange geometry, enhanced and clearly-identified pedestrian crossings, attractively landscaped medians, and an improved signage system to identify park entrances and places of interest (DDOT 2007).

Investigation or Remediation of Contaminated Sites

The Anacostia River shoreline has a history of industrial uses. Remnants of these industrial uses include several contaminated sites within and adjacent to the park. The shoreline was the site of landfills that, in addition to other industrial uses, have contributed to contamination in and adjacent to the park. Efforts are

underway in many of these areas to investigate and remediate contamination in soil, sediment, groundwater, and surface water, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). See figure 6 for the locations of the CERCLA sites within the project area. The following investigation or remediation efforts have the potential to contribute to the cumulative impact, both beneficial and adverse, on soils and sediments, wetlands, upland vegetation, archeological resources, and visitor use and experience.

Kenilworth Park Landfill Site

The Kenilworth Park Landfill Site is a 130-acre site that includes both Kenilworth Park North and Kenilworth Park South. From 1942 to 1968, the District of Columbia used the site to burn and bury municipal waste and also buried incinerator ash at the site. From 1968 to 1970, the site was operated as a sanitary landfill. The landfill was closed in 1970 and remained largely unaltered with the exception of the construction of the Kenilworth-Parkside Recreation Center in 1973 on the northeastern portion of Kenilworth Park North. In 2004, Congress authorized the transfer of administrative jurisdiction over Kenilworth Park North to the District, but that transfer has not yet occurred.

The National Park Service completed preliminary assessments and site inspections for Kenilworth Park South and for Kenilworth Park North in 2000 and 2002, respectively. The National Park Service then completed a remedial investigation for Kenilworth Park North in 2007 and for Kenilworth Park South in 2008. The contaminants of concern at the site include metals, pesticides, volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and methane gas.

In April 2012, the National Park Service completed the *Kenilworth Landfill Site Feasibility Study Report* (NPS 2012), which consolidated Kenilworth Park North and Kenilworth Park South into a single site, but divided the consolidated site into two operable units (OUs): OU1, which comprises the surface and subsurface soils, including the waste material disposed of within the landfill; and OU2, which includes the shallow groundwater underlying OU1. The feasibility study recommended additional monitoring of groundwater along the periphery of the site to confirm the data interpretation that hazardous substances were not migrating through groundwater to adjacent bodies of surface water. The National Park Service released a proposed plan for OU1 in March 2013, and solicited public comments on the preferred remedy (NPS 2013).

In December 2013, the National Park Service initiated a supplemental groundwater study to reassess the conclusions in the remedial investigations that landfill contaminants were not migrating to adjacent surface water bodies, including the Anacostia River, through groundwater. The National Park Service completed the installation of monitoring wells and the collection of samples and has completed a report summarizing the results of the groundwater study (The Johnson Company 2016). In addition, the National Park Service plans to collect and analyze additional soil samples on the site using incremental sampling methodologies. These new data will be presented in a remedial investigation addendum for OU1. Following the remedial investigation addendum, hazardous substance contamination at OU1 will be fully characterized, and the National Park Service will issue a new proposed plan for public comment that identifies a preferred remedial action for OU1. The National Park Service will then determine whether further response action may be necessary for OU2, the groundwater underneath the site.

Anacostia Park

- Anacostia Boundary
- National Capital East Parks (NPS)
- Other Park Land
- Federal and District Land
- Military
- University
- Schoolground (DC)
- Existing Sports Field
- DDOT Transportation Projects
- 100 Year Flood Plain
- 500 Year Flood Plain
- Metro
- Potential Memorial Site

- Captain John Smith Trail Access - Proposed
- Water Taxi - Existing
- Water Access (River Trail) - Existing
- Water Trail - Proposed
- Anacostia Riverwalk Trail - Existing
- Anacostia Riverwalk Trail - Proposed
- Other Trail - Existing
- Road - Proposed
- Pedestrian Entrances - Existing
- Vehicular Entrances - Existing

1. Good Hope Road Entrance
2. Nicholson Street Entrance
3. Deane Avenue Entrance
4. Kenilworth Park South Entrance
5. Kenilworth Park North Entrance
6. Kenilworth Acquatic Gardens Entrance
7. Langston Golf Course Entrance

- Existing Multi-Use Fields
- Existing Park Lands

Source: NPS GIS Data
JUNE 2015

0 600 Meters
0 600 Feet
North

Kenilworth Aquatic Gardens
Park Entrance 6
Kenilworth Park North
Park Entrance 5
Park Entrance 4
Kenilworth Park South
Park Entrance 3
NPS Kenilworth Maintenance Yard
Langston Golf Course
POTENTIAL LAND TRANSFER
Park Entrance 7
River Terrace
RFK Stadium
D.C. Armory
Northeast Boundary Swirl Facility
Twining
Aquatic Resource Education Center (partnership)
Anacostia Pavilion
Park Entrance 2
Picnic Area/Playground
Fairlawn
Anacostia Field House Swimming Pool (partnership)
Park Entrance 1
Washington Gas Site
POTENTIAL LAND TRANSFER
U. S. Park Police Anacostia Operations Facility
U. S. Park Police Aviation Facility
National Capital Parks - East Headquarters
Poplar Point
Buzzard Point

National Park Service
US Department of the Interior

Anacostia Park
Washington, DC

- CERCLA Sites

Soil Mapping Units

- Bd - Beltsville silt loam, 0-8% slopes
- Bg - Bibb sandy loam
- Cd - Chillum-urban land complex, 0-8% slopes
- Ce - Christiana silt loam, 15-40% slopes
- Cf - Christiana-Urban land complex, 8-15% slopes
- FD - Fluvaquents, ponded
- FF - Fluvaquents-Udifluvents complex
- Fa - Fallsington sandy loam
- Ge - Galestown-Urban land complex, 0-8% slopes
- Gf - Galestown and Rumford soils, 0-8% slopes
- Ik - Iuka sandy loam
- Ip - Iuka-Urban land complex
- Ke - Keyport fine sandy loam, 0-8% slopes
- Mg - Matapeake silt loam, 0-8% slopes
- Mp - Melvin silt loam
- Mv - Muirkirk variant complex, 15-40% slopes
- Sc - Sassafras gravelly sandy loam, 15-40% slopes
- Sm - Sunnyside fine sandy loam, 8-15% slopes
- U1 - Udorthents
- U11 - Udorthents, deep, 0-8% slopes
- U3 - Udorthents, sandy
- U5 - Udorthents, clayey
- U6 - Udorthents, smoothed
- U8 - Udorthents, sandy, smoothed
- Ub - Urban land
- Ux - Urban land-Sassafras complex, 0-8% slopes
- Wo - Woodstown sandy loam, 0-8% slopes
- Wp - Woodstown-Urban land complex, 0-8% slopes
- Water

Management Plan Environmental Assessment

FIGURE 6
Soils: Existing Conditions

Anacostia River Bottom

Decades of industrial and urban activities throughout the Anacostia River watershed have degraded the river and caused the substantial loss of tidal fringe wetlands and marshes. The water and sediment quality in the Anacostia River has been degraded by nutrient loading, hazardous substances, and trash resulting in harmful conditions for human health and the environment. To address these issues, environmental studies have been conducted over the past 20 years to assess the magnitude of the problem and to develop approaches for cleaning up the river. Recent studies show high rates of liver cancer and skin lesions in the brown bullhead catfish that inhabit the river. In response, the District of Columbia issued a public health advisory warning against the consumption of fish from the river. Primary contaminants of concern include PAHs, PCBs, pesticides, and metals (DDOE 2015).

The National Park Service is partnering with the District Department of Energy and the Environment to complete a remedial investigation/feasibility study for the Anacostia River sediments. The remedial investigation/feasibility study will characterize the nature and extent of hazardous substance contamination in the river sediments and will identify risks to human health and the environment posed by those hazardous substances. The National Park Service and the District Department of Energy and the Environment released a Phase I remedial investigation report for public comment in March 2016 and are finalizing that report based on the public comments received. The National Park Service and the District Department of Energy and the Environment are now completing a Phase II remedial investigation to fill data gaps identified during Phase I. The National Park Service and the District Department of Energy and the Environment anticipate that they will jointly issue a record of decision selecting remedial action for the river sediments in 2018.

Poplar Point Site

The Poplar Point site is located along the south-southeast bank of the Anacostia River approximately one mile upstream from the confluence of the Anacostia and Potomac Rivers. The site contains 110 acres, approximately 65 acres of which is occupied by the NPS Headquarters for National Capital Parks–East, the USPP Anacostia Operations Facility, and the USPP Aviation unit.

The site was created in part by the filling of tidal marshes along the Anacostia River with dredge spoils between 1882 and 1917. This section of Anacostia Park has undergone a variety of uses since that time. The southwestern portion of the site has historically been divided into two parcels, both of which supported nurseries from the 1927 until 1993. The District of Columbia's former Lanham Tree Nursery occupied 20 acres within the southwestern portion of the site, and the other nursery, immediately adjacent to the DC Nursery, was operated by the Office of the Architect of the Capitol. Both nursery grounds and greenhouses have been fallow and vacant for approximately 20 years. The central and eastern portions of the site were occupied by the Naval Receiving Station (NRS) from the 1940s through the 1960s. In the late 1980s through 1990s, the Washington Metropolitan Area Transit Authority extended the Green line underground through the western end of the former NRS area. The Stickfoot creek/storm sewer bisects the site, running through a culvert under the central portion of the site, and conveys both storm water and Stickfoot Creek from areas south of the site to the Anacostia River.

Although there have been a number of prior environmental assessments and related investigations, they have been limited in scope and were focused primarily on the southwestern portion of the site, in the areas

formerly operated by the District of Columbia and the Architect of the Capitol. Those investigations detected metals, pesticides, SVOCs, VOCs, petroleum hydrocarbons, and PCBs above risk-based screening levels. In addition, empty and full drums have been found buried in and around the wetlands and at the site of the former nurseries.

In 2006, Congress enacted legislation (Public Law 109-396, commonly referred to as the DC Lands Act) directing the United States to transfer title to the site to the District of Columbia, but the transfer has not yet occurred.

In September 2008, the National Park Service and the District of Columbia entered into a consent order under the Comprehensive Environmental Response, Compensation, and Liability Act, by which the District agreed to conduct a remedial investigation/feasibility study for the site under the oversight of the National Park Service. The District will complete the remedial investigation for the site under that consent order.

Washington Gas Site

The Washington Gas Light Company (Washington Gas) site is located on the north-northwest bank of the Anacostia River between M Street and the river, northeast of the 11th Street Bridges. The site was formerly owned by the United States and managed by the National Park Service but is now owned by the District of Columbia. The area is adjacent to the former site of the Washington Gas East Station manufactured gas facility, which produced gas by heating coal or oil. The facility operated between 1888 and the mid-1980s. The site is contaminated with heavy metals, PAHs, and coal tar from the Washington Gas facility.

The site has been divided into two operable units: Operable Unit 1 (OU1) includes the surface and subsurface soils on the site, and Operable Unit 2 (OU2) includes groundwater below the site and surface water and sediments in the Anacostia River that have become contaminated as a result of the operation of the Washington Gas facility. The National Park Service selected a remedy for OU1 in a record of decision issued in 2006.

In 2012, the United States and Washington Gas entered into a consent decree, which required Washington Gas to implement the selected remedy for OU1 and to perform a remedial investigation/feasibility study for OU2.

In the summer of 2015, Washington Gas completed the OU1 remedy, removing contaminated surface and subsurface soil, backfilling with clean fill, and initiating re-vegetation of the site. Washington Gas will have two years to establish a healthy vegetative cover over the property. Public access to the property will be limited by a fence for two years to ensure successful re-vegetation. The section of Anacostia Riverwalk trail that crosses through the site will not be accessible while vegetation becomes established, but a detour is already in place for trail users (NPS 2015b).

Washington Gas is scheduled to complete the OU2 remedial investigation in November 2018 and the OU2 feasibility study no later than June 2020. Following the completion of the remedial investigation/feasibility study for OU2, the National Park Service will issue a record of decision selecting a remedy for OU2.

SOILS AND SEDIMENTS

Management activities proposed under all alternatives have the potential to result in impacts on soils and sediments within the park due to the potential for construction activities and park use associated with designated management zones. The appropriate development, facilities, and activities permitted under each zone would determine the level of soil disturbance that could occur throughout the park. Impacts could be related to soil disturbance, exposure, erosion, and compaction during potential construction and use. Therefore, the impact topic of soils and sediments is retained for further analysis.

AFFECTED ENVIRONMENT

Soil Types

Soil scientists identify various soil types according to physical, chemical, and geomorphic/pedogenic characteristics. Knowing a soil type helps to understand those properties and characteristics that may be affected by a project. The following describes the soil types within the project area. See figure 6 for a map of soil types and table 5 for the approximate acreages of soil types within the project area. Soil information was obtained from the Natural Resources Conservation Service Web Soil Survey (NRCS 2016).

TABLE 5. ANACOSTIA PARK SOIL TYPES

Soil Category	Soils Types Present	Symbol	Approximate Acreage
Filled Land	Udorthents	U1	264.61
	Udorthents, deep	U11	257.23
	Udorthents, sandy	U3	44.43
	Udorthents, clayey	U5	8.29
	Udorthents, smoothed	U6	36.46
	Udorthents, sandy, smoothed	U8	1.28
		Total	612.30
Urban Land	Urban land	Ub	132.96
	Urban land-Sassafras complex	Ux	0.93
		Total	133.89
Natural Coastal Plain Floodplain	Bibb sandy loam	Bg	83.17
	Iuka sandy loam	Ik	88.16
	Iuka-Urban land complex	Ip	3.97
	Melvin silt loam	Mp	15.09
		Total	190.39
Natural Coastal Plain Upland Terrace	Beltsville silt loam	Bd	0.15
	Chillum-Urban land complex	Cd	0.10
	Christiana silt loam	Cf	0.30
	Fallsingston sandy loam	Fa	6.39
	Galestown-Urban land complex	Ge	22.62
	Galestown and Rumford soils	Gf	16.35
	Keyport fine sandy loam	Ke	2.54
	Matapeake silt loam	Mg	4.78
	Muirkirk variant complex	Mv	0.27
	Sassafras gravelly sandy loam	Sc	1.26

TABLE 5. ANACOSTIA PARK SOIL TYPES (CONT.)

Soil Category	Soils Types Present	Symbol	Approximate Acreage
Natural Coastal Plain Upland Terrace (cont.)	Sunnyside fine sandy loam	Sm	0.27
	Woodstown sandy loam	Wo	0.44
	Woodstown-Urban land complex	Wp	0.87
		Total	56.34
Unconsolidated Alluvium	Fluvaquents, ponded	FD	29.53
	Fluvaquents-Udifluvents complex	FF	1.91
		Total	31.44

Source: NPS GIS data

Filled Land (Udorthents) and Urban Land

The Anacostia Watershed has seen major alterations to its soil from the past 150 years of development. Major alterations of the tidal portion of the Anacostia River by the US Army Corps of Engineers began in the 1920s and left fill materials along much of the riparian buffer along the river. This filled land is known as Udorthents soils, which consists of fills, cuts, or otherwise disturbed land (Wagner 2015). The majority of soils found in the park are Udorthents. These soils are typically mixed from earthworking, dumping, and leveling. Because Udorthents soils often are formed from mixed spoil taken from other sites, heterogeneous textures can be found throughout the profile to include clays, silty loams, sandy loams, and sands. Udorthents have wide ranging variability in their shape, size, and physical properties. They can be deep to moderately deep, nearly level to steep, and well-drained to compacted. Most areas adjacent to the Anacostia River contain Udorthents soils, and the majority of all Udorthents mapped in the District of Columbia are found in the park. While site-specific data on the soil textures and properties of the Udorthents soils on the park are unknown, several Udorthents soils are given broad texture classifications such as sandy (U3) or clayey (U5). Udorthents are located at Poplar Point, park headquarters, RFK shoreline, Anacostia pavilion, picnic areas, ball fields, and Langston Golf Course (NRCS 2016). There are approximately 699 acres of filled land within the park. Though filled land occurs throughout the park, it has a considerably greater presence on the eastern side of the river (Wagner 2015).

Urban land consists of nearly level to moderately sloping areas that are generally built up and occupied by structures and infrastructure. Urban land is an NRCS category given to areas where more than 80 percent is non-soil covered by asphalt, concrete, buildings, or other impervious surfaces (NRCS 2005). Urban land occurs in many areas within the park, but primarily in the RFK Stadium area. There are approximately 131 acres of urban land within the park.

Natural Coastal Plain Floodplain Soils

Natural coastal plain floodplain soils comprise a broad category of fluvial soils formed by alluvium deposition. These soils are located in lower elevations associated with rivers and streams, are nearly level, and range in drainage class from poorly drained to moderately well drained. Textures can vary between sandy to silty. Floodplain soils have poor potential for building due to high flood frequency and flooding potential. They are most suitable as natural areas and generally have high biological activity. These soils occur in Fairlawn-Twining, Kingman Island, and the Upriver Natural Area of the park, most of which are associated with wetland ecosystems. There are approximately 190 acres of these soils within the park. Specific types of natural coastal plain floodplain soils found within the park are described below.

The Bibb series consists of very deep, poorly drained, moderately permeable soils that formed in stratified loamy and sandy alluvium. Slopes range from 0 to 2 percent and the erosion hazard is none to slight. This soil is limited in use for building, gardens, lawns, and recreational uses because of the high water table and potential of flooding. These soils can provide suitable habitat for many wildlife species. These soils are located within the small islands and Langston Golf Course at Kingman Marsh and the wetland areas on the west bank of the Anacostia River just south of New York Avenue NE. The Bibb series also make up the majority of the soils within the Kenilworth Marsh area (NRCS 2016). Bibb soils are also considered hydric soils in the District (NRCS 2015).

The Iuka series consists of nearly level, moderately well drained, moderately permeable, sandy soils that formed in stratified loamy and sandy alluvial sediments adjacent to the river and stream channels. They are saturated with water at depths of 1 foot to 3 feet below the surface during wet seasons and are subject to flooding. Slopes range from 0 to 2 percent. These soils are located at the tennis courts and picnic area just south of Pennsylvania Avenue and at Langston Golf Course. Small pockets of Iuka soils are located throughout Kenilworth Marsh (NRCS 2016). Iuka soils are considered hydric soils in the District because they formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (NRCS 2015).

A small area of the finer textured Melvin silt loam is located just east of the South Capitol Street Bridge near the park headquarters (NRCS 2016). The Melvin series consists of very deep, poorly drained soils formed in silty alluvium on floodplains and in upland depressions. Slopes range from 0 to 2 percent.

Natural Coastal Plain Upland Terrace Soils

These soils are located on the uplands of the Coastal Plain associated with river terraces, escarpments, and hillside shoulders and backslopes. They are composed of marine deposits, silty materials, and unconsolidated deposits of sandy sediments. These soils have variable suitability for development due to slopes and water table depths (NRCS 1976). Portions of the Kenilworth Aquatic Gardens, Kenilworth Park South, and River Terrace are characterized by these soils. There are approximately 70 acres of these soils throughout the park. Specific types of natural coastal plain upland soils found within the park are described below.

An area of Christiana silt loam and Keyport fine sandy loam soils are located within the Langston Golf Course (NRCS 2016). These soils are considered very deep and moderately well drained. The Keyport soil occurs in upland backslopes along the toe of the steep sloping Christiana soil. Permeability is very slow to slow in the Keyport series. Permeability of the Christiana series is moderate to moderately slow, and is particularly vulnerable to erosion due to its landscape position along the terrace escarpment slope ranging between 15 to 40 percent.

Small areas of the Galestown and Rumford soils, 0 to 8 percent slopes, and the Fallsington sandy loam are located near the entrance to the Kenilworth Aquatic Gardens (NRCS 2016). The Galestown and Rumford soil consists of very deep, somewhat excessively drained, moderately rapid, sandy soils. Slopes range from 0 to 15 percent. The Fallsington soil type occurs on broad flats and consist of very deep, poorly drained, moderate to moderately slow permeable soils containing clayey subsoil. Slopes range from 0 to 2 percent.

The Matapeake series consists of fine textured, very deep, well drained, moderate to moderately slow permeable soils. Slopes range from 0 to 8 percent. These soils are located at the basketball courts just south of Benning Road (NRCS 2016).

Small areas of Beltsville silt loam, Sassafras gravelly sandy loam, Sunnyside fine sandy loam, Muirkirk variant complex, and Woodstown sandy loam are located on the west bank of the Anacostia River just north and south of the Maryland line (NRCS 2016). The Beltsville silt loam and Woodstown sandy loam are very deep, moderately well drained soils with moderate permeability. The Sunnyside fine sandy loam and Sassafras gravelly silt loam are very deep, well drained soils with moderate permeability. The Muirkirk series consists of very deep, well drained to somewhat excessively drained sandy soils found on 15 to 40 percent slopes along the terrace escarpment.

Unconsolidated Alluvium (Fluvaquents)

Fluvaquents are young soils formed and shaped in floodplains as a result of alluvium deposits carried by surface water flows from streams and rivers. Slopes range between 0 to 2 percent. These soils have a high potential for flooding, often maintain a high water table, and are subject to frequent changes caused by stream overflow. Most areas are flooded at least twice annually.

Fluvaquents are found along the Anacostia River and include sandbars and islands in the river and in the headwaters to Kingman Lake. There are approximately 31 acres of these soils within the park. The unconsolidated structure of fluvaquents makes them vulnerable to sediment transport during flood events. The material is dominantly sandy, although it can vary in texture and contain thin layers of organic material. Much of this complex is wooded; however, some areas are too gravelly or sandy to support dense vegetation. These soils provide suitable habitat for many wildlife species and can be managed as natural areas. The Kenilworth Marsh is largely composed of fluvaquents, as is a small area located in the Anacostia River Fringe Wetlands adjacent to the Anacostia River just south of Benning Road (NRCS 2016). Fluvaquents are also considered a hydric soil in the District (NRCS 2015).

Soil Quality

Erosion

Soil erosion occurs along the Anacostia River and its tributaries from the large, flashy volumes of stormwater captured by impervious land and routed to stormwater pipes. Erosion has occurred in the tributaries from urban runoff and flash floods. Soil surrounding the outfall pipes along the seawall has eroded away due to the high velocity of the water spilling into the river. The seawall along both the east and west sides of the river has failed in various areas, due to concrete stones falling out and water flow washing out the soil from behind the seawall. The loss of soil has created large scour holes behind the seawall, particularly in areas along the river bank below the CSX railroad tracks near the existing park headquarters building. Construction along the river has also resulted in erosion of soils. Some small-scale erosion occurs due to the tidal action on the mud flats.

Areas of Potential Soil Contamination

The Anacostia River shoreline has a history of industrial uses and was the site of several landfills. Remnants of these industrial uses include several contaminated sites within the park. Other industrial uses have also contributed to soil contamination in the park. Efforts are underway in many of these areas to investigate or remediate soil contamination pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). Areas of potential contamination include Kenilworth Park, Poplar Point, the Anacostia River bottom, the Washington Gas site on the western shore of the river, and the PEPCO site at Buzzard Point. See figure 6 for the locations of these CERCLA sites within the project area. These areas and the related investigation or remediation efforts are described in further detail in the "Past, Present, and Reasonably Foreseeable Actions" section.

METHODOLOGY AND ASSUMPTIONS

Potential impacts on soils are analyzed in terms of changes to the condition of the soils within the project area. The current conditions of soils, as presented in the affected environment section above, were compared with the alternatives described in chapter 2 to determine how soils would be affected. For purposes of this assessment, site specific data are unavailable regarding certain soil properties such as textures of historic fill (clay loam versus sandy loam, for instance), depth of historic fill, degree of soil compaction and permeability, soil pH, and soil fertility. Some generalizations, however, can be made based on soil properties described in a soil survey for a particular soil type, or from past land use. As an example, one may expect soils at overflow parking areas to be more compacted than other areas, while areas of managed turf may have greater soil structure and fertility due to soil amendments although they are identified as the same soil series.

The resource-specific context for the evaluation of impacts on soils includes the following:

- Soil, topography, and geologic features are a critical part of the ecological community. Direct impacts on these resources can also have secondary indirect impacts on other natural resources such as vegetation, hydrology, water quality, and wildlife, among others.
- Several sites within and adjacent to the park have contaminated soil and substrate conditions caused by historic land uses. These sites include the Poplar Point Site, the Kenilworth Landfill, the Washington Gas Site, and the Anacostia River bottom.
- NPS *Management Policies 2006* call for park managers to preserve soil resources, and to the extent possible, the park will prevent unnatural erosion, physical removal, or contamination of the soil or its contamination of other resources (NPS 2006).

IMPACTS OF ALTERNATIVE 1: NO ACTION

Impact Analysis

Under the no-action alternative, continuation of existing management protocols would have the potential to result in long-term impacts on soils and sediments. The National Park Service would continue to manage the park as it has in recent years in accordance with the statements for management for the park (NPS 1988a and 1988b) and NPS *Management Policies 2006* (NPS 2006). No new major facilities would

be developed in the park. Routine maintenance of existing facilities would continue to involve occasional ground surface disturbances such as road repairs, utility repairs, turf management, wetland restoration, and landscape management. Soils exposed during these activities could be at risk of erosion due to wind and stormwater runoff, though the impacts would be temporary and of a relatively small scale.

No new construction is anticipated on a scale that could result in expanses of exposed soil within the floodplain causing the risk of erosion from a flood event. However, maintenance work in floodplain soils (Melvin, Bibb, and Iuka series) could result in these soils being exposed to possible flood events resulting in some soil movement from river overflow, especially during high energy storm events. Finer textured soils such as the Bibb sandy loam would be most susceptible to alluvial transport. Currently eroded areas around outfall pipes and headwalls would continue to remain unstable until repairs could be accomplished, resulting in soil exposure, collapsing banks, and sediment transfer. The biological, physical, and chemical properties of the Udorthents, Iuka and Bibb soils identified within the Langston Golf Course would continue to be altered from the distribution of fertilizers and pesticides associated with maintenance of the golf course (Pillar 2002). Management of the sports fields may cause similar alterations in soil properties in those areas.

Soil impacts in upland terrace soils such as the Galestown, Matapeake, and Udorthents would be limited to temporary disturbances from maintenance of existing facilities. Finer texture soils such as Udorthents, clayey (U5) would be susceptible to increased compaction caused by heavy equipment during maintenance activities. Areas maintained in grass for public recreation would likely receive the highest level of soil compaction from foot traffic and tractor mowers. Highly erodible soils occurring on steep slopes such as the Christiana, Sunnyside, and Muirkirk series found on the western side of the park would remain vegetated and undisturbed.

Location and condition of contaminated sites would continue to be a planning factor when determining appropriate implementation of ground disturbing activities, and the National Park Service would continue to avoid disturbance of contaminated soils whenever possible.

Continued and future management actions (as described in chapter 2) involving ground surface disturbance throughout the park would be subject to compliance with sedimentation and erosion control regulations. For each of the specific projects, sedimentation and erosion control plans would be developed to consider the existing soil types and land slopes as well as the contributing watershed size to best locate construction access and staging areas and to guide the selection of appropriate best management practices such as silt fence, sediment basins, and turbidity curtains. Such plans would mitigate potential impacts resulting from soil disturbance for each construction activity.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting soils and sediments under alternative 1 would include the construction of the proposed Anacostia Riverwalk Trail, Langston Golf Course rehabilitation, the management plan for wetlands and resident Canada geese, the Anacostia Watershed Restoration Plan, the Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, transportation improvement projects adjacent to the park, and investigation or remediation

actions of contaminated sites. Collectively, these actions have resulted or may result in both adverse and beneficial impacts on soils and sediments.

Adverse impacts have or would occur due to construction and development projects in the area; DDOT is constructing paved bicycle and pedestrian trails along the waterfront for the Anacostia Riverwalk Trail, which has and would result in adverse impacts to soils through ground disturbance during construction, a conversion of natural soil to non-soil from the asphalt pavement, and soil compaction during use. The naturally occurring floodplain Bibb and Iuka soils would be most impacted by the Anacostia Riverwalk Trail. The land transfer and subsequent redevelopment of Poplar Point would result in adverse impacts on existing Udorthents soils due to excavation along the shoreline for increased floodplain capacity and fill added in the eastern part of the site to create a higher base elevation. Soil compaction would likely occur due to heavy equipment leveling soil for buildings and new infrastructure. Exposed soils during construction could result in erosion, particularly during a flood event. However, these impacts would be mitigated through erosion and sedimentation control and other stormwater management practices. Ongoing implementation of actions under the DC Water Clean Rivers Project has resulted and would result in adverse impacts on soils due to the large amount of soils removed for the tunnels. Additionally, during construction, soils would be subject to compaction from heavy machinery and erosion of exposed soils due to wind and stormwater. These impacts would be temporary and would be mitigated through a sediment and erosion control plan. Transportation improvement projects adjacent to the park, particularly the South Capitol Street Corridor, would result in adverse impacts where new pavement would be added for the access roads and multiuse trail into the park, due to compaction and soil exposure during construction activities. However, these would be located in previously disturbed areas, so impacts would be minimal. The investigation or remediation of contaminated sites may include excavation of contaminated soils, which could result in adverse impacts due to potential erosion during soil exposure.

Beneficial impacts have or would occur due to restoration actions and erosion control. The rehabilitation of Langston Golf Course would result in a beneficial impact on soils due to improved drainage that otherwise would cause soil loss and sediment transfer, and installation of erosion control liners to reduce erosion of soils. Implementation of the Wetland and Resident Canada Goose Management Plan would result in a beneficial impact on soils because of improvements in wetlands, increased vegetative growth to stabilize soils with a reduction in goose herbivory, and erosion control. Ongoing restoration efforts for the Anacostia Watershed Restoration Plan have resulted and would continue to result in beneficial impacts on soils because actions would restore unstable and eroding stream channels that currently transfer heavy sediment loads downstream. Transportation improvement projects adjacent to the park, particularly the South Capitol Street Corridor, would result in beneficial impacts to soils where impervious surfaces of unneeded access roads would be removed, soil biological and physical functions are restored, and the area would be revegetated.

When combining the impacts of these actions with the impacts of alternative 1, the cumulative impact would be both beneficial and adverse. Alternative 1 would contribute an imperceptible increment to the cumulative impact on soils resources.

Conclusion

Alternative 1 would have minimal disturbances to floodplain and upland terrace soils. Although existing management actions under alternative 1 could continue to result in changes in the characteristics of the soil profile at various locations within the project area, these activities would likely require only shallow excavations or ground disturbance. Such disturbances would be unlikely to cause any long-term secondary impacts on the local ecological community. All local disturbances would be mitigated through strict adherence to standard sedimentation and erosion control practices. The National Park Service would continue to consider the location of sites contaminated with hazardous materials and avoid disturbance whenever possible. Generally, park managers would continue to preserve soil resources, and to the extent possible, the park will prevent unnatural erosion, physical removal, or contamination of the soil in accordance with NPS *Management Policies 2006*. Therefore, the impacts of alternative 1 on soils would not approach the level of significant.

IMPACTS OF ALTERNATIVE 2

Impact Analysis

Alternative 2 envisions the highest degree of expansion and enhancement of facilities (based on acreage), focusing on recreational and educational opportunities, with 30 percent of the park falling within the natural resource recreation zone designation.

Though specific facilities and improvements would be determined and proposed during future planning projects, proposed activities under alternative 2 would generally include the following:

- uses that require little physical development, including:
  - ❑ picnic facilities
  - ❑ playgrounds
  - ❑ trails
  - ❑ athletic fields
  - ❑ waterfront promenades and plazas
  - ❑ day-time parking facilities
- uses that may require a higher level of physical development, such as:
  - ❑ marinas
  - ❑ docks
  - ❑ piers
  - ❑ boat launches
  - ❑ boat tie-ups
  - ❑ boathouses
  - ❑ bridges
  - ❑ park roads
  - ❑ debris removal facilities
  - ❑ outdoor water sports facilities
  - ❑ boardwalks to interpret wetlands
  - ❑ riparian edge treatments

Under alternative 2, implementation of the proposed activities in each management zone would have the potential to result in short-term and long-term impacts on soils resources due to the development of the facilities listed above. During future projects tiered to this management plan, new or enhanced facilities within the zones would result in ground surface disturbances, and would generally include construction activities such as excavation for foundations, footers, and utilities as well as grading necessary for road construction, drainage improvements and stormwater management. Development of trails and parking areas would result in increased areas of impervious surfaces, although the precise amount has not been determined.

Natural soils with the highest potential to be affected by this alternative include the Melvin silt loam and Iuka sandy loam series. These natural soils occur along the eastern side of the Anacostia River where new construction activities may be proposed for organized sports and recreation. Potential impacts to these soils include soil compaction and erosion during construction. In addition, the use of impervious cover for parking would result in the loss of soil available to support vegetation and natural ecosystems. Alterations in soil chemistry could result from potential oil spills from heavy equipment during construction, as well as pesticide and fertilizer applications within sports fields and manicured lawns and shrubs around buildings and parking areas. Under this alternative, soil biological activity would also be reduced in these natural soils from compaction and impervious surface additions (Pillar 2002).

Construction from potential infrastructure projects that could occur in the organized sport and recreation zone and the community activities and special events zone would impact the Udorthents soil type the most. Although these soils are previously disturbed and unnatural, they have become stable with age as vegetation has become established and matured. This stable soil condition would be disrupted by the installation of new structures. Such installation would result in new impervious cover, earthworking and compaction, and potential soil and sediment transfer during rain events. During construction, impacts would be temporary, however, and would be mitigated through the use of best management practices. While the level of biological activity within these spoil areas are not fully known, the re-introduction of construction activities for new facilities would contribute additional changes in chemical and physical properties of soils that could further alter existing soil microbes and invertebrates.

Location and condition of contaminated sites would continue to be a planning factor when determining appropriate implementation of ground disturbing activities, and the National Park Service would continue to avoid disturbance of contaminated soils whenever possible. Soils would be sampled prior to soil disturbances to gain a better understanding of the concentration and toxicity of chemicals that may be stored in the soils, and mitigative measures would be taken to insure existing toxic chemicals are controlled.

During final design of potential future projects, the impacts of the action would be addressed and assessed through sedimentation and erosion control practices required by regulation. For each of the specific projects, sedimentation and erosion control plans would be developed to consider the existing soil types and land slopes as well as the contributing watershed size to best locate construction access and staging areas and to guide the selection of appropriate best management practices such as silt fence, sediment basins and turbidity curtains. Such plans would mitigate potential impacts resulting from soil disturbance for each construction activity. In the instances where structural improvements are proposed, such as roads, picnic shelters, buildings and bridges, the soil profile would be permanently displaced, and impervious areas may be locally increased, leading to long-term impacts, but on a relatively small scale park-wide.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting soils and sediments under alternative 2 would include the construction of the proposed Anacostia Riverwalk Trail, Langston Golf Course rehabilitation, the management plan for wetlands and resident Canada geese, the Anacostia Watershed Restoration Plan, the Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, transportation improvement projects adjacent to the park, and investigation or remediation of contaminated sites. Collectively, these actions have resulted or may result in both adverse and

beneficial impacts on soils and sediments. The impacts of these actions are described under alternative 1. When combining the impacts of these actions with the impacts of alternative 2, the cumulative impact would be both beneficial and adverse. Alternative 2 would contribute an imperceptible increment to the cumulative impact on soils and sediments.

Conclusion

Alternative 2 could result in changes in the characteristics of the soil profile in the project area due to construction of the types of facilities identified above. This alternative proposes the highest degree of enhancement and improvement of park facilities, each requiring some level of excavation or grading of the soil profile. However, these localized soil disturbances would be mitigated through strict adherence to standard sedimentation and erosion control practices. Soils would continue to support ecosystem functions. The National Park Service would continue to consider the location of sites contaminated with hazardous materials and avoid disturbance whenever possible. Generally, park managers would continue to preserve soil resources, and to the extent possible, the park would prevent unnatural erosion, physical removal, or contamination of the soil in accordance with NPS *Management Policies 2006*. Therefore, the impacts of alternative 2 on soils would not approach the level of significant.

IMPACTS OF ALTERNATIVE 3: NPS PREFERRED

Impact Analysis

Alternative 3 envisions a lower degree of expansion and enhancement of facilities (based on acreage) than alternative 2, with an increased focus on integration within expanded natural areas. There would be similar attention to enhanced recreational and educational opportunities situated in and around the natural areas of the park, but 45 percent of the park would fall within the natural resource zone designation under alternative 3.

The potential future development and facility expansion that would be appropriate in each management zone under alternative 3 would result in the same impacts on soils and sediments as described under alternative 2, though to a lesser degree. Because more acres of parkland would be designated as natural resource recreation zone under alternative 3, there would be less potential for future development projects that would require disturbance to soils and sediments within the park. Precise areas of development within the management zones have not been determined.

As under alternative 2, the natural soils with the highest potential to be affected by this alternative include the Melvin silt loam and Iuka sandy loam series. These natural soils occur along the eastern side of the Anacostia River where new construction activities may be proposed for organized sports and recreation. Potential impacts to these soils include soil compaction and erosion during construction. In addition, the use of impervious cover for parking would result in the loss of soil available to support vegetation and natural ecosystems. Alterations in soil chemistry could result from potential oil spills from heavy equipment during construction, as well as pesticide and fertilizer applications within sports fields and manicured lawns and shrubs around buildings and parking areas. Under this alternative, soil biological activity would also be reduced in these natural soils from compaction and impervious surface additions (Pillar 2002).

Under this alternative, use of portions of the Udorthents soil type near Kenilworth Park would be converted from existing sports fields and recreational areas to natural zones. This change in use would result in a beneficial impact to soils in this zone through long-term stabilization and enhancement of the physical, chemical, and biological properties of the soil in these areas as multi-layered vegetation (i.e., trees, shrubs, herbs) is established.

In addition, this alternative would enhance natural vegetation establishment within disturbed soil areas along the western side of the park within the Langston Golf Course and along the riverfront next to RFK Stadium. Expected benefits to these soils over the long term include improved soil fertility, soil chemical balance, soil moisture holding capacity, structure, soil temperature, and biological activity. The addition of natural vegetation would also serve to increase soil aeration that would improve the buffering capacity along the riparian zone and enhance the soil's ability to absorb fertilizers and pesticides applied to the golf course before those chemicals reach the neighboring surface water.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting soils resources under alternative 3 would include the construction of the proposed Anacostia Riverwalk Trail, Langston Golf Course rehabilitation, the management plan for wetlands and resident Canada geese, the Anacostia Watershed Restoration Plan, the Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, transportation improvement projects adjacent to the park, and investigation or remediation of contaminated sites. These actions have resulted or may result in both adverse and beneficial impacts on soils and sediments. The impacts of these actions are described under alternative 1. When combining the impacts of these actions with the impacts of alternative 3, the cumulative impact would be both beneficial and adverse. Alternative 3 would contribute an imperceptible increment to the cumulative impact on soils and sediments.

Conclusion

Alternative 3 could result in changes in the characteristics of the existing soil profile in the project area due to the activities identified above. This alternative proposes a lesser degree of enhancement and improvement of park facilities than under alternative 2, though future projects would still require some level of excavation or grading of the soil profile. However, these local disturbances would be mitigated through strict adherence to standard sedimentation and erosion control practices. Soils would continue to support ecosystem functions. The National Park Service would continue to consider the location of sites contaminated with hazardous materials and avoid disturbance whenever possible. Generally, park managers would continue to preserve soil resources, and to the extent possible, the park would prevent unnatural erosion, physical removal, or contamination of the soil in accordance with NPS *Management Policies 2006*. Therefore, the impacts of alternative 3 on soils would not approach the level of significant.

IMPACTS OF ALTERNATIVE 4

Impact Analysis

Alternative 4 envisions maintenance of existing facilities and a lesser degree of expansion and enhancement of facilities (based on acreage) than alternatives 2 and 3, with an increased focus on expanded natural areas and improved access through trailheads, parking areas and connecting trails. The primary focus would be on naturalizing areas of the park and enhancement of and improved access to existing natural areas. Fifty percent (50%) of the park would fall within the natural resource recreation zone designation. Proposed activities would generally be the same as under alternatives 2, but to a lesser degree due to the increase in natural resource zone designation.

Implementation of the potential development in each management zone under alternative 4 would have the potential to result in the same impacts on soils and sediments as under alternatives 2 and 3, though to a lesser degree than either of the previous action alternatives. Because more acres of parkland would be designated as natural resource recreation zone, there would be less potential for future development projects that would require disturbance to soils and sediments within the park. Precise areas of development within the management zones have not been determined.

As under alternatives 2 and 3, natural soils with the highest potential to be affected by this alternative include the Melvin silt loam and Iuka sandy loam series. These natural soils occur along the eastern side of the Anacostia River where new construction activities may be proposed for organized sports and recreation. Potential impacts to these soils include soil compaction and erosion during construction. In addition, the use of impervious cover for parking would result in the loss of soil available to support vegetation and natural ecosystems. Alterations in soil chemistry could result from potential oil spills from heavy equipment during construction, as well as pesticide and fertilizer applications within sports fields and manicured lawns and shrubs around buildings and parking areas. Under this alternative, soil biological activity would also be reduced in these natural soils from compaction and impervious surface additions (Pillar 2002).

This alternative includes the largest change in use of sports fields and recreational areas near Kenilworth Park to natural habitats within areas mapped as Udorthents. Although these areas have artificially created soils with mixed textures, likely poor structure and fertility, this action would result in the long-term stabilization and enhancement of soil physical, chemical, and biological properties as multi-layered vegetation (i.e., trees, shrubs, herbs) is established. These benefits would be more widely spread under alternative 4 than under alternative 3.

Another benefit to soils that would take place under both alternatives 3 and 4 is enhancement of natural vegetation establishment within disturbed soil areas along the western side of the park within the Langston Golf Course and along the riverfront next to RFK Stadium. Expected benefits to these soils over the long term include improved soil fertility, soil chemical balance, soil moisture holding capacity, structure, soil temperature, and biological activity. The addition of natural vegetation would also serve to increase soil aeration that would improve the buffering capacity along the riparian zone and enhance the soil's ability to absorb fertilizers and pesticides applied to the golf course before those chemicals reach the neighboring surface water.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting soils and sediments under alternative 4 would include the construction of the proposed Anacostia Riverwalk Trail, Langston Golf Course rehabilitation, the management plan for wetlands and resident Canada geese, the Anacostia Watershed Restoration Plan, the Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, transportation improvement projects adjacent to the park, and investigation or remediation actions of contaminated sites. These actions have resulted or may result in both adverse and beneficial impacts on soils and sediments. The impacts of these actions are described under alternative 1. When combining the impacts of these actions with the impacts of alternative 4, the cumulative impact would be both beneficial and adverse. Alternative 4 would contribute an imperceptible increment to the cumulative impact on soils and sediments.

Conclusion

Alternative 4 could result in changes in the characteristics of the existing soil profile in the project area due to ground disturbance from construction of the proposed facilities identified above. This alternative proposes the lowest degree of enhancement and improvement, each requiring some level of excavation or grading of the soil profile. However, these local disturbances would be mitigated through strict adherence to standard sedimentation and erosion control practices. Soils would continue to support ecosystem functions. The National Park Service would continue to consider the location of sites contaminated with hazardous materials and avoid disturbance whenever possible. Generally, park managers would continue to preserve soil resources, and to the extent possible, the park would prevent unnatural erosion, physical removal, or contamination of the soil in accordance with NPS *Management Policies 2006*. Therefore, the impacts of alternative 4 on soils would not approach the level of significant.

WETLANDS

Most of the remaining tidal wetlands in the District of Columbia are located within the park. These and the other riparian non-tidal wetlands in the park provide a number of important natural functions related to wildlife habitat, water quality, and stormwater management. During scoping, the public and interested parties identified wetlands as a significant resource within the park, important to resource management and to recreation. Wetlands are also mentioned in the establishing legislation for the park. Ecosystem rehabilitation, development, and redevelopment actions have the potential to affect the remaining wetlands and wetlands vegetation in the project area. Therefore, the impact topic of wetlands was retained for further analysis.

AFFECTED ENVIRONMENT

The urban development, dredge and fill activity, and landfills that created the park have dramatically changed the Anacostia River ecosystem, particularly its wetlands. The Anacostia River—once meandering through a broad expanse of tidal wetlands supporting hundreds of acres of wild rice and submerged aquatic vegetation—is today confined to a channel half the river's original width. Over time, approximately 2,500 acres of tidal emergent wetlands have been filled along the river between Bladensburg and the confluence of

the Potomac River (USACE 1994). Fewer than 100 acres of tidal emergent wetlands remain, representing a loss of over 90 percent of the original tidal wetlands in the watershed (USACE 1994). Currently the largest wetlands within the Anacostia watershed are within Anacostia Park in Kenilworth Marsh, in Kingman Lake, and in the Fort Lincoln wetland complex across the river from Kenilworth Marsh. These three areas compose approximately 50 percent of the total wetland acreage remaining in the District of Columbia (DC DCRA 1997). See figure 7 for a map of the wetlands that occur within the project area.

Several wetland inventories and studies have been undertaken in the past, including in 1993 for the *Fort Lincoln Wetland Complex Study* (NPS 1993) and in 1997 for the *DC Wetland Conservation Plan* (DC DCRA 1997). The most recent study was completed in 2008 when the National Park Service conducted a wetland field investigation to collect information on the existing conditions of the wetlands occurring within the park for the preparation of the 2014 *Anacostia Park Wetlands and Resident Canada Goose Management Plan/Environmental Impact Statement* (NPS 2014). This 2008 investigation showed that both tidally influenced (referred to as tidal) freshwater wetland systems and non-tidal wetland systems are present within the park. The majority of the tidal wetlands are represented by the degraded wetland areas either enhanced or restored by the National Park Service in cooperation with the US Army Corps of Engineers and other entities. The tidal wetlands are located within the channel of the Anacostia River or have a direct connection to the river through the seawall that exists along the majority of the shoreline. Non-tidal wetlands within the park are typically smaller in size than the tidal wetlands. Forested, scrub-shrub, emergent, and open water non-tidal wetlands are present. Many of these wetlands appear to be remnant wetlands that have been cut off from their historic connections to the Anacostia River by dredging and realignment of the river, construction of the seawall along much of the park's shoreline, and the construction of embankments for transportation projects. The tidal and non-tidal wetlands of the park support native plant and animal species. However, common reed (*Phragmites australis*) and purple loosestrife (*Lythrum salicaria*) are present in both types of wetlands within the park; these plants are characterized as invasive plant species and pose management difficulties for the wetland areas within the park.

Tidally Influenced Freshwater Wetlands

Freshwater tidal wetlands occur in sites where flooding occurs in response to lunar or wind tides, but where the water has less than 0.5 parts per thousand salt content (NC DENR 2010). Tidal fresh waters occur in rivers, where freshwater flow keeps out salt water, and along the large sounds where distance from seawater inlets keeps the water fresh. Freshwater tidal wetlands are structurally diverse and can support a variety of different habitat types as well as numerous wildlife species, including breeding bird habitat. Along the Anacostia River, the habitat types supported by freshwater tidal wetlands can include low marsh, high marsh, mud flats, substrate that supports submerged aquatic vegetation, and further inland wet meadows and forested wetlands. The plant species diversity and vegetation of tidal freshwater marshes vary with salinity, duration of inundation, and disturbance. Mud flats are important components of tidal freshwater marshes and include areas fully exposed only at low tide. Mudflats can be bare or sparsely vegetated with either emergent vegetation or submerged aquatic vegetation. Like mudflats, submerged aquatic vegetation is an important component of tidally-influenced wetlands, provides a wide array of ecological services, and is very sensitive to water depth and substrate (Strange et al. 2008). The tidally-influenced wetlands within the park also contribute recreational, educational, and historical values to the park. Of the approximately 104.5 total acres of wetland within the park, approximately 55.7 acres are tidally influenced. Areas of tidally-influenced wetlands in the park are described below.

Anacostia Park

- Anacostia Boundary
- National Capital East Parks (NPS)
- Other Park Land
- Federal and District Land
- Military
- University
- Schoolground (DC)
- Existing Sports Field
- DDOT Transportation Projects
- 100 Year Flood Plain
- 500 Year Flood Plain
- Metro
- Potential Memorial Site

- Water Taxi - Existing
- Water Access (River Trail) - Existing
- Water Trail
- Anacostia Riverwalk Trail - Existing
- Anacostia Riverwalk Trail - Proposed
- Other Trail - Existing
- Pedestrian Entrances - Existing
- Vehicular Entrances - Existing

- Existing Multi-Use Fields
- Existing Park Lands

① Good Hope Road Entrance
② Nicholson Street Entrance
③ Deane Avenue Entrance
④ Kenilworth Park South Entrance
⑤ Kenilworth Park North Entrance
⑥ Kenilworth Acquatic Gardens Entrance
⑦ Langston Golf Course Entrance

0 600 Meters
0 600 Feet

North

Source: NPS GIS Data

National Park Service
US Department of the Interior

Anacostia Park
Washington, DC

Wetland Legend

- Aquatic Garden
- Freshwater Tidal Mixed High Marsh
- Freshwater Tidal Swamp
- Maple-Ash Swamp Forest
- Reed-grass Tidal Marsh
- Successional Box-elder Floodplain Forest
- Successional Herbaceous Wetland
- Successional Red Maple Small River Floodplain Forest
- Successional Woody Wetland
- Tidal Wetland Restoration and Experimental Area
- Unconsolidated Shore
- Open Water

Management Plan Environmental Assessment

FIGURE 7
Wetlands: Existing Conditions

Kenilworth Marsh

Kenilworth Marsh is a wetland of significant size under the tidal influence of the Anacostia River. The current marsh has a direct connection with the Anacostia River via a breach in the seawall along the river and supports diverse plant and animal communities. Native plant species present in the Kenilworth Marsh include cattails (*Typha* spp.), willow (*Salix* spp.), pickerelweed (*Pontedeira cordata*), reed canary grass (*Phalaris arundinacea*), marsh hibiscus (*Hibiscus moscheutos*), jewelweed (*Impatiens capensis*), yellow pond lily (*Nuphar advena*), and wild rice (*Zizania aquatica*). Common reed and purple loosestrife are present, as well as other invasive species being managed by the National Park Service. In 1927 Kenilworth Marsh encompassed approximately 300 acres of tidal wetlands. Dredging, filling, and landfill activity began in the 1930s, and by 1989 the tidal wetlands were reduced to 76 acres. In 1993 the US Army Corps of Engineers in partnership with the National Park Service and the District of Columbia began a project that incorporated river dredging and wetland restoration. Dredged sediment from the Anacostia River was deposited in Kenilworth Marsh to raise the substrate levels where wetland plants could grow. The area was planted with over 350,000 plants comprising 16 native wetland species. When completed, 40 acres of restored freshwater emergent tidal wetlands were added to the Kenilworth Marsh wetland system.

In addition to the Kenilworth Marsh restored wetlands, the *DC Wetland Conservation Plan* (DC DCRA 1997) identified two wetlands adjacent to Kenilworth Marsh as high value wetlands and recommended them for wetland restoration and as sites for additional wetland creation. Along Beaverdam Creek at Kenilworth Courts, there are approximately 17.1 acres of palustrine forested wetland; these wetlands are dominated by red maple (*Acer rubrum*), silver maple (*Acer saccharinum*), spicebush (*Lindera benzoin*), lizard tail (*Saururus cernuus*), green bulrush (*Scirpus atrovirens*), woolgrass (*Scirpus cyperinus*), arrowwood (*Viburnum* spp.), woodreed (*Cinna* spp.), and arrowhead (*Sagittaria* spp.). On the east bank of the Anacostia immediately south of Kenilworth Marsh inlet, there are approximately 3 acres of palustrine forested/emergent wetlands; these wetlands are dominated by pickerelweed, narrow-leaf cattail (*Typha latifolia*), sweetflag (*Acorus calamus*), black willow (*Salix nigra*), silver maple, reed canary grass, arrowhead, river birch (*Betula nigra*), jewelweed, bulrush (*Scirpus* spp.), alder (*Alnus* spp.), spicebush, and arrowleaf tearthumb (*Polygonum sagittatum*).

Kenilworth Aquatic Gardens

Kenilworth Aquatic Gardens is composed of 44 ponds formed by excavating the Anacostia floodplain and wetlands between 1892 and 1938. The ponds are fed by tidal fluctuations and are flooded during high tides and rain. Water levels and plants are subject to manipulation by park managers. Horticultural aquatic plants dominate the ponds, including water lily (*Nymphaea* spp.), pondweeds (*Potamogeton* spp.), yellow flag (*Iris pseudacorus*), lotus (*Nelumbo* spp.), and spatterdock (*Nuphar* spp.). The Gardens have extensive wetland habitat edging the ponds that support a diversity of wetland plant and animal species. These ponds and gardens are historic resources used to maintain propagated natural resources and are part of a maintained cultural landscape.

Kingman Marsh

Kingman Lake (now known as Kingman Marsh) was developed in the 1920s and 1930s to create a recreational boating area through dredging, which replaced large areas of tidally influenced marsh.

Over time, sedimentation in the Anacostia River turned the man-made, open freshwater lake into unvegetated mud flats.

In 2000 a large-scale restoration effort was completed by a partnership among the US Environmental Protection Agency, US Army Corps of Engineers, the National Park Service, the District of Columbia, and Prince George's County. This effort included restoration of over 40 acres of freshwater tidal wetlands in lower Kingman Marsh (DC DOH 2003, DC DCRA 1997). The wetlands were restored by filling and grading the existing mud flats and planting over 700,000 wetland plants comprising seven native species. These species included arrow arum (*Peltandra virginica*), soft-stemmed bulrush (*Scirpus validus*), soft rush (*Juncus effuses*), pickerelweed (*Pontedeira cordata*), duck potato (*Sagittaria latifolia*), common three-square (*Scirpus americanum*), and yellow pond lily (*Nuphar advena*). Some decline in vegetation has been reported in recent years and is likely due to the presence of resident Canada Geese. The National Park Service has completed a management plan to manage the geese populations and restore the wetlands (NPS 2014); this plan is included in the cumulative impact scenario in this document.

RFK Shoreline

This wetland area is located inside Kingman Marsh along the shoreline of the Anacostia River and adjacent to the RFK Stadium parking lot. It is the most recently restored wetland in Kingman Marsh and has benefited from lessons learned through past wetland creation projects along the Anacostia River. Past experience with lack of wetland success caused by herbivory by resident Canada geese and erosion of the marsh surface has influenced the design of this wetland. This wetland was restored by the placement of dredged material behind a dike constructed from coir logs. The coir logs hold the sediment in place so that the elevation of the marsh surface remains stable and at a level capable of maintaining plant growth. The area was planted with native species including yellow pond lily, cattails, pickerelweed, hibiscus (*Hibisucs* spp.), and *Scirpus* species. Common reed (*Phragmites australis*) is present but is limited to a relatively small area immediately adjacent to the landward edge of the marsh. Additionally, this marsh is protected by a goose exclusion perimeter fence as well as internal and overhead barriers to keep resident Canada geese from entering the wetland and grazing on the plant material (NPS 2014).

Anacostia River Fringe Wetlands

The US Army Corps of Engineers installed approximately 17 acres of fringe wetlands along the Anacostia River in 2002 and 2003. The fringe wetlands were created in two separate areas: the northern portion on the river's east bank along the River Terrace shoreline between Benning Road and East Capital Street, and the southern portion in the Anacostia River along the southeastern shoreline of Kingman Island. This wetland area was created by temporarily bulkheading a portion of the main stem of the Anacostia River with sheet piling to contain the dredged material until it adequately settled and vegetation became fully established to hold the material in place. The tide inundates this wetland regularly and a combined sewer outfall is located within the wetland. The wetland was planted with native species, including cattail, willow species, soft rush, and jewelweed; the invasive species common reed has been observed at this wetland. Restoration of wetlands in these areas will help to reduce the sediment in the water, provide habitat and food for fish, and increase plant diversity (DC DOH 2003).

Non-Tidal Wetlands

Non-tidal wetlands are those not influenced by lunar or wind tides. Non-tidal wetlands in the park support diverse habitats for fish, shellfish, wildlife, and plant species. These wetlands may also function as floodwater storage, groundwater discharge, and sediment retention. Some non-tidal wetlands provide recreational values to the park and all contribute to the visual quality and aesthetics of the park (NPS 2014). Of the approximately 104.5 total acres of wetlands within the park boundaries, there are approximately 48.8 acres of non-tidal wetlands. Areas of non-tidal wetlands are described below.

Gateway Wetlands

The Gateway wetlands are located across from Kenilworth Marsh on the west bank of the Anacostia River and include approximately 32.6 acres of wetlands. The *DC Wetland Conservation Plan* (DC DCRA 1997) classified these wetland areas as high value wetlands for wetland restoration and creation. The wetland complex is composed of three wetland areas: north, central, and south. The north Gateway wetland is the northernmost wetland within the park and borders the Maryland–District boundary. It is a backwater area within the floodplain that receives floodflow from the Anacostia River and drainage from the stormwater management facility located west of the wetland. Vernal pools were observed during the 2008 field investigation within the scrub shrub and forested habitat between the river and the wetland (NPS 2014). The fringe of the pond includes red maple, river birch, black willow, and sweetgum (*Liquidambar styraciflua*). The central Gateway wetland is a narrow wooded stream system on the north side of the Amtrak tracks, south of New York Avenue NE. The stream flows east to the Anacostia River and possibly receives flow during extreme flood events. There is a large area of ponding due to beaver activity. Tree species present include red maple and various oak species (*Quercus* spp.). Herbaceous species present include cattails, reed canary grass, cinnamon fern (*Osmunda cinnamomea*) and royal fern (*Osmunda regalis*). The south Gateway wetland is located within the floodplain of the Anacostia River. This system receives flow from two unnamed tributaries to the Anacostia River and is comprised of open water, emergent, scrub-shrub, and forested wetlands. A manmade berm is present along the Anacostia River in the area of this wetland. The berm is breached at the outlet of one of the streams; however, there is little tidal influence on the system. Common reed is present within the emergent wetland areas; other plants present include reed canary grass, purple loosestrife, boxelder (*Acer negundo*), and green ash (NPS 2014).

River Trail Wetland

The River Trail wetland is located north and east of Kenilworth Marsh. The forested and open water wetland is located between berms and the River Trail embankment. It flows into the Kenilworth Aquatic Gardens through a metal pipe beneath the River Trail. The wetland buffer species present at the site include red maple, flowering dogwood (*Cornus florida*), cattails, spicebush, and southern arrowwood (*Viburnum dentatum*).

Poplar Point Wetland

The wetland at Poplar Point is an emergent wetland located south of the existing park headquarters building and along the southern shoreline of the Anacostia River. The Poplar Point Wetland is comprised of two separate wetland areas located immediately adjacent to each other. This wetland has a levee on the east and is located at a former facility that was operated by the Architect of the Capitol. A Metro subway tunnel

passes beneath this area, which was disturbed by the construction of the tunnel. The wetland is isolated from the Anacostia River and its hydrology appears to be sustained by groundwater and precipitation.

Portions of Poplar Point have become a significant wildlife habitat area since abandoned in the early 1990s (NPS 2002e). With the cessation of pumping and draining, approximately 11.8 acres of wetlands have become reestablished. Formerly mowed lands have evolved into shrub-scrub communities, and wooded areas have matured, providing a mix of habitats attractive to a wide range of wildlife. Today the area also supplies critical connecting habitat between the Potomac River corridor and the natural features of the upper Anacostia River corridor (NPS 2002e).

METHODOLOGY AND ASSUMPTIONS

Potential impacts on wetlands are assessed based on the current description of wetlands presented in the affected environment section above. The section above is based upon wetlands delineations performed by Certified Wetland Scientists to identify water resources subject to jurisdiction under Section 404 of the Clean Water Act. Existing conditions of wetlands were compared with the alternatives described in chapter 2 to determine how wetland areas would be affected.

The resource-specific context for the evaluation of impacts on wetlands includes the following:

- Wetlands within the park include the largest remaining wetlands within the watershed of the Anacostia River and approximately 50 percent of the total wetland acreage remaining in the District of Columbia (DC DCRA 1997). Extensive wetland areas occur in Kenilworth Marsh, in Kingman Marsh, and in the Gateway wetland area. A variety of other smaller wetlands occur throughout the park.
- Wetlands have unique functions and values (groundwater recharge, stormwater storage, discharge, unique habitats, etc.) that are intrinsic to wetlands and cannot be easily duplicated or replaced.
- NPS *Management Policies 2006* call for park managers to preserve and restore the natural abundances, diversities, dynamics, distributions, habitats, and behaviors of native plant populations and the communities and ecosystems in which they occur. They should also strive to minimize human impacts on native plants, populations, communities, and ecosystems, and the processes that sustain them (NPS 2006).
- The National Park Service manages wetlands in compliance with NPS mandates and the requirements of Executive Order 11990, "Protection of Wetlands," the Clean Water Act, the Rivers and Harbors Appropriation Act, and the procedures described in Director's Order #77-1: *Wetland Protection* (NPS 2002b). As such, the National Park Service has adopted a goal of "no net loss" of wetlands and also has set goals for a long-term net gain of wetlands service wide (NPS 2008b).
- The park's foundation document (NPS 2016a) identifies natural communities as among Anacostia Park's fundamental resources and values, including wetlands. The foundation document highlights their importance through their capacity to restore and protect the quality and resiliency of the river ecosystem, provide an important ecological buffer between heavily developed urban spaces and the river, and provide habitat, through enhanced shorelines, for a diverse population of plant and animal species not commonly found in an urban environment.

IMPACTS OF ALTERNATIVE 1: NO ACTION

Impact Analysis

In the no-action alternative there could be temporary disturbance of wetlands in conjunction with routine park improvements and maintenance. The no-action alternative would generally not include new construction requiring placement of fill in wetlands. Some types of routine maintenance for existing water dependent uses—such as boardwalks and trails—and other existing park facilities could result in impacts on wetlands. This maintenance could include repair or replacement of damaged or weathered facilities, trimming vegetation around trails and boardwalks, trash removal (including skimming in the river and other wetlands), and preservation of the lily and lotus ponds at Kenilworth Aquatic Gardens. Other maintenance activities that require shallow ground-disturbance, such as road repairs, utility repairs, turf management, wetland restoration, and landscape management, could result in impacts if undertaken adjacent to wetland areas. During these types of activities, prior to stabilization of exposed soils, storm water runoff from disturbed sites would have the potential to cause erosion and sedimentation and to convey sediments to tributary streams, storm water drains, and the river. To mitigate potential impacts to wetland systems due to construction run-off, all related activities would be completed in accordance with a National Pollutant Discharge Elimination System (NPDES) Permit. This permit would require the National Park Service to design and implement a Storm Water Pollution Prevention Plan for each development site. The Storm Water Pollution Prevention Plan would identify the sources of pollution to storm water discharges associated with the proposed construction and the best management practices to reduce pollutants in storm water reaching wetlands and streams.

If any routine maintenance actions require placement of fill in wetlands, then they would be subject to environmental compliance and permitting, as applicable. During final design of potential projects, or prior to maintenance actions, site-specific wetland surveys would be completed to confirm wetland boundaries. Facility design and maintenance actions would be adjusted as needed to avoid or minimize where possible placement of fill in wetlands, particularly for non-water dependent uses. Compensation for loss of wetlands and wetland function would be required, as appropriate, on a project specific basis. Mitigation actions would be designed to achieve no net loss of wetland function. Collectively these types of actions could result in a long-term adverse impact to wetlands.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting wetlands under alternative 1 would include the construction of the proposed Anacostia Riverwalk Trail, rehabilitation of Langston Golf Course, the management plan for wetlands and resident Canada geese, the Anacostia Watershed Restoration Plan, the Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, and remediation of contaminated sites. Collectively, these actions have resulted or may result in both adverse and beneficial impacts on wetlands.

Adverse impacts on wetlands have or may occur due to construction and development activities. For example, DDOT has constructed and is constructing paved bicycle and pedestrian trails along the waterfront for the Anacostia Riverwalk Trail, which has resulted and may result in adverse impacts on wetlands through disturbance of a small amount of wetlands for trail construction. However, the trail overall was, and is, designed to avoid wetlands wherever possible so the impacts would be mitigated. The

land transfer and subsequent development of Poplar Point would result in adverse impacts on wetlands because all existing wetlands on site would be removed for development. However, new wetlands would be created at a ratio of 3:1 along the river shoreline, which would compensate for the adverse impacts. Ongoing implementation of the DC Water Clean Rivers Project has resulted and would result in adverse impacts due to construction activities in wetlands and to the placement of riprap at one of the outflow facilities within the Anacostia River and intertidal wetlands. However, these impacts would be mitigated through compensation during future coordination with relevant agencies.

Beneficial impacts on wetlands have or may occur due to remediation, stormwater management, and erosion control activities. The rehabilitation of Langston Golf Course would result in beneficial impacts on wetlands because the improved drainage and erosion control measures would reduce the potential for stormwater runoff to result in soil erosion and conveyance of sediments to tributary streams, storm water drains, and the river. Implementation of the Wetland and Resident Canada Geese Management Plan will result in beneficial impacts on wetlands because the proposed management actions would improve the functionality of wetlands within the park. Similarly, the actions related to the Anacostia Watershed Plan would result in beneficial impacts through restoration of wetland function and values throughout the watershed. The remediation of contaminated sites could result in a beneficial impact on wetlands by removing contaminants, improving the water quality of wetlands adjacent to these contaminated sites, and providing opportunities to expand existing, or establish new, wetlands.

When combining the impacts of these actions with the impacts of alternative 1, the cumulative impact would be both beneficial and adverse. Alternative 1 would contribute an imperceptible increment to the cumulative impact on wetlands.

Conclusion

The no-action alternative could result in long-term adverse impacts on wetlands due to some types of routine maintenance of existing park facilities. Though the no-action alternative would generally not include new construction requiring placement of fill in wetlands, some routine maintenance could require it. These actions would be subject to environmental compliance and permitting, as appropriate. Use of best management practices as part of an approved Storm Water Pollution Prevention Plan would mitigate the adverse impacts on wetlands. The National Park Service would continue to take management actions to reduce impacts to wetlands by controlling visitor access, as appropriate. Under alternative 1, wetlands within the park would continue to be the largest remaining wetlands within the Anacostia River watershed and would continue to constitute approximately 50 percent of the total wetland acreage in the District of Columbia. The actions under alternative 1 would not result in changes to the intrinsic functions and values of the wetlands within the park, and the wetlands would continue to contribute to the park's diverse natural communities. Park managers would continue current management practices to preserve and restore the natural wetlands as required by NPS Management Policies 2006. Any actions requiring fill or loss of wetlands could be subject to compensation pursuant to Director's Order #77-1. Therefore, the impacts under alternative 1 would not approach the level of significant.

IMPACTS OF ALTERNATIVE 2

Impact Analysis

Alternative 2 envisions the highest degree of expansion and enhancement of facilities (based on acreage of related zones), focusing on recreational and educational opportunities, with 30 percent of the park falling within the natural resource recreation zone designation. See figure 8 for a map of the management zones under alternative 2 in relation to the wetlands within the park. Activities which have the highest potential to result in impacts on wetlands would be those in-water and waterfront construction activities, including restoration. Upland construction activities have the potential to impact wetlands, but those impacts can be mitigated through compliance with sedimentation and erosion control regulations Proposed water-related activities would generally include expansion, improvements, or new construction of the following:

- marinas
- docks
- piers
- boathouses
- boat tie-ups
- boat launches (in support of water trails)
- waterfront promenades and plazas
- bridges
- park roads near wetlands
- outdoor water sports facilities
- boardwalks to interpret wetlands
- riparian edge treatments

The National Park Service would continue to manage the park as it has in recent years in accordance with the statements for management for the park (NPS 1988a and 1988b) and NPS *Management Policies 2006* (NPS 2006). As such, the potential for impacts to wetlands under alternative 2 are similar to those described for the current management activities at the park that would continue under the no-action alternative. However, under alternative 2, those activities would likely be more extensive throughout the park because new facilities may be constructed and existing facilities may be expanded or enhanced in future development projects tiered to this management plan. Water-related activities may include installation of new waterfront access points such as piers, docks, boat ramps and canoe/kayak launches. Specific projects have not yet been identified; however, sample projects and associated impacts and mitigation measures are described below.

Canoe and kayak launches are generally constructed as a fixed or floating dock structure that extend into the waterway, allowing for launch and recovery of the vessel. The dock would be supported or held in place with pilings that are driven into the river bed. The fixed dock (elevated above the water surface) is permanent and would require more pilings for support, while a floating dock can be temporary and taken in and out of the river depending upon the season and projected use. The floating dock could be held in place with fewer pilings or anchored into placed using anchor blocks and connecting chains/cables. Either of these dock structures would be approximately 4 to 6 feet wide by approximately 30 feet long, depending upon the water depths within the river.

Another common configuration for a canoe/kayak launch is to grade a section of the river bank to a gentle slope allowing for walk-in/walk-out access. The sloped surface could be hardened with concrete or gravel, or could be more natural with crushed shell or sand. The launch area size can be adjusted to fit the

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Anacostia Park

2016 MANAGEMENT ZONES

- Natural Resource Recreation Zone
- Golf Course Zone
- Organized Sport and Recreation Zone
- Community Activities and Special Events Zone
- Park Administration / Operations Zone
- Special Permit Zone

- DDOT Transportation Projects
- Metro
- Potential Memorial Site
- Enhanced Park Connectivity

- Water Taxi - Existing
- Water Access (River Trail) - Existing
- Water Access (River Trail) - Proposed

- Water Trail
- Anacostia Riverwalk Trail - Existing
- Anacostia Riverwalk Trail - Proposed
- Other Trail - Existing

- Pedestrian Entrances - Existing
- Vehicular Entrances - Existing

1. Good Hope Road Entrance
2. Nicholson Street Entrance
3. Deane Avenue Entrance
4. Kenilworth Park South Entrance
5. Kenilworth Park North Entrance
6. Kenilworth Acquatic Gardens Entrance
7. Langston Golf Course Entrance

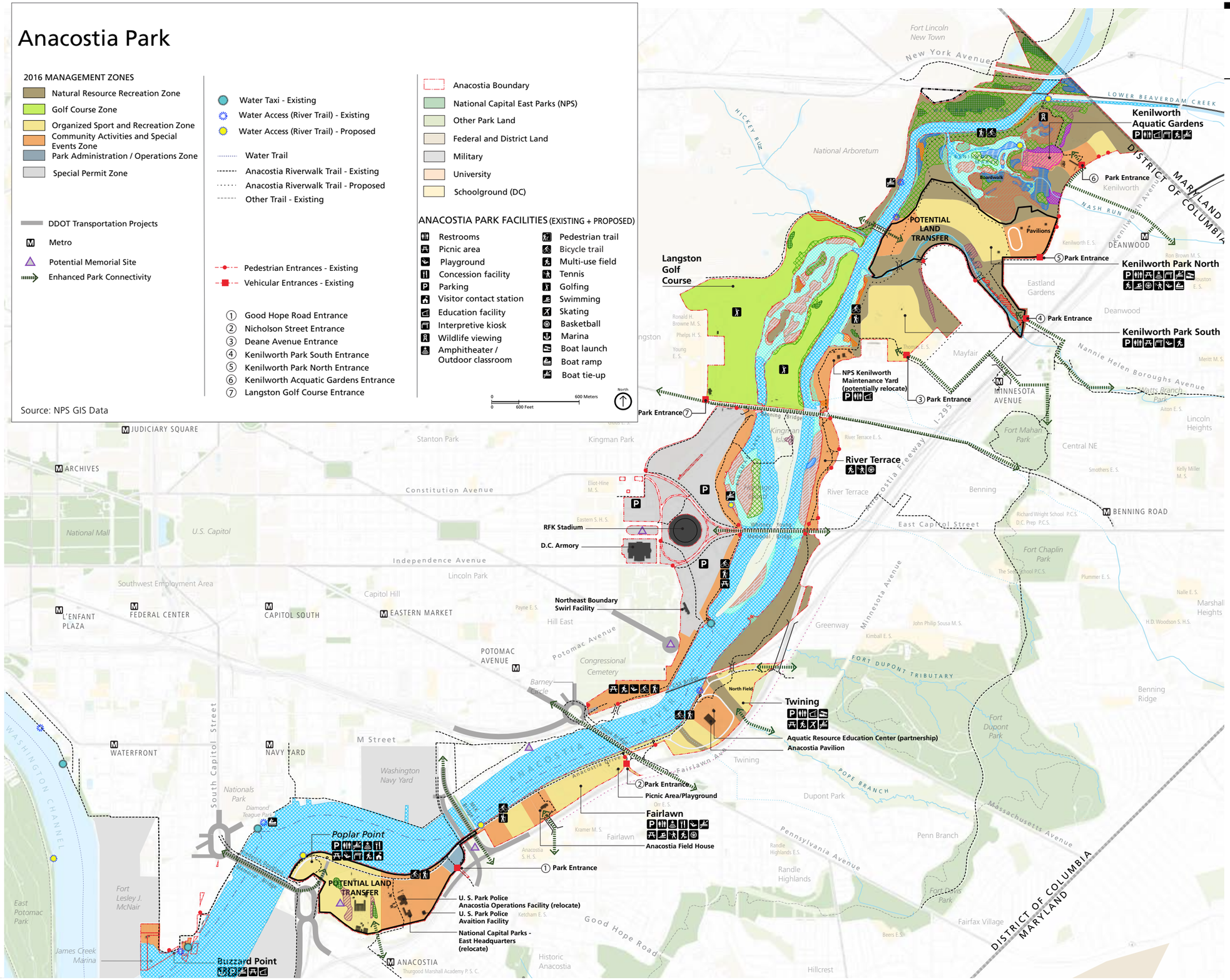
- Anacostia Boundary
- National Capital East Parks (NPS)
- Other Park Land
- Federal and District Land
- Military
- University
- Schoolground (DC)

ANACOSTIA PARK FACILITIES (EXISTING + PROPOSED)

- Restrooms
- Picnic area
- Playground
- Concession facility
- Parking
- Visitor contact station
- Education facility
- Interpretive kiosk
- Wildlife viewing
- Amphitheater / Outdoor classroom
- Pedestrian trail
- Bicycle trail
- Multi-use field
- Tennis
- Golfing
- Swimming
- Skating
- Basketball
- Marina
- Boat launch
- Boat ramp
- Boat tie-up

0 600 Meters
0 600 Feet
North

Source: NPS GIS Data



National Park Service
US Department of the Interior

Anacostia Park
Washington, DC

Wetland Legend

- Aquatic Garden
- Freshwater Tidal Mixed High Marsh
- Freshwater Tidal Swamp
- Maple-Ash Swamp Forest
- Reed-grass Tidal Marsh
- Successional Box-elder Floodplain Forest
- Successional Herbaceous Wetland
- Successional Red Maple Small River Floodplain Forest
- Successional Woody Wetland
- Tidal Wetland Restoration and Experimental Area
- Unconsolidated Shore
- Open Water

Management Plan Environmental Assessment

FIGURE 8
Wetlands: Alternative 2

level of use, but typically these launches would be approximately 15 feet wide by 40 feet long, depending upon the water depths in the river and the overall height of the river bank.

Impacts to the riverbed and intertidal areas along the Anacostia River from the pile-supported fixed dock or floating docks would be minimal since these structures have a small footprint. Pile driving activities would have temporary noise impacts within the aquatic environment, but could be mitigated through time-of-year restrictions or the use of bubble curtains around the pile driving area to protect local and anadromous fish species. The narrow, elevated dock limits shading impacts to vegetated communities (intertidal and submerged aquatic vegetation) along the river, but the floating dock could result in minor shading impacts to these communities.

Canoe/kayak launch ramps could potentially have greater impacts to natural habitats because grading and placement of material along the riverbank and riverbed is typical. Vegetation may be removed to create the gentle sloping bank. In addition, a ramp constructed from concrete, gravel, or shell would result in materials being placed upon existing habitats such as vegetated or non-vegetated, intertidal wetlands, and/or subtidal (riverbed) wetlands.

The siting and design of these and other facilities can minimize wetland impacts, and this would be addressed and assessed during permit acquisition under Section 404 of the Clean Water Act and Section 10 of the River and Harbors Act, as applicable. During final design, or prior to maintenance actions for existing facilities, site-specific wetland surveys would be completed to confirm wetland boundaries. Facility design and maintenance actions would be adjusted as needed to avoid or minimize the placement of fill in wetlands, where possible. Compensation for loss of wetlands and wetland function would be required, as appropriate, on a project-specific basis. Mitigation actions would be designed to achieve no net loss of wetland function. Collectively these types of actions could result in a long-term adverse impact on wetlands.

Additionally, actions under alternative 2 would have the potential to result in long-term beneficial impacts on wetlands in the park due to the possible wetland restoration efforts the National Park Service could undertake in the natural resource recreation zone. Potential wetland restoration projects would protect and preserve the existing wetlands, with the potential to increase the intrinsic function and value of the total park wetlands. Specific wetland and ecosystem rehabilitation projects would be determined at a later time and their impacts assessed in separate, tiered compliance documents.

During implementation of potential restoration projects, wetlands in the project vicinity could be exposed to potential adverse impacts associated with erosion, sedimentation, and alteration of hydrologic conditions. Where appropriate, best management practices would be used to avoid impacts to adjacent wetlands. Best management practices would be specifically identified in a Storm Water Pollution Prevention Plan as part of all NPDES permits required prior to future construction in the park. These best management practices would generally include the following:

- measures to minimize effects to site hydrology
- measures to avoid degrading water quality by spills of fuels, lubricants, and other materials used at construction sites
- erosion and sedimentation controls

- measures to protect normal movement, migration, reproduction, and health of aquatic and terrestrial wildlife
- prohibition of heavy equipment use in wetlands (except where needed for wetland restoration)
- prohibition of stockpiling excavated material in wetlands
- revegetation of disturbed areas as soon as possible, preferably using stockpiled topsoil obtained on-site
- revegetation of disturbed areas with native plant material

Any impacts of future restoration actions would be addressed and assessed in separate, tiered environmental compliance documents.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting wetlands under alternative 2 would include the construction of the proposed Anacostia Riverwalk Trail, rehabilitation of Langston Golf Course, the management plan for wetlands and resident Canada geese, the Anacostia Watershed Restoration Plan, the Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, and remediation of contaminated sites. Collectively, these actions have resulted or may result in both adverse and beneficial impacts on wetlands. The impacts of these actions are discussed under alternative 1. When combining the impacts of these actions with the impacts of alternative 2, the cumulative impact would be both beneficial and adverse. Alternative 2 would contribute an imperceptible increment to the cumulative impact on wetlands.

Conclusion

Alternative 2 would result in adverse impacts on wetlands due to potential future projects tiered to this alternative involving waterfront construction, particularly actions that could require pile driving associated with dock, pier, and boardwalk construction; pedestrian and access bridge construction; and/or construction and maintenance of boat launches and related waterfront improvements. Avoidance and minimization of wetland impacts would be addressed during the design and permitting process of future projects to limit necessary impacts. Use of best management practices as part of an approved Storm Water Pollution Prevention Plan would mitigate the adverse impacts on wetlands. The National Park Service would continue to take management actions to reduce impacts to wetlands by controlling visitor access, as appropriate. Beneficial impacts could also result under alternative 2 due to potential ecosystem rehabilitation activities in the natural resource recreation zones. Under alternative 2, wetlands within the park would continue to be the largest remaining wetlands within the Anacostia River watershed and would continue to constitute approximately 50 percent of the total wetland acreage in the District of Columbia. The actions under alternative 2 would not result in a reduction of the intrinsic functions and values of the wetlands within the park as a whole, and the wetlands would continue to contribute to the park's diverse natural communities. Park managers would continue current management practices to preserve and restore the natural wetlands as required by NPS *Management Policies 2006*. Any actions requiring fill or loss of wetlands could be subject to compensation pursuant to Director's Order #77-1. Therefore, the impacts under alternative 2 would not approach the level of significant.

IMPACTS OF ALTERNATIVE 3: NPS PREFERRED

Impact Analysis

Alternative 3 envisions a lesser degree of expansion and enhancement of facilities than alternative 2 (based on acreage). Alterative 3 would also focus on recreational and educational opportunities, but with 45 percent of the park falling within the natural resource recreation zone designation. Those activities that have the highest potential for affecting wetlands would be the same as under alternative 2, and the related impacts and mitigation measures would also be the same. The potential for adverse impacts to wetlands under alternative 3 are similar to those described under alternative 2 because the general waterfront facility improvements are similar, but slightly reduced in scope, with more area dedicated to natural resources and naturalization of currently improved areas. For the same reasons, the beneficial impacts under alternative 3 would be increased in scope over alternative 2. The National Park Service would continue to manage the park as it has in recent years in accordance with the statements for management for the park (NPS 1988a and 1988b) and NPS *Management Policies 2006* (NPS 2006). See figure 9 for a map of the management zones under alternative 3 in relation to wetlands within the park.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting wetlands under alternative 3 would include the construction of the proposed Anacostia Riverwalk Trail, rehabilitation of Langston Golf Course, the management plan for wetlands and resident Canada geese, the Anacostia Watershed Restoration Plan, the Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, and remediation of contaminated sites. Collectively, these actions have resulted or may result in both adverse and beneficial impacts on wetlands. These impacts are discussed under alternative 1. When combining the impacts of these actions with the impacts of alternative 3, the cumulative impact would be both adverse and beneficial. Alternative 3 would contribute an imperceptible increment to the cumulative impact on wetlands.

Conclusion

Alternative 3 could result in adverse impacts on wetlands due to potential future projects tiered to this alternative involving waterfront construction that could require as pile driving associated with dock, pier, and boardwalk construction; pedestrian and access bridge construction; and/or construction and maintenance of boat launches and related waterfront improvements. Avoidance and minimization of wetland impacts would be addressed during the design and permitting process of future projects to limit necessary impacts. Beneficial impacts could result from potential ecosystem rehabilitation projects in areas designated as natural resource recreation zone and from potential remediation of contaminated sites that removed contaminants, improved the water quality of wetlands adjacent to these contaminated sites, and provided opportunities to expand existing, or establish new, wetlands. Actions under alternative 3 would likely result in less adverse and more beneficial impacts than under alternative 2 due to the increase in acreage of natural resource recreation zone. Use of best management practices as part of an approved Storm Water Pollution Prevention Plan would mitigate the adverse impacts on wetlands. The National Park Service would continue to take management actions to reduce impacts to wetlands by controlling visitor access, as appropriate. Under alternative 3, wetlands within the park would continue to be the largest remaining wetlands within the Anacostia River watershed and would continue to constitute

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Anacostia Park

2016 MANAGEMENT ZONES

- Natural Resource Recreation Zone
- Golf Course Zone
- Organized Sport and Recreation Zone
- Community Activities and Special Events Zone
- Park Administration / Operations Zone
- Special Permit Zone

- DDOT Transportation Projects
- Metro
- Potential Memorial Site
- Enhanced Park Connectivity

- Water Taxi - Existing
- Water Access (River Trail) - Existing
- Water Access (River Trail) - Proposed

- Water Trail
- Anacostia Riverwalk Trail - Existing
- Anacostia Riverwalk Trail - Proposed
- Other Trail - Existing

- Pedestrian Entrances - Existing
- Vehicular Entrances - Existing

1. Good Hope Road Entrance
2. Nicholson Street Entrance
3. Deane Avenue Entrance
4. Kenilworth Park South Entrance
5. Kenilworth Park North Entrance
6. Kenilworth Acquatic Gardens Entrance
7. Langston Golf Course Entrance

- Anacostia Boundary
- National Capital East Parks (NPS)
- Other Park Land
- Federal and District Land
- Military
- University
- Schoolground (DC)

ANACOSTIA PARK FACILITIES (EXISTING + PROPOSED)

- Restrooms
- Picnic area
- Playground
- Concession facility
- Parking
- Visitor contact station
- Education facility
- Interpretive kiosk
- Wildlife viewing
- Amphitheater / Outdoor classroom
- Pedestrian trail
- Bicycle trail
- Multi-use field
- Tennis
- Golfing
- Swimming
- Skating
- Basketball
- Marina
- Boat launch
- Boat ramp
- Boat tie-up

0 600 Meters
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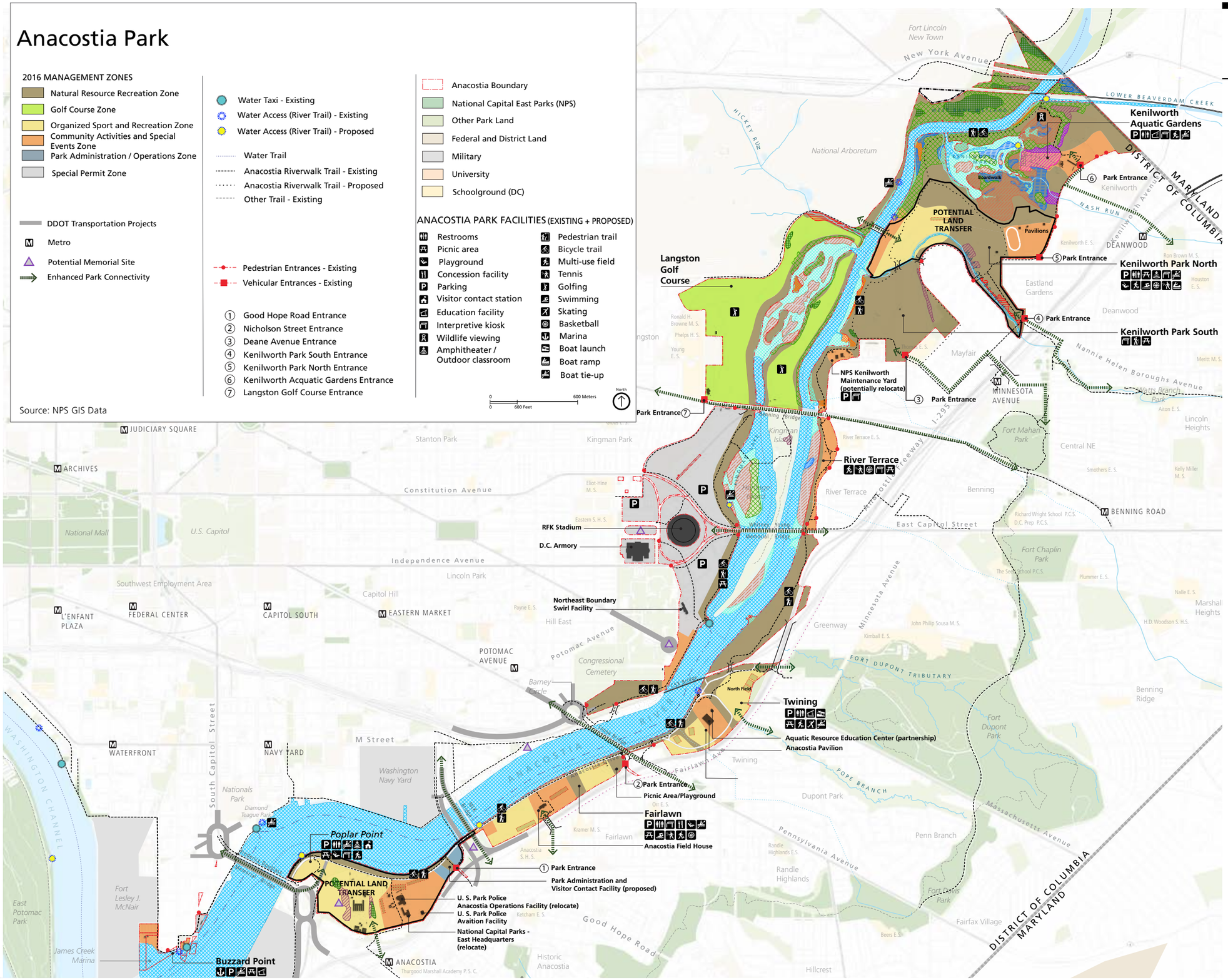
North

Source: NPS GIS Data



Wetland Legend

- Aquatic Garden
- Freshwater Tidal Mixed High Marsh
- Freshwater Tidal Swamp
- Maple-Ash Swamp Forest
- Reed-grass Tidal Marsh
- Successional Box-elder Floodplain Forest
- Successional Herbaceous Wetland
- Successional Red Maple Small River Floodplain Forest
- Successional Woody Wetland
- Tidal Wetland Restoration and Experimental Area
- Unconsolidated Shore
- Open Water

National Park Service
US Department of the Interior

Anacostia Park
Washington, DC

Management Plan Environmental Assessment

FIGURE 9
Wetlands: Alternative 3

approximately 50 percent of the total wetland acreage in the District of Columbia. The actions under alternative 3 would not noticeably change the intrinsic functions and values of the wetlands within the park, and the wetlands would continue to contribute to the park's diverse natural communities. Park managers would continue current management practices to preserve and restore the natural wetlands as required by NPS *Management Policies 2006*. Any actions requiring fill or loss of wetlands could be subject to compensation pursuant to Director's Order #77-1. Therefore, the impacts under alternative 3 would not approach the level of significant.

IMPACTS OF ALTERNATIVE 4

Impact Analysis

Alternative 4 envisions the least degree of expansion and enhancement of facilities of all the action alternatives (based on acreage of zones). With an increased focus on water access and nature-based recreational and educational opportunities, alternative 4 would include 50 percent of the park within the natural resource recreation zone designation. Those activities that have the highest potential for affecting wetlands would be the same as under alternative 3, as would the related impacts and mitigation measures. The potential for adverse impacts to wetlands under alternative 4 are similar to those described for alternative 3 because the waterfront facility improvements are similar, but slightly reduced in scope, with more area dedicated to natural resources and naturalization of currently improved areas. For the same reasons, the beneficial impacts under alternative 4 would be increased in scope over alternative 3. The National Park Service would continue to manage the park as it has in recent years in accordance with the statements for management for the park (NPS 1988a and 1988b) and NPS *Management Policies 2006* (NPS 2006). See figure 10 for a map of the management zones under alternative 4 in relation to wetlands within the park.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting wetlands under alternative 4 would include the construction of the proposed Anacostia Riverwalk Trail, rehabilitation of Langston Golf Course, the management plan for wetlands and resident Canada geese, the Anacostia Watershed Restoration Plan, the Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, and remediation of contaminated sites. These actions have resulted or may result in both beneficial and adverse impacts on wetlands. These impacts are discussed under alternative 1. When combining the impacts of these actions with the impacts of alternative 4, the cumulative impact would be both beneficial and adverse. Alternative 4 would contribute an imperceptible increment to the cumulative impact on wetlands.

Conclusion

Alternative 4 could result in adverse impacts on wetlands due to potential future projects tiered to this alternative involving waterfront construction that could require pile driving associated with dock, pier, and boardwalk construction; pedestrian and access bridge construction; and/or construction and maintenance of boat launches and related waterfront improvements. Avoidance and minimization of wetland impacts would be addressed during the design and permitting process to limit necessary impacts.

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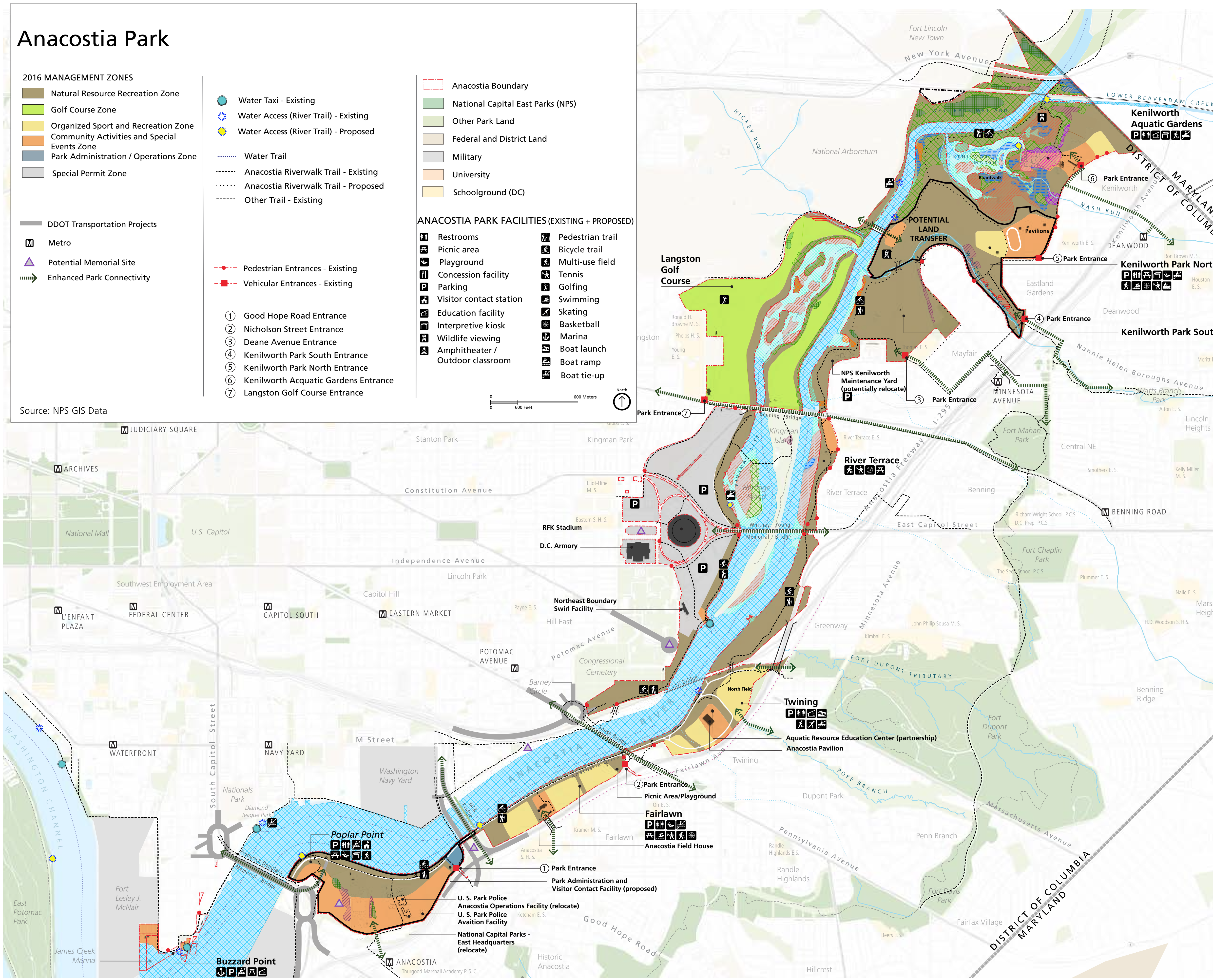


Wetland Legend

- Aquatic Garden
- Freshwater Tidal Mixed High Marsh
- Freshwater Tidal Swamp
- Maple-Ash Swamp Forest
- Reed-grass Tidal Marsh
- Successional Box-elder Floodplain Forest
- Successional Herbaceous Wetland
- Successional Red Maple Small River Floodplain Forest
- Successional Woody Wetland
- Tidal Wetland Restoration and Experimental Area
- Unconsolidated Shore
- Open Water

Management Plan Environmental Assessment

FIGURE 10
Wetlands: Alternative 4

Beneficial impacts could result from ecosystem rehabilitation projects in the natural resource recreation zones. Actions under alternative 4 would likely result in less adverse and more beneficial impacts than under alternatives 2 and 3 due to the increase in natural resource recreation zone. Use of best management practices as part of an approved Storm Water Pollution Prevention Plan would mitigate the adverse impacts on wetlands. The National Park Service would continue to take management actions to reduce impacts to wetlands by controlling visitor access, as appropriate. Under alternative 4, wetlands within the park would continue to be the largest remaining wetlands within the Anacostia River watershed and would continue to constitute approximately 50 percent of the total wetland acreage in the District of Columbia.

The actions under alternative 4 would not noticeably change the intrinsic functions and values of the wetlands within the park as a whole, and the wetlands would continue to contribute to the park's diverse natural communities. Park managers would continue current management practices to preserve and restore the natural wetlands as required by NPS *Management Policies 2006*. Any actions requiring fill or loss of wetlands could be subject to compensation pursuant to Director's Order #77-1. Therefore, the impacts under alternative 4 would not approach the level of significant.

UPLAND VEGETATION

The biotic communities within the park—woodlands, meadows, and fields—offer some of the largest remaining natural areas and habitat in the District of Columbia. The protection and preservation of forests and natural scenery within Washington, DC was identified as a fundamental purpose of the legislation that established Anacostia Park as part of the park, parkway, and playground system of the national capital (Public Law 68-202, 43 Stat. 463). Scoping comments recognized the importance of these areas to city residents, particularly those living in neighborhoods adjacent to the park, as places where they can enjoy nature and remove themselves from urban life. Natural resource deterioration is widely recognized by the public, government agencies, and NPS staff as a primary issue at the park. Ecosystem rehabilitation, development, and redevelopment projects that may be proposed as a result of this management plan have the potential to affect the local upland vegetation. Therefore, the impact topic of upland vegetation is retained for further analysis. Existing conditions of and impacts on wetland vegetation are discussed under the impact topic of "wetlands" above.

AFFECTED ENVIRONMENT

Much of the native vegetation that historically existed within the project area has been lost through centuries of development along the river. While the remaining vegetated areas are largely wooded, they have been cleared several times since the 17th century. Clearing has allowed for introduction and successful establishment of non-native urban tolerant invasive plant species. As a result, the species composition and diversity of today's woodlands and other vegetated areas along the shores of the Anacostia River is dramatically different from its native condition. While the vegetation composition and diversity has changed through the centuries, the vegetation communities in the park continue to offer some of the most productive habitat remaining in the District of Columbia. The following is a summary

of the primary upland vegetation communities and their resulting habitats. Figure 11 provides an overview of the upland vegetation within the park.

Many areas of the park consist of successional upland vegetation, which includes areas of successional mixed deciduous forest, successional vine-shrubland, and successional meadow/grassland (VA DCR 2010 and 2011). The mixed deciduous forest is located throughout the park, particularly along the edges of roadways and more developed areas, but the majority of this type of vegetation is found in the Woodland Preserve area between the CSX Railroad bridge and East Capitol Street, and Kingman Island south of Benning Road. Dominant plant species that have been observed within the park in this habitat include black locust (*Robinia pseudo-acacia*), willow oak (*Quercus phellos*), box elder (*Acer negundo*), northern catalpa (*Catalpa speciosa*), Siberian elm (*Ulmus pumila*), and slippery elm (*Ulmus rubra*). Common non-native invasive species observed in upland forest habitat include white mulberry (*Morus alba*), tree-of-heaven (*Ailanthus altissima*), Amur honeysuckle (*Lonicera maackii*), princess tree (*Paulownia tomentosa*), and mimosa (*Albizia julibrissin*) (NPS 2004). These forests provide important food and cover for a variety of mammals and birds.

The successional meadow/grasslands occur along the forest edge in many areas of the park, particularly adjacent to the tree lines in Kenilworth Park South and in the west waterfront area (VA DCR 2010). Dominant plant species include toadflax (*Linaria* spp.), jewelweed, dwarf dandelion (*Krigia* spp.), Japanese honeysuckle (*Lonicera japonica*), winged sumac (*Rhus copallinum*), blackberry (*Rubus*), various grasses, and box elder. Areas of meadows along forest edges provide habitat that is highly conducive to wildlife use. Numerous species of birds and animals find shelter and food in the meadows and fields, as well as in the brush and trees at their edges.

Large areas of the park are developed open landscapes planted with grass and ornamental trees and shrubs. These include maintained right-of-ways along roads and bridges, maintained recreational fields, and open waterfront areas that park visitors use for gathering, playing, and picnicking. Common plant species are willow oak (*Quercus phellos*), pin oak (*Quercus palustris*), northern red oak (*Quercus rubra*), tulip poplar (*Liriodendron tulipifera*), American holly (*Ilex opaca*), black cherry (*Prunus serotina*), white clover (*Trifolium repens*), English plantain (*Plantago lanceolata*), and various grass species, including turf grasses. Most areas of turf grass are planted with Kentucky 31 fescue (*Festuca arundinacea*). Areas of the park that were created by filling or placement of thin compacted soils over former landfills generally are poor habitat for wildlife. Ornamental trees and shrubs provide roosts and hunting perches for birds and areas managed as meadows provide habitat for ground nesting birds.

METHODOLOGY AND ASSUMPTIONS

Impacts on the park's upland vegetation resources were assessed in terms of each alternative's potential for short-term impacts due to disturbance of upland vegetation associated with construction of new recreation facilities, rehabilitation of existing recreation facilities, and ecosystem rehabilitation projects; the potential for long-term impacts associated with the permanent loss of upland vegetation to impervious surfaces, turf, and developed recreation facilities; and the potential for long-term enhancement of upland vegetation communities due to ecosystem rehabilitation projects.

Anacostia Park

- Anacostia Boundary
- National Capital East Parks (NPS)
- Other Park Land
- Federal and District Land
- Military
- University
- Schoolground (DC)
- Existing Sports Field
- DDOT Transportation Projects
- 100 Year Flood Plain
- 500 Year Flood Plain
- Metro
- Potential Memorial Site
- Captain John Smith Trail Access - Proposed
- Water Taxi - Existing
- Water Access (River Trail) - Existing
- Existing Multi-Use Fields
- Existing Park Lands
- Water Trail - Proposed
- Anacostia Riverwalk Trail - Existing
- Anacostia Riverwalk Trail - Proposed
- Other Trail - Existing
- Road - Proposed
- Pedestrian Entrances - Existing
- Vehicular Entrances - Existing

① Good Hope Road Entrance
② Nicholson Street Entrance
③ Deane Avenue Entrance
④ Kenilworth Park South Entrance
⑤ Kenilworth Park North Entrance
⑥ Kenilworth Acquatic Gardens Entrance
⑦ Langston Golf Course Entrance

0 600 Meters
0 600 Feet
North

JUNE 2015

National Park Service
US Department of the Interior

Anacostia Park
Washington, DC

Upland Vegetation Legend

- Barren Land
- Developed, Open Space
- Low-Elevation Mixed Oak/Heath Forest
- Successional Meadow/Grassland
- Successional Mixed Deciduous Forest
- Successional Tuliptree Forest (Typic Type)
- Successional Vine-Shrubland

Management Plan Environmental Assessment

FIGURE 11
Upland Vegetation: Existing Conditions

The existing conditions of upland vegetation, as presented in the "Affected Environment" section, were compared to the alternatives presented in chapter 2 to determine how upland vegetation would be affected.

The resource-specific context for the evaluation of impacts on the cultural landscape includes the following:

- NPS *Management Policies 2006* calls for park managers to preserve and restore the natural abundances, diversities, dynamics, distributions, habitats, and behaviors of native plant populations and the communities and ecosystems in which they occur. They should also strive to minimize human impacts on native plants, populations, communities, and ecosystems, and the processes that sustain them (NPS 2006).
- The protection and preservation of forests and natural scenery within Washington, DC was identified as a fundamental purpose of the legislation that established Anacostia Park as part of the park, parkway, and playground system of the national capital (Public Law 68-202, 43 Stat. 463).
- Vegetation in the project area represents some of the largest remaining natural areas and habitat in the District of Columbia.
- The park's foundation document (NPS 2016a) identifies natural communities as among the park's fundamental resources and values, includes vegetation as contributing to the park's diverse landscape. The park's vegetation plays a role in providing habitats for diverse wildlife that is fundamental to the urban park.

IMPACTS OF ALTERNATIVE 1: NO ACTION

Impact Analysis

The continuation of existing management under the no-action alternative would not result in any changes to the existing conditions and would therefore result in no impacts on upland vegetation.

Cumulative Impacts

Although past, present, and reasonably foreseeable actions have resulted or may result in impacts on upland vegetation within the project area, the no-action alternative would have no impacts and therefore would not contribute to the effects of other actions. The impacts of these other actions have or will be discussed in their project-specific compliance documents as required. Consequently, there would be no cumulative impacts on upland vegetation under the no-action alternative.

Conclusion

The no-action alternative would result in no impacts on upland vegetation within the project area because there would be no change in management actions that would require removal of vegetation. Therefore, there would be no impacts on upland vegetation under the no-action alternative that would approach the level of significance.

IMPACTS OF ALTERNATIVE 2

Impact Analysis

In alternative 2, upland vegetation could be disturbed to some extent by partial or complete clearing for implementation of recreational or other facility expansion projects, including rehabilitation of existing park facilities or construction of new park facilities. Specific actions would be proposed during future planning stages and would be subject to separate compliance. Construction of new visitor access points, including roads, trails, and park entrances, could also disturb upland vegetation. Removal of upland vegetation would result in adverse impacts, though areas would be revegetated when possible. Long-term impacts would result where vegetation is permanently removed for new facilities, and areas that would be revegetated would only result in short-term impacts. These adverse impacts would generally be more likely in areas designated as organized sport and recreation zone and community activities and special events zone because those zones would permit the development of new facilities that would have the potential to require vegetation disturbance.

Alternative 2 focuses on the expansion and enhancement of recreational and educational opportunities. Ecosystem rehabilitation activities related to upland vegetation would be limited to selected woodlands. Restoration of some upland woodland sites would result in a long-term beneficial impact on the park's upland vegetation in these areas. These beneficial impacts would generally be more likely in areas designated as natural resource recreation zone because this zone would limit development of new facilities that would have the potential to require vegetation disturbance and would have a focus on natural resource restoration. See figure 12 for a map of the management zones under alternative 2 in relation to the upland vegetation within the park.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting upland vegetation under alternative 1 would include the construction of the proposed Anacostia Riverwalk Trail, the management plan for wetlands and resident Canada geese, the potential 11th Street Bridge Park, the Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, and remediation of contaminated sites. Collectively, these actions have resulted or may result in both beneficial and adverse impacts on upland vegetation.

Adverse impacts have and may occur due to construction and development activities. For example, DDOT is constructing paved bicycle and pedestrian trails along the waterfront for the Anacostia Riverwalk Trail. This has resulted and would result in adverse impacts on upland vegetation during required disturbance and clearing for construction and use of the trail, particularly sections extending through upland forests. The 11th Street Bridge Park has the potential to result in adverse impacts to upland vegetation if any disturbance or removal of vegetation is required for the construction and connection to existing park roads and trails. The land transfer and subsequent redevelopment of Poplar Point would result in adverse impacts because some upland vegetation, primarily grasses, would be lost due to development. However, approximately 70 acres of field and meadow upland vegetation would be maintained. Ongoing implementation of the DC Water Clean Rivers Project has resulted and would continue to result in adverse impacts due to the removal of some trees and vegetation, though these impacts are expected to be minor. Investigation or remediation of contaminated sites have required and may require vegetation removal, including meadow vegetation and forest trees, for soil excavation and

Anacostia Park

2016 MANAGEMENT ZONES

- Natural Resource Recreation Zone
- Golf Course Zone
- Organized Sport and Recreation Zone
- Community Activities and Special Events Zone
- Park Administration / Operations Zone
- Special Permit Zone

- DDOT Transportation Projects
- Metro
- Potential Memorial Site
- Enhanced Park Connectivity

- Water Taxi - Existing
- Water Access (River Trail) - Existing
- Water Access (River Trail) - Proposed

- Water Trail
- Anacostia Riverwalk Trail - Existing
- Anacostia Riverwalk Trail - Proposed
- Other Trail - Existing

- Pedestrian Entrances - Existing
- Vehicular Entrances - Existing

1. Good Hope Road Entrance
2. Nicholson Street Entrance
3. Deane Avenue Entrance
4. Kenilworth Park South Entrance
5. Kenilworth Park North Entrance
6. Kenilworth Acquatic Gardens Entrance
7. Langston Golf Course Entrance

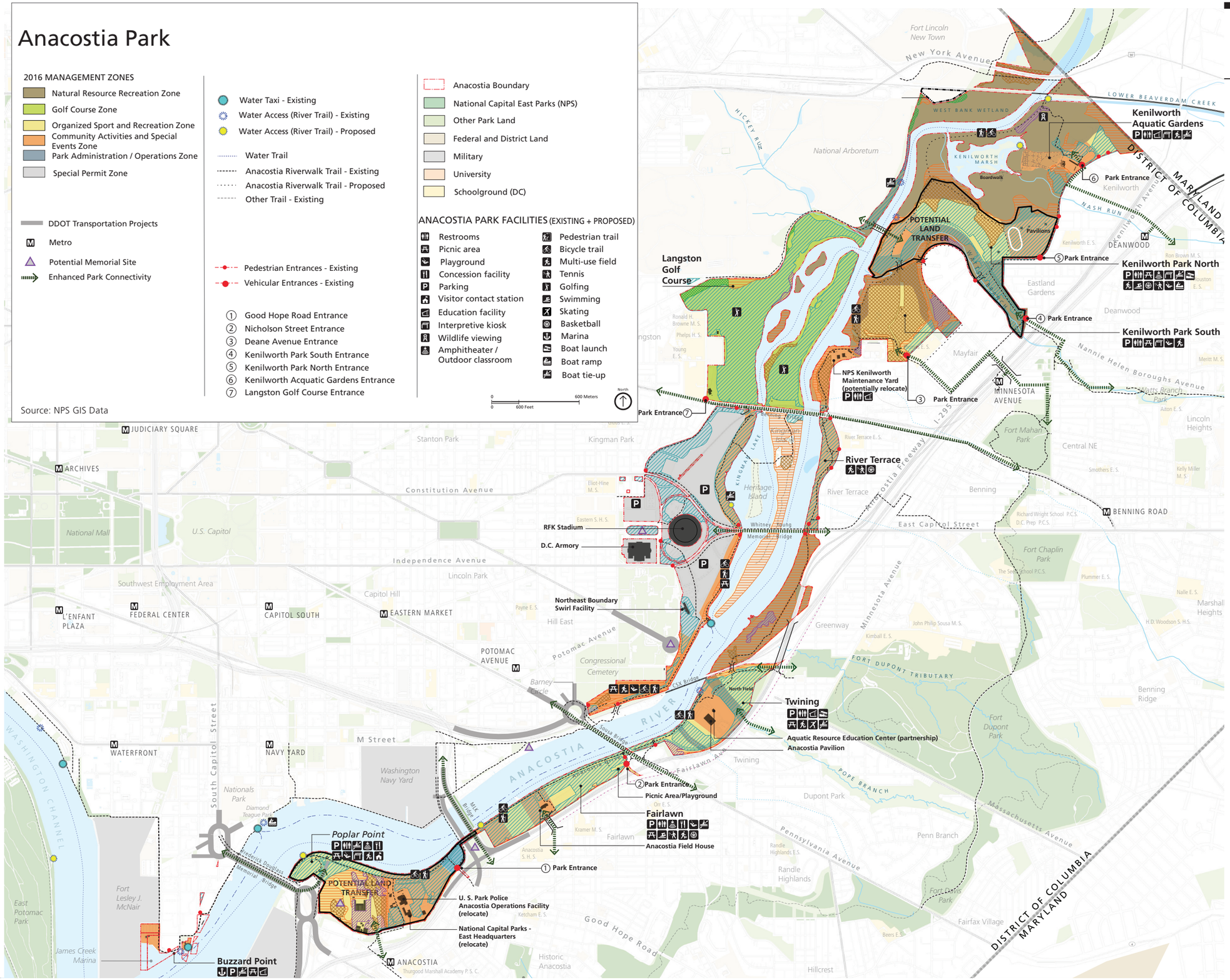
- Anacostia Boundary
- National Capital East Parks (NPS)
- Other Park Land
- Federal and District Land
- Military
- University
- Schoolground (DC)

ANACOSTIA PARK FACILITIES (EXISTING + PROPOSED)

- Restrooms
- Picnic area
- Playground
- Concession facility
- Parking
- Visitor contact station
- Education facility
- Interpretive kiosk
- Wildlife viewing
- Amphitheater / Outdoor classroom
- Pedestrian trail
- Bicycle trail
- Multi-use field
- Tennis
- Golfing
- Swimming
- Skating
- Basketball
- Marina
- Boat launch
- Boat ramp
- Boat tie-up

0 600 Meters
0 600 Feet
North

Source: NPS GIS Data



National Park Service
US Department of the Interior

Anacostia Park
Washington, DC

Upland Vegetation Legend

- Barren Land
- Developed, Open Space
- Low-Elevation Mixed Oak/Heath Forest
- Successional Meadow/Grassland
- Successional Mixed Deciduous Forest
- Successional Tuliptree Forest (Typic Type)
- Successional Vine-Shrubland

Management Plan Environmental Assessment

FIGURE 12
Upland Vegetation: Alternative 2

capping with top soil, which have resulted and could result in adverse impacts on upland vegetation. However, much of the cleared areas have been and would be revegetated with native species, which would mitigate the adverse impact.

Beneficial impacts have and may occur due to restoration, revegetation, and new plantings in the park. Implementation of the management plan for wetlands and resident Canada geese would result in a beneficial impact on upland vegetation because it would include the installation of rain gardens that would include new plantings in upland areas, and the reduction of geese would allow vegetation currently being grazed, such as in turf feeding areas, to revegetate. The 11th Street Bridge Park has the potential to result in beneficial impacts because the project would include planting of additional upland vegetation within the new park.

When combining the impacts of these projects with the impacts of alternative 1, the cumulative impact on upland vegetation would be both beneficial and adverse. Alternative 2 would contribute an imperceptible increment to the cumulative impact on upland vegetation.

Conclusion

While there could be adverse impacts on upland vegetation from potential vegetation-disturbing activities in alternative 2 such as clearing for the construction of new facilities, there would also be long-term beneficial impacts on vegetation from ecosystem rehabilitation work, some of which would likely be in woodlands. These actions would result in beneficial impacts on upland vegetation because they would preserve and protect the natural abundances and diversities of the forested areas within the park, which would be compliant with NPS *Management Policies 2006* and the purposes laid out in the establishing legislation of the park. The park's vegetation would continue to contribute to the park's diverse natural communities, including providing habitat for diverse wildlife. Under alternative 2, the project area would continue to foster some of the largest remaining natural areas and habitat in the District of Columbia. Therefore, the impacts of alternative 2 on upland vegetation would not approach the level of significant.

IMPACTS OF ALTERNATIVE 3

Impact Analysis

Alternative 3 would focus on finding a balance of sports and recreation facilities in the park with the rehabilitation of natural areas. As under alternative 2, upland vegetation under alternative 3 could be disturbed to some extent by partial or complete clearing for implementation of recreational or other facility expansion projects, including rehabilitation of existing park facilities or construction of new park facilities. Construction of new visitor access points, including roads, trails, and park entrances, could also disturb upland vegetation. The extent of these potentially vegetation-disturbing activities, however, would be less than in alternative 2 due to fewer acres being allocated to zones permitting facility expansion or creation. This would produce short-term and long-term adverse impacts on upland vegetation similar to those under alternative 2, but to a lesser extent.

Alternative 3 would have similar long-term impacts on upland vegetation as alternative 2, but with greater beneficial effects. The beneficial effect would be greater because the total acreage designated as natural

resource recreation zone, which would have a focus on ecosystem rehabilitation activities, would be larger. Rehabilitation of some upland woodland sites would result in potentially greater long-term beneficial impacts on the park's upland vegetation than in alternative 2. See figure 13 for a map of the management zones under alternative 3 in relation to the upland vegetation within the park.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting upland vegetation under alternative 3 would include the construction of the proposed Anacostia Riverwalk Trail, the management plan for wetlands and resident Canada geese, the potential 11th Street Bridge Park, the Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, and investigation or remediation of contaminated sites. Collectively, these actions have resulted or may result in both beneficial and adverse impacts on upland vegetation. These impacts are described under alternative 1. When combining the impacts of these projects with the impacts of alternative 3, the cumulative impact on upland vegetation would be both beneficial and adverse. Alternative 3 would contribute an imperceptible increment to the cumulative impact on upland vegetation.

Conclusion

While there could be short-term adverse impacts on upland vegetation from potential vegetation-disturbing activities in alternative 3 such as clearing for the construction of new facilities, there would also be long-term beneficial impacts on vegetation from ecosystem rehabilitation work, some of which would likely be in woodlands. These actions would result in beneficial impacts on upland vegetation because they would preserve and protect the natural abundances and diversities of the forested areas within the park, which would be compliant with NPS *Management Policies 2006* and the purposes laid out in the establishing legislation of the park. The park's vegetation would continue to contribute to the park's diverse natural communities, including providing habitat for diverse wildlife. Actions under alternative 3 would result in increased beneficial impacts over alternative 2 due to the increase in acreage of the natural resource recreation zones. Under alternative 3, the project area would continue to foster some of the largest remaining natural areas and habitat in the District of Columbia. Therefore, the impacts of alternative 3 on upland vegetation would not approach the level of significant.

IMPACTS OF ALTERNATIVE 4

Impact Analysis

Although upland vegetation could be temporarily disturbed by recreation and other facility expansions under alternative 4, the disturbance would be to a lesser extent than under alternatives 2 or 3. Adverse impacts due to vegetation disturbance would result from the same type of activities as discussed under alternatives 2 and 3. The extent of these potentially vegetation-disturbing activities, however, would be less than in alternatives 2 or 3 due to fewer acres being allocated to zones permitting facility expansion or creation. This would produce short-term and long-term adverse impacts on upland vegetation similar to those under alternatives 2 and 3, but to a lesser extent.

Anacostia Park

2016 MANAGEMENT ZONES

- Natural Resource Recreation Zone
- Golf Course Zone
- Organized Sport and Recreation Zone
- Community Activities and Special Events Zone
- Park Administration / Operations Zone
- Special Permit Zone

- DDOT Transportation Projects
- Metro
- Potential Memorial Site
- Enhanced Park Connectivity

- Water Taxi - Existing
- Water Access (River Trail) - Existing
- Water Access (River Trail) - Proposed

- Water Trail
- Anacostia Riverwalk Trail - Existing
- Anacostia Riverwalk Trail - Proposed
- Other Trail - Existing

- Pedestrian Entrances - Existing
- Vehicular Entrances - Existing

1. Good Hope Road Entrance
2. Nicholson Street Entrance
3. Deane Avenue Entrance
4. Kenilworth Park South Entrance
5. Kenilworth Park North Entrance
6. Kenilworth Acquatic Gardens Entrance
7. Langston Golf Course Entrance

- Anacostia Boundary
- National Capital East Parks (NPS)
- Other Park Land
- Federal and District Land
- Military
- University
- Schoolground (DC)

ANACOSTIA PARK FACILITIES (EXISTING + PROPOSED)

- Restrooms
- Picnic area
- Playground
- Concession facility
- Parking
- Visitor contact station
- Education facility
- Interpretive kiosk
- Wildlife viewing
- Amphitheater / Outdoor classroom
- Pedestrian trail
- Bicycle trail
- Multi-use field
- Tennis
- Golfing
- Swimming
- Skating
- Basketball
- Marina
- Boat launch
- Boat ramp
- Boat tie-up

0 600 Meters
0 600 Feet
North

Source: NPS GIS Data

Langston Golf Course
Park Entrance (7)
NPS Kenilworth Maintenance Yard (potentially relocate)
Park Entrance (3)
Kenilworth Aquatic Gardens
Park Entrance (6)
Kenilworth Park North
Park Entrance (5)
Park Entrance (4)
Kenilworth Park South
POTENTIAL LAND TRANSFER
Pavilions
River Terrace
RFK Stadium
D.C. Armory
Northeast Boundary Swirl Facility
Twining
Aquatic Resource Education Center (partnership)
Anacostia Pavilion
Park Entrance (2)
Picnic Area/Playground
Fairlawn
Anacostia Field House
Park Entrance (1)
Park Administration and Visitor Contact Facility (proposed)
U. S. Park Police Anacostia Operations Facility (relocate)
U. S. Park Police Aviation Facility
National Capital Parks - East Headquarters (relocate)
Poplar Point
POTENTIAL LAND TRANSFER
Buzzard Point

National Park Service
US Department of the Interior

Anacostia Park
Washington, DC

Upland Vegetation Legend

- Barren Land
- Developed, Open Space
- Low-Elevation Mixed Oak/Heath Forest
- Successional Meadow/Grassland
- Successional Mixed Deciduous Forest
- Successional Tuliptree Forest (Typic Type)
- Successional Vine-Shrubland

Management Plan Environmental Assessment

FIGURE 13
Upland Vegetation: Alternative 3

Alternative 4 would focus on rehabilitation and expansion of park natural areas. Current ecosystem rehabilitation management efforts would continue, with a major focus on the substantial expansion of the park's system of woodlands, wetlands, and stream corridors. Because of the focus on expanding woodland ecosystems, alternative 4 would have greater long-term beneficial impacts on upland vegetation than alternatives 2 or 3. The beneficial effect would be greater because the total acreage designated as natural resource recreation zone, which would have a focus on ecosystem rehabilitation activities, would be larger. See figure 14 for a map of the management zones under alternative 4 in relation to the upland vegetation within the park.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting upland vegetation under alternative 4 would include the construction of the proposed Anacostia Riverwalk Trail the management plan for wetlands and resident Canada geese, the potential 11th Street Bridge Park, the Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, and investigation or remediation of contaminated sites. Collectively, these actions have resulted or may result in both beneficial and adverse impacts on upland vegetation. These impacts are described under alternative 1. When combining the impacts of these projects with the impacts of alternative 4, the cumulative impact on upland vegetation would be both beneficial and adverse. Alternative 4 would contribute an imperceptible increment to the cumulative impact on upland vegetation.

Conclusion

While there could be adverse impacts on upland vegetation from potential vegetation-disturbing activities in alternative 4 such as clearing for the construction of new facilities, there would also be long-term beneficial impacts on vegetation from expanded ecosystem rehabilitation work, some of which would be in woodlands. These actions would result in beneficial impacts on upland vegetation because they would preserve and protect the natural abundances and diversities of the forested areas within the park, which would be compliant with NPS *Management Policies 2006* and the purposes laid out in the establishing legislation of the park. The park's vegetation would continue to contribute to the park's diverse natural communities, including providing habitat for diverse wildlife. Actions under alternative 4 would result in increased beneficial impacts over alternatives 2 and 3 due to the increase in acreage of the natural resource recreation zones. Under alternative 4, the project area would continue to foster some of the largest remaining natural areas and habitat in the District of Columbia. Therefore, the impacts of alternative 4 on upland vegetation would not approach the level of significant.

FLOODPLAINS

A floodplain is defined as any land area susceptible to being inundated by floodwaters from any water source (44 CFR par 59), whereas the 100-year floodplain is the area of land inundated by a flood event that has a 1 percent chance of being equaled or exceeded in any given year (FEMA 2016). The project area, including many park facilities, is within a 100-year floodplain and several park facilities are subject to flooding. Therefore, the impact topic of floodplains is retained for further analysis.

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Anacostia Park

2016 MANAGEMENT ZONES

- Natural Resource Recreation Zone
- Golf Course Zone
- Organized Sport and Recreation Zone
- Community Activities and Special Events Zone
- Park Administration / Operations Zone
- Special Permit Zone

- DDOT Transportation Projects
- Metro
- Potential Memorial Site
- Enhanced Park Connectivity

- Water Taxi - Existing
- Water Access (River Trail) - Existing
- Water Access (River Trail) - Proposed

- Water Trail
- Anacostia Riverwalk Trail - Existing
- Anacostia Riverwalk Trail - Proposed
- Other Trail - Existing

- Pedestrian Entrances - Existing
- Vehicular Entrances - Existing

1. Good Hope Road Entrance
2. Nicholson Street Entrance
3. Deane Avenue Entrance
4. Kenilworth Park South Entrance
5. Kenilworth Park North Entrance
6. Kenilworth Acquatic Gardens Entrance
7. Langston Golf Course Entrance

- Anacostia Boundary
- National Capital East Parks (NPS)
- Other Park Land
- Federal and District Land
- Military
- University
- Schoolground (DC)

ANACOSTIA PARK FACILITIES (EXISTING + PROPOSED)

- Restrooms
- Picnic area
- Playground
- Concession facility
- Parking
- Visitor contact station
- Education facility
- Interpretive kiosk
- Wildlife viewing
- Amphitheater / Outdoor classroom
- Pedestrian trail
- Bicycle trail
- Multi-use field
- Tennis
- Golfing
- Swimming
- Skating
- Basketball
- Marina
- Boat launch
- Boat ramp
- Boat tie-up

0 600 Meters
0 600 Feet
North

Source: NPS GIS Data

Langston Golf Course
Park Entrance (7)
NPS Kenilworth Maintenance Yard (potentially relocate)
Park Entrance (3)
POTENTIAL LAND TRANSFER
Pavilions
Park Entrance (6)
Kenilworth Aquatic Gardens
Park Entrance (5)
Kenilworth Park North
Park Entrance (4)
Kenilworth Park South
River Terrace
RFK Stadium
D.C. Armory
Northeast Boundary Swirl Facility
Twining
Aquatic Resource Education Center (partnership)
Anacostia Pavilion
Park Entrance (2)
Picnic Area/Playground
Fairlawn
Anacostia Field House
Park Entrance (1)
Park Administration and Visitor Contact Facility (proposed)
U. S. Park Police Anacostia Operations Facility (relocate)
U. S. Park Police Avaition Facility
National Capital Parks - East Headquarters (relocate)
Poplar Point
Buzzard Point

Upland Vegetation Legend

- Barren Land
- Developed, Open Space
- Low-Elevation Mixed Oak/Heath Forest
- Successional Meadow/Grassland
- Successional Mixed Deciduous Forest
- Successional Tuliptree Forest (Typic Type)
- Successional Vine-Shrubland

National Park Service
US Department of the Interior

Anacostia Park
Washington, DC

Management Plan Environmental Assessment

FIGURE 14
Upland Vegetation: Alternative 4

AFFECTED ENVIRONMENT

Floodplain

Riverine floodplains are important resources affecting the quality of the natural and human environment. They provide fertile soil for agricultural use, groundwater recharge, sediment and contaminant filtering, nutrient transport, wildlife habitat and natural corridors, recreation and aesthetics, and a reduction in flooding by providing flood storage (Task Force on the Natural and Beneficial Functions of the Floodplain 2002). Many of these floodplain functions and values at Anacostia Park were lost when the seawall was constructed and most of the river floodplain was filled in the late 19th and early 20th centuries, as described in chapter 1. Forested backswamps, oxbows, and marshes no longer exist over much of the park, and the natural processes once affecting the riverine geomorphology are now influenced by human actions such as seawalls and levees. Exceptions to this, where natural floodplains remain, are those portions of the northern part of the park where wetlands and a natural levee near the Kenilworth Aquatic Gardens still exist. Natural floodplains also remain along Kingman Lake/Kingman Marsh and within portions of the Langston Golf Course that were spared from historic fill activities.

Floodplain functions are minimal across the southern portion of the park. Virtually all of the floodplain has been impacted along the western shoreline of the Anacostia River between Frederick Douglas Memorial Bridge and Benning Bridge. Along the eastern side of the river, south of Benning Bridge, habitats that could be used by wildlife are fragmented where patches of forests remain at Poplar Point next to the East Headquarters and north of the CSX bridge; other areas are cleared and maintained in grass. This section of the floodplain rarely receives flood waters, and when it does flood, the historic change in the landscape has reduced the floodplain's ability to provide sediment retention, nutrient transport, flood attenuation, and groundwater recharge functions. Farther north in the vicinity of Kingman Marsh and Kenilworth Park, areas of the historic floodplain remain relatively undisturbed. These areas provide flood storage, wetland marsh habitats for wildlife, sediment filtering, and nutrient transport functions. In addition, these areas adjacent to the river channel provide flood flow attenuation and storage that help to mitigate downstream flooding impacts.

Despite the historic alterations of the floodplain to control flooding, much of the project area remains susceptible to inundation from catastrophic floods. According to the Federal Emergency Management Agency's (FEMA) flood insurance rate maps (FEMA 2010a–e), portions of the park are situated within a 100-year floodplain and a 500-year floodplain (figure 15), as determined by the 100-year and 500-year flood elevations. Generally, the 100-year floodplain extends several hundred feet from the river within the park boundary. Exceptions include the areas surrounding estuaries and tributaries of the Anacostia River, such as Watts Branch in the Kenilworth Park area and Hickey Run at the edge of the Langston Golf Course area, where the 100-year floodplain extends farther into the park boundaries. There are no high flood hazard zones designated within the park.

Flooding in the Washington Metropolitan Region is generally the result of high rainfall events—such as tropical storms, hurricanes, thunderstorms, and local cloudbursts—that cause upstream floodflows on the Potomac and Anacostia Rivers that then combine with tidal flooding from the Chesapeake Bay (FEMA 2010f). Local flooding problems also occur where storm sewers become conduits for flood waters when check valves and gates do not operate properly.

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Anacostia Park

- Anacostia Boundary
- National Capital East Parks (NPS)
- Other Park Land
- Federal and District Land
- Military
- University
- Schoolground (DC)
- Existing Sports Field
- DDOT Transportation Projects
- 100 Year Flood Plain
- 500 Year Flood Plain
- Metro
- Potential Memorial Site

- Water Taxi - Existing
- Water Access (River Trail) - Existing
- Water Trail
- Anacostia Riverwalk Trail - Existing
- Anacostia Riverwalk Trail - Proposed
- Other Trail - Existing
- Pedestrian Entrances - Existing
- Vehicular Entrances - Existing

- Existing Multi-Use Fields
- Existing Park Lands

① Good Hope Road Entrance
② Nicholson Street Entrance
③ Deane Avenue Entrance
④ Kenilworth Park South Entrance
⑤ Kenilworth Park North Entrance
⑥ Kenilworth Acquatic Gardens Entrance
⑦ Langston Golf Course Entrance

Source: NPS GIS Data

0 600 Meters
0 600 Feet

North

Langston Golf Course
Kenilworth Aquatic Gardens
⑥ Park Entrance
Kenilworth
POTENTIAL LAND TRANSFER
Pavilions
⑤ Park Entrance
Kenilworth Park North
④ Park Entrance
Kenilworth Park South
NPS Kenilworth Maintenance Yard
③ Park Entrance
Park Entrance ⑦
River Terrace
RFK Stadium
D.C. Armory
Northeast Boundary Swirl Facility
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POTENTIAL LAND TRANSFER
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U. S. Park Police Avaition Facility
National Capital Parks - East Headquarters
Buzzard Point

National Park Service
US Department of the Interior

Anacostia Park
Washington, DC

Floodplains Legend

- AE - 1% AnnualChance flood Hazard (100-yr Flood)
- X(2) - 0.2% Annual Chance Flood Hazard
- X(1) - Area of Minimal Flood Hazard

Management Plan Environmental Assessment

FIGURE 15
Floodplains: Existing Conditions

To address flooding problems along the Anacostia River that emerged as the city grew in the early twentieth century, the US Army Corps of Engineers from 1936 to 1946 implemented the Washington, DC Local Flood Protection Project. This project introduced infrastructure changes that significantly reduced flooding and flood risks to low-lying areas in the District of Columbia. Along the Potomac River, components of the flood control project today provide a design level of protection equal to a 575,000 cfs (cubic feet of water per second) event with an estimated recurrence interval of 100 years. Along the Anacostia River the design level of protection is equal to a 700,000 cfs event with an estimated recurrence interval of 100 years.

Information on the flooding history in the District of Columbia area is available from the Wisconsin Avenue gauge on the Potomac River in Georgetown. Flood stage at the gauge is elevation 7 feet. The official flood of record occurred in March 1936, with an estimated flow of 484,000 cfs and a recorded flood elevation of 17.3 feet MLW (mean low water) at the Wisconsin Avenue gauge. Record floods have included the following (height in feet is maximum stage at Wisconsin Avenue gauge) (USACE 2005):

- October 1942—17.7 feet (446,000 cfs)
- March 1936—17.3 feet (484,000 cfs)
- June 1889—16.9 feet (no flow available)
- September 1870—15.9 feet (no flow available)
- June 1972—15.4 feet (359,000 cfs) (Hurricane Agnes)
- April 1937—14.3 feet (347,000 cfs)
- November 1877—no stage available (325,000 cfs)
- February 1881—no stage available (275,000 cfs)
- January 1996—13.88 feet (no flow available)
- February 1918—13.8 feet (no flow available)
- September 1996—13.75 feet (360,000 cfs)
- May 1924—12.8 feet (no flow available)
- August 1995—8.5 feet (216,000 cfs)

Prior to the Flood Protection Project, the area inundated by flood water extended over a wide expanse of tidal wetlands and adjacent lowland areas. Today the 100-year floodplain in southeast Washington is confined to relatively narrow areas along the Anacostia River and its tributaries that are largely within the limits of the park (figure 15). In most areas of the park, the 100-year floodplain is fewer than 200 to 300 feet wide. Areas where the floodplain widens include the park administrative area at Poplar Point, the Twining recreation area, the West Waterfront Area (near RFK Stadium), Langston Golf Course along Kingman Lake, Kenilworth Aquatic Gardens, and the Upriver Natural Area shoreline.

The Federal Emergency Management Agency has determined that the river in Washington, DC is a single reach with relatively the same flood hazard along its entire length. This determination is based upon the average weighted difference in water-surface elevations between the 10- and 100-year floods. Elevation differences between the 100-year flood elevation and other recurrence interval flood elevations are as follows (FEMA 2010f):

- 10-year flood— - 4.9 inches
- 50-year flood— - 1.7 inches
- 500-year flood— - 3.4 inches

Base flood elevations, based on National Geodetic Vertical Datum of 1929 (NGVD), along the Anacostia River in the District of Columbia are as follows (FEMA 2010a–e):

- Buzzard Point—11’ NGVD
- Poplar Point—11’ NGVD
- Pennsylvania Avenue Bridge—-11’ NGVD
- CSX Railroad Bridge—13’ NGVD
- Benning Road—14’ NGVD
- Hickey Run—14’ NGVD
- Kenilworth Marsh Inflow—15’ NGVD
- District Line—17’ NGVD

Base flood elevation on Hickey Run at the park boundary is approximately 14’ NGVD (FEMA 2010a). Base flood elevation at the park entrance along Watts Branch is also 15’ NGVD (FEMA 2010a and c).

Flood inundation maps are available for the District of Columbia for four flood frequencies, corresponding to the 10-, 50-, 100- and 500-year floods (USACE 2005). Flows are measured at the Wisconsin Avenue gauge from which peak discharges have been determined for different recurrence interval storms (table 6). Flood velocities are generally low because of the broad floodplain, limited topography, and wide river channel (FEMA 2010f). The storage available in the wider channel of the Anacostia considerably reduces the flood stage considerably (USACE 1968). Some local flooding along the Anacostia is the result of sewer overflows and minor drainage system overflows (FEMA 2010f).

TABLE 6. FREQUENCY, DISCHARGE, AND CORRESPONDING WISCONSIN AVENUE GAUGE RIVER STAGE FOR SURFACE WATER PROFILES

Location	Frequency	Peak Discharges (cfs)	Wisconsin Ave. Gage Stage (ft. mlw)
Potomac River Drainage Area—11,560 sq. mi. (Wisconsin Avenue Gauge)	10-year	236,000	11.4
	50-year	381,000	15.9
	100-year	457,000	18.2
	500-year	658,000	23.1
Anacostia River (Reach 1) Drainage Area—163 sq. mi. (Confluence with Potomac River)	10-year	24,884	NA
	50-year	34,241	NA
	100-year	39,462	NA
	500-year	50,000	NA

Source: USDI BR 2002; FEMA 2010f

Flood Protection Facilities

Flood protection facilities along the east shore of the Anacostia River in the park include two levees, a floodwall, and temporary flood closures that collectively provide flood protection for Joint Base Anacostia-Bolling, the former sites of the Architect of the Capitol’s nursery and the DC Lanham Nursery at Poplar Point, and NPS facilities at the park. The US Army Corps of Engineers has jurisdiction over the facilities and inspects them annually. There are no flood control structures on the west shore of the river within the park.

The NPS Anacostia Stickfoot Sewer Embankment extends from high ground at the east edge of the former site of the Architect of the Capitol's nursery to a point 200 feet south of the riverfront. It then turns west adjacent to Anacostia Drive for approximately 1,500 feet ending just before the South Capitol Street Bridge access ramps. Recent inspection found that the embankment's condition is fair and that it will fulfill its intended purpose, but that significant maintenance is needed to bring the structure up to NPS standards (USDI BR 2004).

The Anacostia South Capitol Street Levee is located adjacent to the river's edge. It extends from a point about 600 feet upstream of the South Capitol Street Bridge and continues downstream through Joint Base Anacostia-Bolling. Recent inspection found that the levee's condition is fair and that it will fulfill its intended purpose, but that significant maintenance is needed to bring the structure up to NPS standards (USDI BR 2004).

Supplementing the embankment and levee in the park is a five-foot high steel sheet pile wall built as part of the National Capital Parks Flood Control Project. The park facilities protected include the NACE headquarters, the US Park Police Anacostia Operations Facility, and adjacent recreational lands. Recent inspection found that the floodwall's condition is unsatisfactory, that it will not fulfill its intended purpose, and that immediate major corrective repair or rehabilitation is required (USDI BR 2004). Because the sheet pile wall is much lower than the Poplar Point levee, there is some concern about the extent of flood protection that it provides (NPS 2002d and USDI 2004). In order to provide protection, the opening in the floodwall across the NACE headquarters entrance road must be closed in advance of floodwater. In recent years the temporary closure has not held during flood events.

Emergency Preparedness

Emergency Flood Plans

Responsibilities for flood control actions during emergency situations are identified in two plans, as follows:

- Washington, DC and Vicinity Flood Emergency Manual (USACE 2005)
- National Capital Region Flood Plan (NPS date not known)

The Flood Emergency Manual (USACE 2005) identifies actions to be taken by various federal, state, municipal and public agencies in response to a flood emergency in the District of Columbia. It applies to areas along the Potomac River from the Key Bridge to Washington National Airport and along the Anacostia River from the 11th Street Bridge to its confluence with the Potomac River.

Flood forecasts are disseminated to all participating agencies and are placed on the Washington Area Warning Alert System and the NOAA Weather Radio whenever a Potomac River stage of seven feet mean low water is predicted at the Wisconsin Avenue gauge. Flood protection measures are based on flood stages at the Wisconsin Avenue gauge. Measures relevant to the park include the following:

- at 9 feet the National Park Service should notify all marinas and boat clubs of an impending flood
- at 13 feet DC Water should take actions at the Northeast Boundary Swirl Facility

- at 23 feet the National Park Service should sandbag the entrances to the USPP Anacostia Operations Facility buildings and the NACE headquarters and place a sandbag dike on the NPS park road at Good Hope Road
- at 16 feet protective actions are recommended in the area south of V street at Buzzard Point

The NPS Flood Plan states NPS responsibilities and authorities for flooding occurring in the District of Columbia area, and provides listings of emergency contacts and required emergency actions. It includes an "Action List" that states activities that are to take place according to different flood stages.

Flood Forecasting/Early Warning System

Flood emergency operations in the District of Columbia and the adjacent areas are initiated in response to Potomac River stage forecasts furnished by the National Weather Service, River Forecast Service in Sterling, Virginia (USACE 2005). Forecasts are disseminated to all participating agencies and are placed on the Washington Area Warning Alert System and the NOAA Weather Radio whenever a Potomac River stage of seven feet (MLW) or greater is predicted at the Wisconsin Avenue gauge.

Site Specific Flood Risk

Flooding of Park Facilities

Numerous administrative buildings, maintenance buildings, parking lots and other man-made features are located within the 100-year floodplain within the park (table 7).

Minor flooding affecting park facilities has occurred in the park several times in recent years. Recent flooding occurrences resulted from two storms in 1996 and Hurricane Isabel in September 2003. NACE headquarters and the USPP Anacostia Operations Facility were impacted by each storm. Minor flooding occurred when the temporary closure of the floodwall along Anacostia Drive failed. During each storm, water reached the floor level of NACE headquarters forcing short-term evacuation of the building and requiring minor repairs. Flooding in 1996 at NACE headquarters and at the USPP Anacostia Operations Facility on Poplar Point was exacerbated by back up of the 36-inch storm sewer draining the administrative area and adjacent upland.

TABLE 7. FACILITIES IN ANACOSTIA PARK THAT ARE WITHIN THE 100-YEAR FLOODPLAIN

Park Area	NPS Facilities	Other Facilities/Buildings	Infrastructure
Buzzard Point	none	James Creek Marina Earth Conservation Corps Center	parking areas roads three sanitary sewer lines two storm sewer lines
Kingman Lake Waterfront	none	none	Whitney Young Memorial Bridge piers three storm sewer lines two sanitary sewer lines RFK access road DC Water Northeast Boundary Swirl Facility

TABLE 7. FACILITIES IN ANACOSTIA PARK THAT ARE WITHIN THE 100-YEAR FLOODPLAIN (CONT.)

Park Area	NPS Facilities	Other Facilities/Buildings	Infrastructure
RFK Stadium Special Events Area	none	RFK Stadium parking lots	storm sewer lines
Langston Golf Course	none	Langston Golf Course (fairways and greens only)	two storm sewer lines
West Waterfront	none	none	storm sewer
Upriver Natural Area	Kenilworth Marsh Boardwalk Anacostia River Trail	none	none
Kenilworth Aquatic Gardens	Kenilworth Marsh Boardwalk Kenilworth AG Greenhouses Kenilworth AG Visitor Center	none	none
Kenilworth Park South	Kenilworth Maintenance Facility	none	none
River Terrace	basketball courts gazebo	none	two storm sewers one sanitary sewer
Woodland Preserve	none	none	several sanitary sewers several storm sewers one storm sewer outfall
Fairlawn and Twining	Anacostia Drive boat launch fields near Anacostia Field House	none	storm and sanitary sewers
Poplar Point	NACE headquarters USPP Anacostia Operations Facility and aviation hangar	none	three CS0 outlets three storm sewer DC Water pump house and station

METHODOLOGY AND ASSUMPTIONS

Potential impacts on floodplains are assessed based on the FEMA flood insurance rate maps as described above, Executive Order 11988: "Floodplain Management," and NPS Director's Order #77-2: *Floodplain Management*. Each of the action alternatives was evaluated in terms of the extent to which proposed management actions would involve use of the floodplain and include measures to minimize use of the floodplain, pose a flood risk to human health and property, and impact natural floodplain values. The current conditions of floodplains, as presented in the "Affected Environment" section, were compared with the alternatives described in chapter 2 to determine how floodplains would be affected.

Impacts to floodplains were evaluated on a conceptual basis rather than a precise quantitative basis because plans showing the exact footprint for new infrastructure are not known. Future decisions based on this EA for new infrastructure would undergo further evaluations via the NEPA compliance process and would be subject to evaluation for compliance with floodplain policy at that time.

The resource-specific context for the evaluation of impacts on floodplains includes the following:

- Floodplain functions and values (store floodwaters, minimize erosion of adjacent soils, provide riparian habitat, etc.) are intrinsic to floodplains and cannot be easily duplicated or replaced.
- Executive Order 11988: "Floodplain Management" and Executive Order 13690: "Federal Flood Risk Management Standard" direct all federal agencies to avoid short- and long-term impacts associated with occupancy, modification, and development of floodplains when possible.
- NPS Director's Order #77-2: *Floodplain Management* implements Executive Order 11988: "Floodplain Management" and established NPS policy to preserve floodplain values and minimize potentially hazardous conditions associated with flooding.

IMPACTS OF ALTERNATIVE 1: NO ACTION

Impact Analysis

The continuation of existing management under the no-action alternative would not include any new development or use within the floodplain. In general, the low-intensity recreational uses of the floodplain that would continue under the no-action alternative would not have any impact on flood storage capacity or downstream flood elevations nor would they obstruct, restrict, or redirect flood flows. There would be no changes to the existing conditions and would therefore result in no impacts on floodplains.

Cumulative Impacts

Although past, present, and reasonably foreseeable actions have resulted or may result in impacts on floodplains within the project area, the no-action alternative would have no impacts and therefore would not contribute to the effects of other actions. The impacts of these other actions have or will be discussed in their project-specific compliance documents as required. Consequently, there would be no cumulative impacts on floodplains under the no-action alternative.

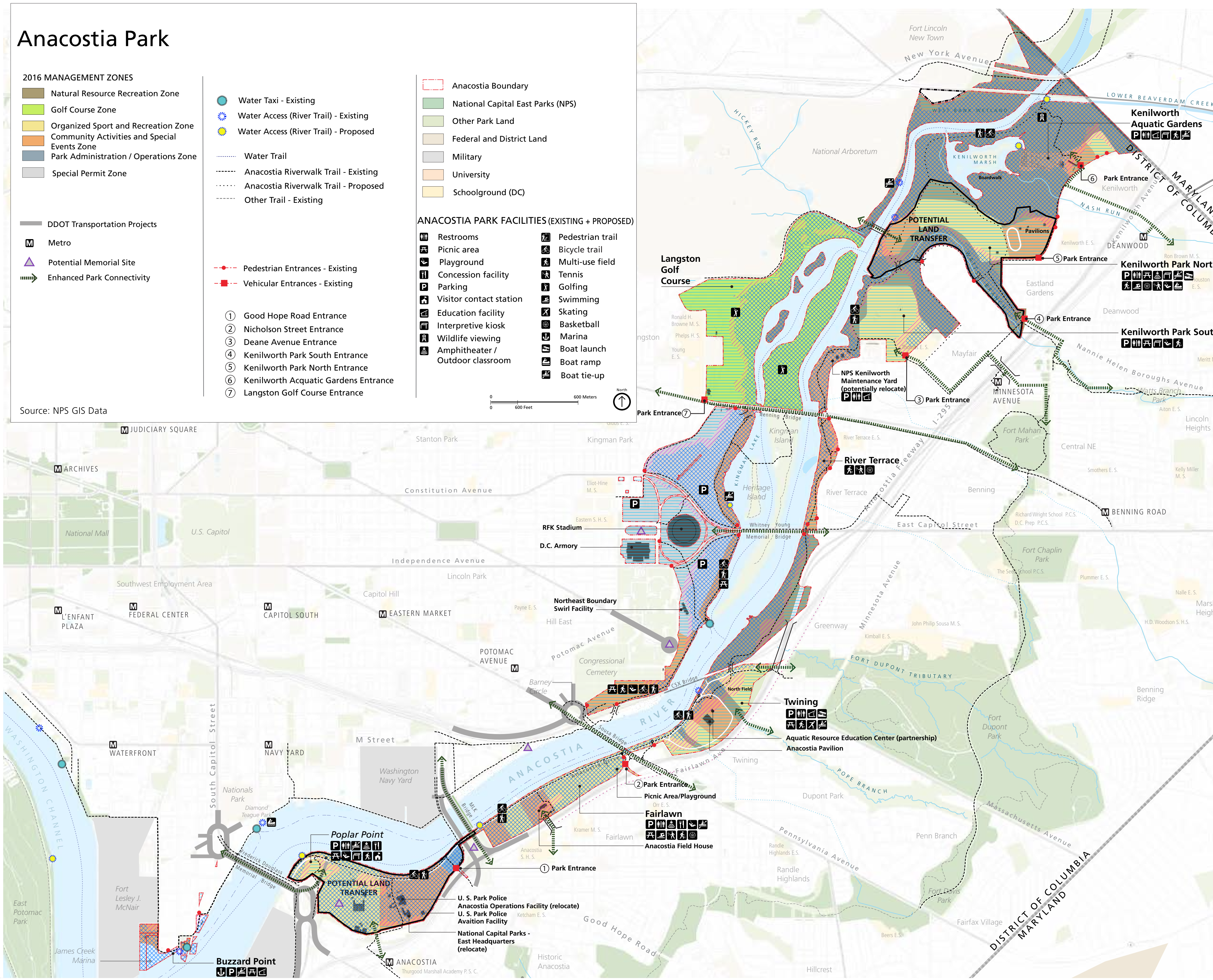
Conclusion

The no-action alternative would result in no impacts on floodplains within the project area because there would be no change in management actions (as described in chapter 2) that would require new development or uses of the floodplain. Therefore, there would be no impacts on floodplains under the no-action alternative that would approach the level of significance.

IMPACTS OF ALTERNATIVE 2

Impact Analysis

Alternative 2 envisions the highest degree of expansion and enhancement of facilities (based on acreage of zones), focusing on recreational and educational opportunities, with 30 percent of the park falling within the natural resource recreation zone designation. See figure 16 for a map of the management zones under alternative 2 in relation to the floodplain.



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US Department of the Interior

Anacostia Park
Washington, DC

Management Plan Environmental Assessment

FIGURE 16
Floodplains: Alternative 2

Overall, alterations to the landscape condition within the floodplain would not greatly change under this alternative from the conditions described under the "Affected Environment" above. New actions would likely occur at the Kenilworth Maintenance Yard and Poplar Point to accommodate the community activities and special events zone designation compared to the other alternatives, as well as the RFK shoreline. Those portions of the floodplain that are historically filled, currently covered by lawns, and occupied by buildings and parking areas would experience new or enhanced activities and development that may be proposed under future projects tiered to this management plan under alternative 2. Proposed activities would generally fall into two categories, as follows:

- uses required for visitor enjoyment or for park functions that must be located near water (in non-high hazard areas) that require little physical development, and that do not involve overnight accommodations, including:
  - ❑ picnic facilities
  - ❑ playgrounds
  - ❑ trails
  - ❑ athletic fields
  - ❑ waterfront promenades and plazas
  - ❑ day-time parking facilities
- uses in the 100-year floodplain that are functionally dependent upon locations in proximity to water or that need to be located near water for visitor enjoyment would include:
  - ❑ marinas
  - ❑ docks
  - ❑ piers
  - ❑ boat launches
  - ❑ boat tie-ups
  - ❑ boathouses
  - ❑ bridges
  - ❑ park roads
  - ❑ debris removal facilities
  - ❑ outdoor water sports facilities
  - ❑ boardwalks to interpret wetlands
  - ❑ riparian edge treatments

Because much of the park is within the 100-year floodplain, new development and facility expansion contemplated under each management zone in alternative 2 would have the potential to displace a small volume of flood waters and impact floodplain functions and values, primarily water storage. However, new or enhanced facilities that may be developed in future projects tiered to this management plan would be focused on recreational and educational facilities, many of which are not intrusive and would not constitute major obstructions or consume floodplain storage area (trails, play fields, kiosks, gardens, etc.). Specific facilities have not been proposed under this plan.

While proposed waterfront or water access facilities such as docks, piers, boat launches, and boardwalks would presumably be designed for the physical setting they are sited in, they would have the potential for short- and long-term floodplain impacts due to displacement of a small volume of flood waters. This alternative, however, would impose a greater number of such water-dependent facilities that would pose a greater risk of becoming washed away during a flood event. Such impacts may occur during construction or long after a project is completed depending on the timing and intensity of storm events.

Besides the small degree of flood attenuation and storage impacts, a number of other floodplain functions may be impacted under this alternative. Use of Poplar Point for organized sports and recreation could result in loss of forested riparian wildlife habitat at Poplar Point. New pavement for parking and trails could result in loss of sediment retention and nutrient removal functions of the existing floodplain. Compacted soils in high traffic areas and sports fields could result in poor groundwater recharge. Lastly, conversion of natural floodplain areas to other uses could detract from their existing education/scientific value.

In addition, the to-be-determined siting and design of potential facilities would consider local and federal regulations and the current planning and engineering practices that have increased awareness of floodplain development and frequent flooding events associated with climate change pursuant to Executive Order 13690: "Federal Flood Risk Management Standard". Future development projects would likely be subject to individual compliance.

Beneficial impacts under this alternative include the restoration of the stream corridor and floodplain for the Pope Branch tributary as it bisects the park at the Twining area. The increase in floodplain functions that would occur at this location include expansion of wildlife habitat as well as the retention of sediments and absorption of nutrients before floodwaters enter the Anacostia River.

Existing potential risks to human health and property would continue in waterfront areas where public recreation facilities and visitor use would remain within the 100-year floodplain. However, the combination of slow flood velocities and emergency preparedness planning in the District of Columbia would continue to enable emergency management officials to provide adequate warnings to visitors to take appropriate action (i.e., evacuate flood prone areas) in advance of potential flooding.
Any natural area restoration within the floodplain would likely provide improved functions and values of the floodplain through provision of riparian habitat that could naturally convey floodwaters in a way that reduces velocity and retains sediment through establishment of natural vegetation. In other words, these restoration projects could result in improvements related to flood dissipation, flood storage, water quality, and wildlife habitat functions of floodplains in several areas of the park. Specific restoration projects (and therefore acreages and specific benefits) would be reviewed as projects are proposed and would be subject to relevant compliance.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting floodplains under alternative 2 would include the construction of the proposed Anacostia Riverwalk Trail, the Anacostia Watershed Restoration Plan, the management plan for wetlands and resident Canada geese, the 11th Street Bridge Park, Poplar Point land transfer and redevelopment, and transportation improvements adjacent to the park. Collectively, these actions have resulted and may result in both beneficial and adverse impacts.

Adverse impacts have or may result from construction and development projects. For example, the land transfer and subsequent redevelopment of Poplar Point could result in adverse impacts on the floodplain because it would introduce new buildings and structures into the 100-year floodplain, which may displace some floodwaters and result in a loss of floodplain capacity. However, some excavation may occur along the shoreline to create additional floodplain capacity in this area to compensate for the loss. Future transportation improvements adjacent to the park, particularly the South Capitol Corridor and the Barney Circle and Southeast Boulevard Study, would introduce new structures into the floodplain and may displace a small amount of flood waters. However, this displacement is expected to be small and final designs would include measures to mitigate the impacts. The Anacostia Riverwalk Trail has been constructed and will be constructed within the 100-year floodplain, but is unlikely to result in adverse impacts on the floodplain because it is relatively narrow and at-grade except in areas elevated with a boardwalk to maintain conveyance of drainage ditches, and the boardwalks would allow flood waters to

pass unobstructed. Though the 11th Street Bridge will be constructed within the floodplain, it would be constructed on existing piers and so adverse impacts on the floodplain are expected to be minimal.

Beneficial impacts have or may result from removal of structures within the floodplain and ecological restoration activities. For example, implementation of the management plan for wetlands and resident Canada geese would result in beneficial impacts on floodplains through removal of sheet piling from the floodplain, and installation of rain gardens, both of which may result in an improvement in functionality of the floodplain. Actions related to the Anacostia Watershed Restoration Plan could result in beneficial impacts on floodplains because some actions may reconnect stream channels that became disconnected from the floodplain, which would reduce the energy associated with high flow events.

When combining the impacts of these actions with the impacts of alternative 2, the cumulative impact would be both beneficial and adverse. Alternative 2 would contribute an imperceptible increment to the cumulative impact on floodplains.

Conclusion

Alternative 2 would result in both adverse and beneficial impacts on the floodplain. Under alternative 2, existing uses would continue in the 100-year floodplain that are required for visitor enjoyment or for park functions that must be located near the water. Any new uses in the 100-year floodplain would be designed to minimize the potential to impact floodplain storage capacity or to contribute to debris discharges during storm events, as directed by Executive Order 11988 and Director's Order #77-2. Ecosystem rehabilitation and naturalization projects in alternative 2 would have a long-term beneficial impact on site specific flood risks to human health and property. Park visitors would continue to have adequate warnings to take appropriate action in advance of potential flooding. Alternative 2 would have a long-term beneficial impact on natural floodplain values. In general, the low intensity recreational uses of the floodplain proposed in the Alternative 2 would not have a perceptible impact on flood storage capacity or downstream flood elevations nor would they obstruct, restrict, or redirect flood flows. Wetland restoration could enhance the flood dissipation, flood storage, water quality, and wildlife habitat functions of floodplains in several areas of the park. The National Park Service would continue to maintain floodplains as it has in recent years in accordance with the statements for management for the park (NPS 1988a and 1988b) and NPS *Management Policies 2006* (NPS 2006). Therefore, the impacts under alternative 2 would not approach the level of significant.

IMPACTS OF ALTERNATIVE 3: NPS PREFERRED

Impact Analysis

Alternative 3 envisions a lesser degree of expansion and enhancement of facilities (based on acreage of zones) than alternative 2. This alternative would have a continued focus on recreational and educational opportunities, but with 45 percent of the park falling within the natural resource recreation zone designation. The list of proposed activities would generally be the same as those under alternative 2. See figure 17 for a map of the management zones under alternative 3 in relation to the floodplain.

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Anacostia Park

2016 MANAGEMENT ZONES

- Natural Resource Recreation Zone
- Golf Course Zone
- Organized Sport and Recreation Zone
- Community Activities and Special Events Zone
- Park Administration / Operations Zone
- Special Permit Zone

- DDOT Transportation Projects
- Metro
- Potential Memorial Site
- Enhanced Park Connectivity

- Water Taxi - Existing
- Water Access (River Trail) - Existing
- Water Access (River Trail) - Proposed

- Water Trail
- Anacostia Riverwalk Trail - Existing
- Anacostia Riverwalk Trail - Proposed
- Other Trail - Existing

- Pedestrian Entrances - Existing
- Vehicular Entrances - Existing

1. Good Hope Road Entrance
2. Nicholson Street Entrance
3. Deane Avenue Entrance
4. Kenilworth Park South Entrance
5. Kenilworth Park North Entrance
6. Kenilworth Acquatic Gardens Entrance
7. Langston Golf Course Entrance

- Anacostia Boundary
- National Capital East Parks (NPS)
- Other Park Land
- Federal and District Land
- Military
- University
- Schoolground (DC)

ANACOSTIA PARK FACILITIES (EXISTING + PROPOSED)

- Restrooms
- Picnic area
- Playground
- Concession facility
- Parking
- Visitor contact station
- Education facility
- Interpretive kiosk
- Wildlife viewing
- Amphitheater / Outdoor classroom
- Pedestrian trail
- Bicycle trail
- Multi-use field
- Tennis
- Golfing
- Swimming
- Skating
- Basketball
- Marina
- Boat launch
- Boat ramp
- Boat tie-up

0 600 Meters
0 600 Feet
North

Source: NPS GIS Data

Langston Golf Course

Park Entrance (7)

Kenilworth Aquatic Gardens
Park Entrance (6)
Kenilworth Park North
Park Entrance (5)
Kenilworth Park South
Park Entrance (4)
NPS Kenilworth Maintenance Yard (potentially relocate)
Park Entrance (3)
River Terrace

POTENTIAL LAND TRANSFER

RFK Stadium
D.C. Armory
Northeast Boundary Swirl Facility

Twining
Aquatic Resource Education Center (partnership)
Anacostia Pavilion
Park Entrance (2)
Picnic Area/Playground
Fairlawn
Anacostia Field House

Park Entrance (1)
Park Administration and Visitor Contact Facility (proposed)
U. S. Park Police Anacostia Operations Facility (relocate)
U. S. Park Police Avaition Facility
National Capital Parks - East Headquarters (relocate)

Poplar Point
POTENTIAL LAND TRANSFER
Buzzard Point

Floodplains Legend

- AE - 1% AnnualChance flood Hazard (100-yr Flood)
- X(2) - 0.2% Annual Chance Flood Hazard
- X(1) - Area of Minimal Flood Hazard

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Anacostia Park
Washington, DC

Management Plan Environmental Assessment

FIGURE 17
Floodplains: Alternative 3

The potential for impacts to floodplains under alternative 3 are similar to those described for alternative 2. However, under this alternative, those activities would be less extensive because an increased area of the park would be designated as natural resource recreation zone. Water-dependent structures such as marinas, piers, docks, and boat launches are included under this alternative, although the development proposed under this alternative is not as intense as alternative 2. Such structures are at risk of being washed away during a major flood event. Newly created natural resources and recreation zones would include managed plantings at the Kenilworth Maintenance Yard, the shoreline of River Terrace, Fairlawn, the western shoreline of Kingman Lake, and the riparian area adjacent to Kingman Marsh at the Langston Golf Course. This means there would be less area within the floodplain designated as appropriate for development of new and expanded facilities. Beneficial impacts to the floodplain would occur at these sites because managed plantings would enhance wildlife habitat corridors, allow for sediment retention and greater nutrient absorption, and increase opportunities for environmental floodplain education and awareness. No significant earthworking that would change topographic elevations is proposed in natural resource and recreation zones; therefore, impacts to floodflow attenuation and storage would not be affected. As with alternative 2, the to-be-determined siting and design of the potential facilities would consider the local and federal regulations and current planning and engineering practices that have increased awareness of floodplain development and frequent flooding events associated with climate change. Future development projects would likely be subject to individual compliance.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting floodplains under alternative 3 would include the construction of the proposed Anacostia Riverwalk Trail, the Anacostia Watershed Restoration Plan, the management plan for wetlands and resident Canada geese, the 11th Street Bridge Park, Poplar Point land transfer and redevelopment, and transportation improvements adjacent to the park. Collectively, these actions have resulted and may result in both beneficial and adverse impacts. These impacts are described under alternative 2. When combining the impacts of these actions with the impacts of alternative 3, the cumulative impact would be both beneficial and adverse. Alternative 3 would contribute an imperceptible increment to the cumulative impact on floodplains.

Conclusion

Alternative 3 would result in both adverse and beneficial impacts on the floodplain. Under alternative 3, existing uses would continue in the 100-year floodplain that are required for visitor enjoyment or for park functions that must be located near the water. Any new uses in the 100-year floodplain would be designed to minimize the potential to impact floodplain storage capacity or to contribute to debris discharges during storm events, as directed by Executive Order 11988 and Director's Order #77-2. Ecosystem rehabilitation and naturalization projects in alternative 3 would have a long-term beneficial impact on site specific flood risks to human health and property. Park visitors would continue to have adequate warnings to take appropriate action in advance of potential flooding. Alternative 3 would have a long-term beneficial impact on natural floodplain values. In general, the low intensity recreational uses of the floodplain proposed in the Alternative 3 would not have a perceptible impact on flood storage capacity or downstream flood elevations nor would they obstruct, restrict, or redirect flood flows. Wetland restoration would enhance the flood dissipation, flood storage, water quality, and wildlife habitat functions of floodplains in several areas of the park. The National Park Service would continue to maintain floodplains as it has in recent years in accordance with the statements for management for the park (NPS 1988a and

1988b) and NPS *Management Policies 2006* (NPS 2006). Therefore, the impacts under alternative 3 would not approach the level of significant.

IMPACTS OF ALTERNATIVE 4

Impact Analysis

Alternative 4 envisions a lower degree of expansion and enhancement of facilities (based on acreage of zones), than alternatives 2 or 3. This alternative would have a focus on passive, nature based recreational and educational opportunities, with 50 percent of the park falling within the natural resource recreation zone designation. The list of proposed activities would generally be the same as those under alternative 2. See figure 18 for a map of the management zones under alternative 4 in relation to the floodplain.

The potential for impacts on floodplains under alternative 4 are similar to those described for alternatives 2 and 3. Just as with alternatives 2 and 3, no earthworking is proposed that would change topographical conditions in such a way as to alter floodflow attenuation functions under this alternative. Water-dependent structures such as marinas, piers, docks, and boat launches are included under this alternative but to a lesser degree than under the other action alternatives. Such structures would have less impact on flood storage when compared to alternatives 2 and 3. Nonetheless, structures in the floodplain under this alternative would be at risk of being washed away during a major flood event; however, with fewer structures proposed in the floodplain, the risk would be lower than alternatives 2 and 3.

The acreage of managed plantings added to the floodplain within the park would be greater under this alternative, particularly south of Benning Bridge. These include larger managed plantings at River Terrace, the shoreline along the Congressional Cemetery, Fairlawn, and Poplar Point. This means there would be less area within the floodplain designated as appropriate for development of new and expanded facilities, and the installation of management plantings at a more intensive level would result in benefits to floodplain functions due to more forested land area available for sediment retention, nutrient absorption, and riparian wildlife habitat corridors. As with alternative 3, the siting and design of potential new facilities are to be determined, and the park would consider the local and federal regulations and current planning and engineering practices with an increased awareness of floodplain development and frequent flooding events associated with climate change. Future development projects would likely be subject to individual compliance.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting floodplains under alternative 4 would include the construction of the proposed Anacostia Riverwalk Trail, the Anacostia Watershed Restoration Plan, the management plan for wetlands and resident Canada geese, the 11th Street Bridge Park, Poplar Point land transfer and redevelopment, and transportation improvements adjacent to the park. Collectively, these actions have resulted and may result in both beneficial and adverse impacts. These impacts are described under alternative 2. When combining the impacts of these actions with the impacts of alternative 4, the cumulative impact would be both beneficial and adverse. Alternative 4 would contribute an imperceptible increment to the cumulative impact on floodplains.

Anacostia Park

2016 MANAGEMENT ZONES

- Natural Resource Recreation Zone
- Golf Course Zone
- Organized Sport and Recreation Zone
- Community Activities and Special Events Zone
- Park Administration / Operations Zone
- Special Permit Zone

- DDOT Transportation Projects
- Metro
- Potential Memorial Site
- Enhanced Park Connectivity

- Water Taxi - Existing
- Water Access (River Trail) - Existing
- Water Access (River Trail) - Proposed

- Water Trail
- Anacostia Riverwalk Trail - Existing
- Anacostia Riverwalk Trail - Proposed
- Other Trail - Existing

- Pedestrian Entrances - Existing
- Vehicular Entrances - Existing

1. Good Hope Road Entrance
2. Nicholson Street Entrance
3. Deane Avenue Entrance
4. Kenilworth Park South Entrance
5. Kenilworth Park North Entrance
6. Kenilworth Acquatic Gardens Entrance
7. Langston Golf Course Entrance

- Anacostia Boundary
- National Capital East Parks (NPS)
- Other Park Land
- Federal and District Land
- Military
- University
- Schoolground (DC)

ANACOSTIA PARK FACILITIES (EXISTING + PROPOSED)

- Restrooms
- Picnic area
- Playground
- Concession facility
- Parking
- Visitor contact station
- Education facility
- Interpretive kiosk
- Wildlife viewing
- Amphitheater / Outdoor classroom
- Pedestrian trail
- Bicycle trail
- Multi-use field
- Tennis
- Golfing
- Swimming
- Skating
- Basketball
- Marina
- Boat launch
- Boat ramp
- Boat tie-up

0 600 Meters
0 600 Feet
North

Source: NPS GIS Data

Langston Golf Course

Park Entrance (7)

Kenilworth Aquatic Gardens
Park Entrance (6)
POTENTIAL LAND TRANSFER
Pavilions
Park Entrance (5)
Kenilworth Park North
Park Entrance (4)
Kenilworth Park South
NPS Kenilworth Maintenance Yard (potentially relocate)
Park Entrance (3)
River Terrace
RFK Stadium
D.C. Armory
Northeast Boundary Swirl Facility
Twining
Aquatic Resource Education Center (partnership)
Anacostia Pavilion
Park Entrance (2)
Picnic Area/Playground
Fairlawn
Anacostia Field House
Park Entrance (1)
Park Administration and Visitor Contact Facility (proposed)
U. S. Park Police Anacostia Operations Facility (relocate)
U. S. Park Police Avaition Facility
National Capital Parks - East Headquarters (relocate)
Poplar Point
Buzzard Point

National Park Service
US Department of the Interior

Anacostia Park
Washington, DC

Floodplains Legend

- AE - 1% AnnualChance flood Hazard (100-yr Flood)
- X(2) - 0.2% Annual Chance Flood Hazard
- X(1) - Area of Minimal Flood Hazard

Management Plan Environmental Assessment

FIGURE 18
Floodplains: Alternative 4

Conclusion

Alternative 4 would result in both adverse and beneficial impacts on the floodplain. Under alternative 4, existing uses would continue in the 100-year floodplain that are required for visitor enjoyment or for park functions that must be located near the water. Any new uses in the 100-year floodplain would be designed to minimize the potential to impact floodplain storage capacity or to contribute to debris discharges during storm events, as directed by Executive Order 11988 and Director's Order #77-2. Ecosystem rehabilitation and naturalization projects in alternative 4 would have a long-term beneficial impact on site specific flood risks to human health and property. Park visitors would continue to have adequate warnings to take appropriate action in advance of potential flooding. Alternative 4 would have a long-term beneficial impact on natural floodplain values. In general, the low intensity recreational uses of the floodplain proposed in the Alternative 4 would not have a perceptible impact on flood storage capacity or downstream flood elevations nor would they obstruct, restrict, or redirect flood flows. Wetland restoration would enhance the flood dissipation, flood storage, water quality, and wildlife habitat functions of floodplains in several areas of the park. The National Park Service would continue to maintain floodplains as it has in recent years in accordance with the statements for management for the park (NPS 1988a and 1988b) and NPS *Management Policies 2006* (NPS 2006). Therefore, the impacts under alternative 4 would not approach the level of significant.

ARCHEOLOGICAL RESOURCES

Research shows that humans have continuously inhabited the shores of the Anacostia River for at least 13,000 years, and some evidence suggests the area may have been occupied as early as 20,000 years ago (Katz et al. 2016). Several archeological surveys have been undertaken within the project area that have uncovered both prehistoric and historic archeological sites. Though the shoreline has been dramatically changed through the creation of the seawall and addition of fill material in the early 20th century, these archeological surveys show that there is a high probability of additional prehistoric and Native American archeological deposits in several sites along the Anacostia River. Any management actions that would require ground disturbance in the park would have the potential to disturb resources in some of the areas with a high probability of resource occurrence. Therefore, the impact topic of archeological resources is retained for further analysis.

AFFECTED ENVIRONMENT

Several cultural periods are recognized for their association with potential archeological resources within the Potomac River Valley—including the Anacostia River watershed—from the time of the retreat of the Wisconsin polar ice cap in 10,000 BC to the current historic period, including both prehistoric periods and historic periods (Katz et al. 2016). The cultural periods are as follows:

- Paleoindian Period (ca. 10,000–9600 BC)
- Early Archaic Period (ca. 9600–7600 BC)
- Middle Archaic Period (ca. 7600–3800 BC)
- Late Archaic Period (ca. 3800–2400 BC)
- Terminal Archaic (ca. 2400–1400 BC)

- Early Woodland Period (ca. 1400–700 BC)
- Middle Woodland Period (ca. 700 BC–AD 1000)
- Late Woodland Period (ca. AD 1000–1600)
- Contact Period (ca. AD 1600–1700)
- Agrarian and Early Colonial Period (AD 1660–1730)
- Trading and Plantation Economy (AD 1730–1800)
- Washington Navy Yard (AD 1800–1860)
- The Civil War (AD 1861–1865)
- Post-Civil War Development (AD 1865–1902)
- The Bonus Army (AD 1932)

The Anacostia River basin has been studied archeologically by amateurs and professionals for more than 125 years. Early artifact collection and several modern studies provide information on the park's archeological resources. These can be divided into three phases (Bromberg, et al 1989), as follows:

- late-19th- and early-20th-century studies conducted by interested amateurs and professionals
- mid-20th-century studies of specific sites (typically discovered during construction activities)
- late-20th-century studies pursuant to federal law requiring all federally funded construction projects to mitigate impacts on significant archeological resources

The late-19th century began a period of intense archeological interest in and adjacent to the project area. The earliest archeologists to conduct studies in the Anacostia River basin were S.V. Proudfit, who prepared a synthesis of Indian sites in the Washington, DC area in 1889, and William H. Holmes, whose late-19th- and early-20th-century studies were considered the most comprehensive treatment of the Potomac River valley archeology for decades. Many collectors and avocational archeologists were active in this area during the early 20th century and many of the artifacts gathered by early these collectors are now housed in the National Museum of Natural History, though there is often little or no contextual information on these collections (Katz et al. 2016). Approximately 40 sites located east of the Anacostia River in the District of Columbia studied during this time have been identified and given numbers by the District of Columbia State Historic Preservation Office based on the information on the acquisition cards. However, due to the incomplete information on the cards, the locations of some of these are only approximate. Because of the lack of controlled scientific excavation techniques used during the various investigations, it is not possible to determine the age, function or condition of most of these recorded sites (ESI 1989).

During the mid-20th century, few archeological studies were completed (Bromberg, et al 1989). Those that were conducted focused on specific resources, including locating the site of an Anacostin Indian Fort known as Nacotchtank Village (Mayre 1938; Scisco 1955; and MacCord 1957). However, those studies were inconclusive. Another study focused on resource potential at a site along Beaverdam Creek (MacCord 1957), but this site has been since destroyed by construction of DC-295 and the New York Avenue interchange.

Since 1975, a number of studies have occurred as part of design for federally funded projects that have provided information on the potential for archeological resources in the vicinity of the park. Findings from these archeological investigations collectively suggest that the probability of occurrence of intact archeological resource areas within the park is highly variable, ranging from quite low to very high. The

probability of occurrence is directly related to a site's location with respect to filling operations; sites within the park that were wetlands prior to the fill operations in 1890 have the lowest probability of occurrence and sites along and upland of the pre-1890 shoreline that were not filled have a higher probability of occurrence.

According to the 2016 archeological overview and assessment, three principal landform types are present in the park: artificially made lands, uplands, and an eastern terrace. Artificially made land, which occurred either by direct filling of open water or through the burial of marshes and swamps, makes up much of the park and has a very low potential for archeological resources. Upland landscapes occur mainly along the western shore near the DC Armory, in areas that have been previously disturbed and manipulated for development; therefore these areas have a low potential for archeological resources. The eastern terrace, on the other hand, has good potential for archeological resources due to the lengthy occupation record but is not particularly common in the park. This landform is mainly located along the northern section of Anacostia Park (Katz et al. 2016).

The 2016 archeological overview and assessment identified locations in the park where prehistoric and historic cultural deposits might be located and their potential to be intact. Areas identified as having a high probability to yield archeological resources mainly fall on the eastern shore of the river, although there are some areas with some potential for archeological resources on the west bank of the river (Katz et al. 2016). Archeological investigations suggest that the area on the east side of the Anacostia River, upland of the pre-1890 shoreline, is likely to contain widely distributed Native American archeological materials. The eastern bank of the Anacostia River has been known as a locus of intensive prehistoric occupation since the archeological studies of the late-19th century. It is now known that this area was inhabited and utilized by indigenous populations for at least 8,000 years (ESI 1989). Early inhabitants appear to have favored the east side of the river, probably because of the wide, sandy terrace found there as opposed to the high bluffs found along most of the west shore (MacCord 1957). The probability of sites on the west shore of the Anacostia River is generally low, even within areas that were filled after 1890 (US DOT 1983); however, areas of high probability for archeological resources on the west shore have been identified (Katz et al. 2016).

Archeological investigations have generally concluded that sites with the potential for prehistoric and historic remains cannot be recovered through surface observation or shallow testing. Most of the high probability areas are now covered by 3 to 35 feet of fill. Where freshwater streams formerly entered the river, the fill tends to be shallower with some depths as low as 1 foot or less. Placement of fill and/or sediment may have either damaged any integrity that the sites may have possessed or served to preserve these sites. Effects of man-made or natural fill on the integrity of the archeological artifacts that may be found is uncertain (US DOT 1983). However, archeological surveys conducted for the Barney Circle Freeway Project uncovered intact sites dating to the Terminal Archaic, Early Woodland, and Middle Woodland periods close to the Anacostia Freeway, showing that intact areas do survive within disturbed portions of the landscape (Katz et al. 2016).

The 2016 overview and assessment of archeological resources within Anacostia Park determined that a total of 47 sites, including 11 tentatively identified sites, are located within or adjacent to park property. Tentatively identified sites are those where artifacts have been recovered or sites that the DC State Historic Preservation Officer identifies as likely but of which affirmative surveys have not been completed. Some of

these sites have not been definitively located, and may have since been lost due to the various amounts of development that has taken place within the park. Of the 47 sites, 31 are prehistoric sites, two are historic era sites, and 14 have both prehistoric and historic components (Katz et al. 2016). Of the prehistoric sites identified in the park (Katz et al. 2016), two have Paleoindian components, five have Archaic and Woodland period components, five are Woodland period, and one is a Contact period site.

METHODOLOGY AND ASSUMPTIONS

Archeological resources are the remains of past human activity and the records documenting the analysis of such remains (NPS 2002a). Potential impacts on archeological resources are evaluated based on the amount of disturbance to an archeological resource and the degree to which the integrity remains or is otherwise lost without recordation of the remains.

The resource-specific context for the evaluation of impacts on the cultural landscape includes the following:

- NPS *Management Policies 2006* states that archeological resources "will be maintained and preserved in a stable condition to prevent degradation and loss… Archeological resources will be managed in situ, unless the removal of artifacts or physical disturbance is justified by research, consultation, preservation, protection, or interpretive requirements" (NPS 2006).
- Studies show that there is a high probability of additional prehistoric and Native American archeological deposits on the east side of the Anacostia River, upland of the pre-1890 shoreline, particularly in eastern terrace landforms near Kenilworth Aquatic Gardens.
- In many areas of the park, placement of fill has either previously damaged the integrity of archeological sites or has preserved archeological sites through up to 35 feet of made land. In these areas, it is unlikely that intact archeological resources would be encountered during shallow ground disturbance.

IMPACTS OF ALTERNATIVE 1: NO ACTION

Impact Analysis

Under the no-action alternative, continuation of existing management protocols would continue to have the potential to result in impacts on archeological resources, though the risk would be low. Ground surface disturbances would generally include activities required for maintenance of existing facilities and would likely involve activities that require only shallow excavations or ground disturbance, such as road repairs, utility repairs, turf management, wetland restoration, and landscape management. These activities would often be undertaken in locations previously disturbed for existing facilities where intact archeological resources are unlikely. No new major facilities would be developed in the park. The National Park Service would continue to manage the park as it has in recent years in accordance with the statements for management for the park (NPS 1988a and 1988b) and NPS *Management Policies 2006* (NPS 2006).

Continued and future management actions (as described in chapter 2) involving ground surface disturbance throughout the park would be subject to compliance with Section 106 of the National Historic Preservation Act. Compliance activities would be undertaken, as appropriate, to determine the occurrence, type, and intensity of the potential impacts on archeological resources. As appropriate, proposed sites for

ground disturbance would be surveyed to identify archeological resources that are present, to determine data potential and significance, and to assess their eligibility for the National Register. Management actions would be designed to avoid impacts on resources determined to be significant. In the event that adverse effects could not be avoided, measures would be implemented to mitigate those effects. These would include data recovery and documentation, as appropriate.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting archeological resources under alternative 1 would include the construction of the proposed Anacostia Riverwalk Trail, the management plan for wetlands and resident Canada geese, Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, and investigation or remediation actions of contaminated sites. Collectively, these actions have resulted or may result in adverse impacts on archeological resources.

Adverse impacts on archeological resources have resulted and may result from ground-disturbing activities. For example, DDOT is constructing paved bicycle and pedestrian trails along the waterfront for the Anacostia Riverwalk Trail, which may result in adverse impacts on intact archeological resources through ground disturbance during construction and soil compaction during use. Implementation of the management plan for wetlands and resident Canada geese would require ground disturbance for some management techniques such as daylighting of streams and installation of erosion control measures, seawall breaks, signage, boardwalks, and trails. These may result in adverse impacts on archeological resources if any are intact and encountered. The land transfer and subsequent redevelopment of Poplar Point may result in adverse impacts on archeological resources due to ground disturbance for construction of buildings, creation of wetlands, and development of cultural and entertainment areas. However, mitigation measures would be determined through consultation with the DC State Historic Preservation Office during Section 106 compliance. Ongoing implementation of the actions under the DC Water Clean Rivers Project has the potential to result in adverse impacts on archeological resources due to ground disturbance and excavation required for the project. However, mitigation measures were developed in coordination with the DC State Historic Preservation Office. The investigation or remediation of contaminated sites may include excavation of contaminated soils and capping with top soil, which could result in adverse impacts on archeological resources if any intact archeological deposits exist within the soil to be disturbed. These actions could result in damage or loss of archeological resources, or their context, through soil excavation and compaction.

When combining the impacts of these actions with the impacts of alternative 1, the cumulative impact would be adverse. Alternative 1 would contribute an imperceptible increment to the cumulative impact on archeological resources.

Conclusion

Alternative 1 could, but is unlikely to, result in changes to the existing conditions of intact archeological resources in the project corridor due to ground disturbance from potential maintenance of existing facilities. However, these activities would likely require only shallow excavations or ground disturbance, such as road repairs, utility repairs, turf management, wetland restoration, and landscape management. As discussed in the affected environment section above, most potential archeological sites are covered with up to 35 feet of fill, which minimizes the risk of adverse impacts due to shallow ground disturbance.

When necessary, measures taken to identify and mitigate potential adverse impacts on archeological resources, such as additional surveys and testing, would result in a long-term beneficial effect on archeological resources. These actions would enhance the general understanding of the prehistoric setting of the park and the region, would contribute to development of an interpretive program for the park, and would generally help with preservation of archeological resources in situ whenever possible. Therefore, the impacts of alternative 1 on archeological resources would not approach the level of significant.

IMPACTS OF ALTERNATIVE 2

Impact Analysis

Management actions under alternative 2 would result in both beneficial and adverse impacts on archeological resources. The development of potential new facilities in the areas designated as community activities and special events zone and as organized sport and recreation zone could result in ground disturbance during related construction activities, which could disturb unknown intact archeological resources. The potential for adverse impacts at a specific site would be related primarily to the extent of existing fill combined with the potential depth of disturbance associated with construction and maintenance activities. The areas of greatest potential impact would occur on the east side of the river where the potential for archeological resources is greatest, particularly in the Fairlawn and Twining areas and on the west side of the river near the Congressional Cemetery, which would be mostly designated as organized sport and recreation and community activities and special events zones. However, the areas of the park designated as natural resource recreation zone would result in a beneficial impact to archeological resources in those areas, including the area near Kenilworth Aquatic Gardens, which has a high probability of archeological resources. The desired resource condition and appropriate facilities assigned to the natural resource recreation zone would promote the preservation of undiscovered intact archeological resources by limiting development and construction that would require major ground disturbance.

Future construction actions involving ground surface disturbance throughout the park would be subject to individual tiered NEPA compliance and Section 106 compliance. Compliance activities would be undertaken, as appropriate, to determine the occurrence, type, and intensity of the potential impacts on archeological resources. As appropriate, proposed construction sites would be surveyed to identify archeological resources that are present, to determine data potential and significance, and to assess their eligibility for the National Register. Future construction projects would be designed to avoid impacts on resources determined to be significant. In the event that adverse impacts could not be avoided, measures would be implemented to mitigate those effects. These would include data recovery and documentation, as appropriate.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting archeological resources under alternative 2 would include the construction of the proposed Anacostia Riverwalk Trail, the management plan for wetlands and resident Canada geese, Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, and investigation or remediation actions of contaminated sites. Collectively, these actions have resulted or may result in adverse impacts on archeological resources. Impacts of these actions are described under alternative 1. When combining the impacts of these actions with the impacts

of alternative 2, the cumulative impact would be both adverse and beneficial. Alternative 2 would contribute an imperceptible increment to the cumulative impact on archeological resources.

Conclusion

Alternative 2 would result in both beneficial and adverse impacts on archeological resources within the project area. Potential future development of the areas designated as organized sport and recreation zone and as community activities and special events zone could result in adverse impacts to archeological resources if ground disturbance takes place where intact resources are located. However, because many potential archeological sites are covered with up to 35 feet of fill, shallow ground disturbance has a lower risk of resulting in impacts on intact archeological sites. Areas known to have a high probability of intact sites may require additional testing and compliance for ground-disturbing activities. Additionally, the areas designated as natural resource recreation zone could result in protection of intact archeological resources, much of which would be in the sensitive area near Kenilworth Aquatic Gardens. Any future measures taken to identify and mitigate potential adverse effects to archeological resources would have the same beneficial impact as under alternative 1. Therefore, the impacts of alternative 2 on archeological resources would not approach the level of significant.

IMPACTS OF ALTERNATIVE 3: NPS PREFERRED

Impact Analysis

The impacts on archeological resources under alternative 3 would be similar to those under alternative 2, but with a decrease in potential adverse impacts and an increase in potential beneficial impacts. Alternative 3 would designate less acreage to the development-focused community activities and special events and organized sports and recreation zones compared to alternative 2, and would increase the total acreage designated as natural resource recreation zone. This would limit the potential for future construction activities and development projects in these areas, particularly in the high-probability areas on the west shore of the river near the Congressional Cemetery and the east shore in the Fairlawn and Twining areas. Limiting future ground-disturbing activities would assist in the preservation of archeological resources, resulting in a beneficial impact.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting archeological resources under alternative 3 would include the construction of the proposed Anacostia Riverwalk Trail, the management plan for wetlands and resident Canada geese, Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, and investigation or remediation actions of contaminated sites. Collectively, these actions have resulted or may result in adverse impacts on archeological resources. Impacts of these actions are described under alternative 1. When combining the impacts of these actions with the impacts of alternative 3, the cumulative impact would be both adverse and beneficial. Alternative 3 would contribute an imperceptible increment to the cumulative impact on archeological resources.

Conclusion

Alternative 3 would result in both beneficial and adverse impacts on archeological resources within the project area. Potential future development of the areas designated as organized sport and recreation zone and as community activities and special events zone could result in adverse impacts to archeological resources if ground disturbance takes place where intact resources are located. However, because many potential archeological sites are covered with up to 35 feet of fill, shallow ground disturbance has a lower risk of resulting in impacts on intact archeological sites. Areas known to have a high probability of intact sites may require additional testing and compliance for ground-disturbing activities. Additionally, the areas designated as natural resource recreation zone could result in protection of intact archeological resources, much of which would be in the sensitive area near Kenilworth Aquatic Park. Alternative 3 would have increased beneficial impacts on archeological resources over alternative 2. Any future measures taken to identify and mitigate potential adverse effects to archeological resources would have the same beneficial impact as under alternative 1. Therefore, the impacts of alternative 3 on archeological resources would not approach the level of significant.

IMPACTS OF ALTERNATIVE 4

Impact Analysis

The impacts on archeological resources under alternative 4 would be similar to those under alternatives 2 and 3, but with a decrease in potential adverse impacts and an increase in potential beneficial impacts. Alternative 4 would designate the least acreage to the development-focused community activities and special events and organized sports and recreation zones compared to alternatives 2 and 3, and would increase the total acreage designated as natural resource recreation zone. This would limit the potential for future construction activities and development projects in these areas, particularly in the high-probability areas on the west shore of the river near the Congressional Cemetery and the east shore in the Fairlawn and Twining areas. Limiting future ground-disturbing activities would assist in the preservation of archeological resources, resulting in a beneficial impact.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting archeological resources under alternative 4 would include the construction of the proposed Anacostia Riverwalk Trail, the management plan for wetlands and resident Canada geese, the Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, and investigation or remediation actions of contaminated sites. Collectively, these actions have resulted or may result in adverse impacts on archeological resources. Impacts of these actions are described under alternative 1. When combining the impacts of these actions with the impacts of alternative 4, the cumulative impact would be both adverse and beneficial. Alternative 4 would contribute an imperceptible increment to the cumulative impact on archeological resources.

Conclusion

Alternative 4 would result in both beneficial and adverse impacts on archeological resources within the project area. Potential future development of the areas designated as organized sport and recreation zone and as community activities and special events zone could result in adverse impacts to archeological

resources if ground disturbance takes place where intact resources are located. However, because many potential archeological sites are covered with up to 35 feet of fill, shallow ground disturbance has a lower risk of resulting in impacts on intact archeological sites. Areas known to have a high probability of intact sites may require additional testing and compliance for ground-disturbing activities. Additionally, the areas designated as natural resource recreation zone could result in protection of intact archeological resources, much of which would be in the sensitive area near Kenilworth Aquatic Gardens and eastern shore of the river. Alternative 4 would have increased beneficial impacts on archeological resources over alternatives 2 and 3. Any future measures taken to identify and mitigate potential adverse effects to archeological resources would have the same beneficial impact as under alternative 1. Therefore, the impacts of alternative 4 on archeological resources would not approach the level of significant.

CULTURAL RESOURCES

Anacostia Park is home to several documented cultural resources including historic places, cultural landscapes, and ethnographic resources. Additionally, there are several structures, sites, and objects located within the park that are more than 50 years old and may be eligible for listing in the National Register of Historic Places but have yet to be formally evaluated by the National Park Service. The cultural resources—both formally evaluated and not—within the park boundaries include the Kenilworth Aquatic Gardens, Langston Golf Course, Anacostia Park cultural landscape, Anacostia Field House, Anacostia River Seawall, DC Water (formerly WASA) Poplar Point Pump House, the NACE headquarters building and the US Park Police facilities located on Poplar Point, the Bonus Army Encampment, the Fairlawn–Twining Waterfront, River Terrace Waterfront, and the Kingman Lake Waterfront. Changes to the setting surrounding these areas and historic places have the potential to affect these cultural resources and/or resources in need of National Register evaluation. Therefore, the impact topic of cultural resources is retained for further analysis.

AFFECTED ENVIRONMENT

Kenilworth Aquatic Gardens

Kenilworth Aquatic Gardens are located on the east shore of the Anacostia River. They are composed of 44 lily and ancient lotus ponds which were formed by excavating the Anacostia floodplain and wetlands between 1892 and 1938. The aquatic gardens are listed in the National Register of Historic Places and are considered historically significant as a unique feature of Washington, DC's park system, including important collections of water plants, and wild populations of fish, reptiles, and amphibians (NPS 1978). About 75 varieties of lily are on display in the aquatic gardens, including a number of unusual exotic water lilies. The aquatic gardens are associated with botanical study and development of water plants, and were the site of early experiments in hybridization. W.B. Shaw, Civil War veteran and civil servant, purchased the land as a farm after the Civil War. Shaw and his daughter, Helen Shaw Fowler, managed the property as a commercial operation known as Shaw Gardens from 1882 to 1938. The National Park Service purchased the aquatic gardens in 1938.

In addition to the lily ponds and ancient lotus ponds, several original structures remain within the aquatic gardens and are considered contributing features on the National Register nomination form. These structures include the administration building, the north and south greenhouse, and an original exterior lily tank. The administration building (dating to 1912) is a small board and batten building with a two-story central portion flanked by shed-like wings on three sides. Today, the administration building is used as an interpretive center for visitors to the aquatic gardens. The north greenhouse (dating to 1913) consists of a large greenhouse room with an adjoining smaller greenhouse room and adjoining wooden shed for the heating boiler. The greenhouse is primarily made of concrete walls with a metal and wood roof covered in translucent plastic, though it was original covered with glass panes. The south greenhouse (dating to 1913) is a long, narrow, one-story structure built into the side of a gently sloping hill. It has concrete walls and a metal and wood roof covered by translucent plastic, similar to the north greenhouse. An attached board and batten shed extension houses the heating boiler and serves as entry into the greenhouse. The exterior water tank is located to the rear of the south greenhouse and is a concrete, rectangular water lily tank that dates to the same period as the other structures (NPS 1978). These structures, along with the lily and lotus ponds, are included on the List of Classified Structures for National Capital Parks–East because they contribute to the historic significance of Kenilworth Aquatic Gardens (NPS 2002c).

In 2010, the National Park Service completed a cultural landscape inventory for the Kenilworth Aquatic Gardens. According to this cultural landscape inventory, this site's boundaries remain roughly as they were at its acquisition by the National Park Service between 1939 and 1942. This site is unique as the only NPS resource dedicated entirely to the propagation and display of aquatic plants. It is nationally significant for its unique landscape and botanical, educational, and recreational contribution. The site retains a high level of integrity to its period of significance (1882 to 1938), including the historical views marked by overhanging hardwood trees and nearby buildings having undergone only minimal alterations from their original appearance. Today, the aquatic gardens are in good condition (NPS 2010).

Langston Golf Course Historic District

Langston Golf Course, which opened in 1939, encompasses approximately 145 acres of largely man-made land along the shore of Kingman Lake. Langston Golf Course was listed in the National Register in 1991, and is historically significant for its association with desegregation of public golfing and recreational facilities in the greater Washington, DC area. It is also related to the growth of golf as a popular recreational and professional sport among black and African American people. Langston Golf course was originally constructed as a golf course for African Americans. It served as a focal point for black golfers in their efforts to encourage the development of golfing facilities for black players and to ensure equal access and equal quality of recreation facilities operated by the National Park Service. Langston Golf Course is also significant as the home course of the Royal Golf Club and the Wake Robin Golf Club, the nation's first golf clubs for black men and women. Development of Langston Golf Course is also noted for its association with the efforts of Harold Ickes, Secretary of the Interior from 1933 to 1941, aimed at achieving equal access to all public facilities for black citizens (NPS 1991).

The golf course provides a historic vista of undeveloped open space along the Anacostia River and retains most of its historical layout. The entire landscape of the golf course in its parkland setting is considered a primary contributing feature to the site's historic significance, which qualifies it for listing in the National

Register (NPS 1991). A cultural landscape inventory for the golf course is currently ongoing, including an evaluation of the buildings and structures on site to determine if any are contributing resources, or if any are eligible for listing in the National Register.

Anacostia Park

The cultural landscape of Lower Anacostia Park is eligible for listing in the National Register of Historic Places because of its association with historic events including the 1932 Bonus Army marches and the desegregation movement, its design and architecture as part of the McMillan Plan, for the reclamation and construction of the seawall by the US Army Corps of Engineers, for the construction of park facilities by Works Project Administration workers, and as its potential for yielding both prehistoric and historic archeological sites. The District of Columbia State Historic Preservation Officer (SHPO) formally concurred with this determination in 2008, and the National Register nomination form is under development.

Anacostia Field House

The Anacostia Field House is a Colonial Revival style brick structure that was constructed in 1932 as a recreation center for white patrons, operated by the District of Columbia through an agreement with the National Park Service. It was built and designed by architect W.G. Nell from the War Department Corps of Engineers. When the fieldhouse opened its facilities were segregated. However, in 1949, the Secretary of the Interior decreed that the swimming pool had to be desegregated, aligning with federal policy. That summer, the pool was temporarily shut down after attempts to desegregate the facility caused several altercations. These altercations and deliberations over desegregation are significant as part of the larger context of the civil rights movement in the United States.

Anacostia River Seawall

In 1891, the War Department began a 50-year program to implement the river reclamation actions identified in the Committee on Rivers and Harbors Report as necessary to mitigate flooding and public health programs in the tidal areas along the Anacostia River (55th Congress 1898). As funding became available through Congressional appropriations, dredging and filling operations progressed upstream from Poplar Point to the district line. The War Department dredged the river, deposited dredged material on the river's tidal flats, and constructed a stone seawall to hold the dredged material in place. Potomac River stone was used to build the seawall to a height generally four feet above mean low water (Overbeck 1985). Much of the riprap base of the early seawall sections—measuring up to forty feet in width in some locations—came from demolished structures such as the Old Navy Yard Bridge. By the mid-1920s, the project was largely complete. The seawall extended along both sides of the river in the District of Columbia, including the inner shoreline of Kingman Lake. Since the 1920s maintenance of the seawall has been sporadic and has actually been discontinued for the stretch of the river upstream of the CSX Railroad bridge. Within the park, numerous sections of the seawall are in need of major repair. Upstream of the CSX Railroad bridge most of the seawall has collapsed. The remaining seawall is considered historically significant as an integral component of the river reclamation project that shaped the shoreline of the nation's capital and that enabled creation of the land now composing the park. The DC State Historic Preservation Officer has concurred with this determination.

DC Water (formerly WASA) Poplar Point Pump House

The Poplar Point pump house is a one-story masonry brick structure with a hipped roof located on the eastern shoreline of the Anacostia River at Poplar Point. It was constructed as part of the original WASA (now DC Water) sewer system draining southeast Washington. It was likely built in 1905 in conjunction with the main pump station (O Street Station) located on the west side of the river (NPS 2008a). The pump house is determined eligible for the National Register, along with the main pump station and the Poplar Point pump station. However, the pump stations are outside the boundaries of the park and therefore are not included within the management zones of this management plan.

Bonus Army Encampment

In the summer of 1932, a "Bonus Army" of approximately 43,000 World War I veterans, their families, and affiliated groups from various parts of the country came to Washington, DC to petition Congress for immediate cash-payment redemption of their service certificates. Some of these "Bonus Marchers" camped on the Anacostia River flats in the Fairlawn–Twining area. Veterans and their families lived in shanties in the organized camp, which was called Camp Marks. After the Senate rejected the Patman Bonus Bill, President Herbert Hoover ordered General Douglas MacArthur to remove the unarmed veterans. General Douglas MacArthur and his troops forcibly removed them by burning their huts and tents. The camp and the fire were documented in a number of photographs and the images became synonymous with the "Bonus Army" and their efforts. While no physical remains of the camp are visible, the site is potentially significant due to its historical association with the camp and the events that followed (Katz et al. 2016).

NACE Headquarters and USPP Facilities

Located on Poplar Point, the buildings that now function as the NACE headquarters and USPP Anacostia Operations Facility were constructed in the 1940s for the US Navy Naval Receiving Station (NRS). The Naval Receiving Station occupied the 64-acre middle and eastern portions of Poplar Point from the 1940s through the 1960s. The site was used by the US Navy primarily as a training and intelligence center. Due to the buildings' age and history, the park plans to evaluate these buildings for their eligibility for listing in the National Register of Historic Places, as time and funding allows. The NACE headquarters building is a one-story building with a concrete slab-on-grade that currently houses NPS offices and administrative staff. Originally, this building was used as an NRS dispensary, but has undergone several renovations since its construction. The USPP Anacostia Operations Facility is a two-story structure with offices, training rooms, law enforcement operations, holding cells, and auditorium, an indoor firing range, and forensic laboratory. The building originally functioned as an NRS recreation building and ships store and was occupied from its construction in 1942 until 1961. The US Park Police fully renovated the building in 2001. Adjacent to the USPP Anacostia Operations Facility is a former NRS garage for the mine disposal school constructed in 1943, which contained motorcycle storage and dog kennels. The building is currently used by the US Park Police as a garage and storage building, though the dog kennels are no longer used. Associated with the USPP Anacostia Operations Facility is the USPP aviation hangar, which is located on the footprint of a 1943 NRS laundry building. The original building was demolished in 1961 and the aviation hangar was constructed in 2004 (AMEC 2013).

Ethnographic Resources

Fishing is a popular activity along the shores of the Anacostia River and many local residents fish for subsistence even though consuming fish from the Anacostia River poses a health risk due to contaminants (NPS 2016c). Though catch-and-release fishing is a popular activity in the area, the ethnographic resource of the Anacostia River is important as a food source for many local people and has been for generations. Archeological evidence shows that fishing along the Anacostia River for food was important and common to local people since 1500 BC (NPS 2016c). The National Park Service intends to complete further ethnographic studies in the future to evaluate community connections to the park. This section focuses on those who use the shores of the Anacostia River for subsistence fishing, for which an ethnographic study has been completed.

The ethnographic study, *Subsistence Fishing on the Potomac and Anacostia Rivers Interim Report 2016*, details information gathered about subsistence fishing on the Anacostia River through interviews with local fishermen (NPS 2016c). During the study, 75 percent of fishermen interviewed said they fish two to three days per week and nearly everyone said they fish once a week. Fishermen often fish in small groups of four or five people, and most fish with friends or family members. Fishermen interviewed said they fish to relax and because they enjoy the sense of community that it fosters. Though some fishermen reported some food insecurity, most do not fish because they cannot provide food otherwise; they are fishing because they enjoy the activity and the sense of pride in catching one's own meal. This study found that fishermen not only shared the experience of fishing with others, but often shared their catch with friends, family, and even strangers. Several fishermen interviewed for this study reported sharing their catch with friends and neighbors who are in need of food. Most people reported having learned to fish through family and there is a strong generational component among the fishing population along the Anacostia River. According to the study, though there is a diversity of people who fish along the Anacostia River, most people fishing were African-American men over 40-years-old who have been fishing there for 20 years or more. These subsistence fishermen are a committed group who have a long-term association with fishing and consuming the fish caught from the Anacostia River (NPS 2016c).

METHODOLOGY AND ASSUMPTIONS

Potential impacts on cultural resources are evaluated based on changes to character-defining features of the resources, which are the characteristics of a historic resource, cultural landscape, or ethnographic resource that qualify the resource for inclusion in the National Register. These features contribute to the property's integrity, which is composed of location, design, setting, materials, workmanship, feeling, and/or association. This approach is derived from both the *Secretary of the Interior's Standards for Rehabilitation of Historic Buildings* as well as the regulations of the Advisory Council on Historic Preservation (ACHP) implementing the provisions of Section 106 of the National Historic Preservation Act. The current conditions of cultural resources, as presented in the "Affected Environment" section, were compared with the alternatives described in chapter 2 to determine how cultural resources would be affected.

The resource-specific context for the evaluation of impacts on the cultural landscape includes the following:

- NPS *Management Policies 2006* dictates that the park "use, to the maximum extent feasible, historic properties available to it whenever operationally appropriate and economically prudent" (NPS 2006).
- The park is home to several documented historic structures, buildings, sites, and ethnographic resources, as well as several sites that have yet to be formally evaluated by the park but may hold cultural significance. The formally evaluated sites include the Kenilworth Aquatic Gardens, Langston Golf Course, Anacostia Park's cultural landscape, Anacostia Field House, Anacostia River Seawall, DC Water Poplar Point pump house, and the Anacostia River as an ethnographic resource. Structures and sites that have yet to be formally evaluated include the Bonus Army Encampment, NACE headquarters, and the USPP facilities.
- Cultural resources in the project area could be affected by relocation, destruction, major design changes, introduction of new structures or circulation, and the use of historically-incompatible materials and methods in repair and maintenance.

IMPACTS OF ALTERNATIVE 1: NO ACTION

Impact Analysis

Management actions associated with the no-action alternative (as described in chapter 2) would continue to have the potential to affect cultural resources that are either nominated to or potentially eligible for the National Register. These actions would generally be associated with maintenance of park facilities and continuation of existing park uses. Maintenance actions could include preservation of the lily and lotus ponds at Kenilworth Aquatic Gardens, mowing and trimming park grounds, trash removal (including water skimming), painting, as well as repairs and upkeep of plumbing and electrical systems. Maintenance actions that preserve the historic setting and landscape of the park's cultural resources would result in beneficial impacts. On the other hand, maintenance actions that result in changes to the visual appearance of the park's cultural resources could result in adverse impacts. If required, these actions would be pursuant to separate NEPA and NHPA compliance. Measures required to protect cultural resources would be identified, as necessary, during final design of potential management actions through Section 106 compliance activities in coordination with the DC State Historic Preservation Office. In the event that adverse effects could not be avoided, measures would be implemented to mitigate those effects. The continuation of current management practices would also continue to result in beneficial impacts on cultural resources because the existing management protocols would preserve and protect the park's cultural resources as time and funding allow.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting cultural resources under alternative 1 would include the construction of the proposed Anacostia Riverwalk Trail, the rehabilitation of Langston Golf Course, the management plan for wetlands and resident Canada geese, the potential 11th Street Bridge Park, the new DC United soccer stadium, the Poplar Point land transfer and redevelopment, and the transportation improvement projects adjacent to the park. Collectively, these actions have resulted or may result in both beneficial and adverse impacts on cultural resources.

Adverse impacts have or may result due to development and construction activities. For example, DDOT is constructing paved bicycle and pedestrian trails along the waterfront for the Anacostia Riverwalk Trail. This trail has and may result in adverse impacts due to the introduction of new visual elements, including a pedestrian bridge in the vicinity of Langston Golf Course. However, the areas where the trail has been and will be constructed have been previously developed and has and would be designed (in terms of color, materials, and scale) to minimize any visual impacts and not diminish the integrity of cultural landscapes within the park. The rehabilitation of Langston Golf Course would involve modernizing and improving facilities, including constructing a cover over the driving range, which could result in adverse impacts on the cultural landscape through the introduction of modern materials. However, the golf course has been previously modified and modern structures and materials are already present. Implementation of the management plan for wetlands and resident Canada geese may result in adverse impacts on cultural resources if seawall breaks and daylighting are undertaken. These actions could result in loss of historic materials and character of the Anacostia seawall. However, these actions would be assessed and mitigation measures determined in future compliance. The 11th Street Bridge Park has the potential to result in adverse impacts to cultural resources due to the addition of a new structure in the project area. However, the bridge would be located in a highly developed area with two existing bridges and would be on the footprint of a recently removed bridge, thus minimizing the impacts on cultural landscapes. When completed, the new soccer stadium for the DC United soccer team constructed in the Buzzard Point area would result in changes to the views from the park's overall cultural landscape in the direction of the stadium. The stadium would introduce built forms approximately 80 to 90 feet tall within view of parts of the park on the west shore of the river. However, this area has been previously developed and the change in view would not diminish the historic character. The land transfer and subsequent redevelopment of Poplar Point may result in adverse impacts on cultural resources if the cultural landscape, historic setting of, or views to and from cultural resources in the area are changed due to construction of mixed use development. Additionally, if the NACE headquarters and USPP facilities are determined to be eligible for the National Register, any demolition or changes that might occur during development could result in adverse impacts on these potential cultural resources. However, these buildings have been significantly altered for modern use and likely have little historic integrity remaining. The various transportation improvement projects adjacent to the park may result in adverse impacts on cultural resources by introducing modern materials into the cultural landscape and in the setting of historic structures, particularly the South Capitol Street project, which would be visible from Buzzard Point and Poplar Point, including the historic DC Water pump house. However, all of these projects would be located in areas previously developed, which would mitigate the adverse impacts.

Beneficial impacts have or may occur due to improved access to the waterfront. For example, DDOT is constructing paved bicycle and pedestrian trails along the waterfront for the Anacostia Riverwalk Trail. This may result in beneficial impacts on ethnographic resources by facilitating and improving access to the waterfront for traditional uses such as subsistence fishing.

When combining the impacts of these projects with the impacts of alternative 1, the cumulative impact on cultural resources would be both beneficial and adverse. Alternative 1 would contribute an imperceptible increment to the cumulative impact on cultural resources.

Conclusion

The no-action alternative would result in both beneficial and adverse impacts on cultural resources within the project area. Current management would often preserve and protect historic and cultural resources within the project area through routine maintenance. However, some of this routine maintenance, as well as some visitor use activities, could result in adverse impacts on cultural resources. In these cases, separate NEPA and NHPA compliance would be conducted if impacts are expected to occur. Under alternative 1, the park would continue to use available historic properties and the management actions would not result in any relocation, destruction, major design changes, new structures, or historically-incompatible materials and methods. Overall, the cultural resources in the project area would retain their historic integrity and character-defining features and would not result in any loss of historic significance. Therefore, the impacts under alternative 1 on cultural resources would not approach the level of significant.

IMPACTS OF ALTERNATIVE 2

Impact Analysis

Management actions under alternative 2 have the potential to result in both beneficial and adverse impacts on cultural resources within the park. Though specific development or construction projects would be determined during separate design phases, all would be pursuant to separate NEPA and NHPA compliance, as appropriate. Site-specific impacts are discussed below.

Kenilworth Aquatic Gardens

The Kenilworth Aquatic Gardens would be included within the community activities and special events zone, but surrounded by natural resource recreation zone, which would have beneficial impacts because the community activities zone would assist in the preservation of the aquatic garden's significance as an educational resource with its collections of water plants, fish, reptiles, and amphibians. The surrounding natural resource recreation zone would result in a beneficial impact because it would provide a natural backdrop for the aquatic gardens and ensure its historic setting and cultural landscape is preserved by limiting the types of facilities that could be constructed in the surrounding area.

Langston Golf Course Historic District

Alternative 2 would result in beneficial impacts on Langston Golf Course Historic District because its designation within the golf course management zone would ensure that the historical values of the golf course are preserved and interpreted. Under this management zone, the desired resource conditions would prioritize the preservation of the integrity and ambiance of cultural features, and the appropriate facilities defined for this zone would limit any development unrelated to golf activities.

Anacostia Park

Management actions under alternative 2 would result in both beneficial and adverse impacts on the cultural landscape of Anacostia Park. Areas designated as natural resource recreation zones would result in a beneficial impact by preserving and restoring the natural setting and landscape of these areas of the park, primarily in the Kenilworth Park and Woodland Preserve areas. Additionally, all zones containing

cultural resources would include preservation of those resources within the desired resource condition, which would result in a beneficial impact. However, management actions under alternative 2 would have a focus on a wide range of recreational activities, including development of expanded facilities. This future development would change some aspects of the cultural landscape, though specific details would be determined during future project planning and design phases. Changes to the cultural landscape of Anacostia Park would result in an adverse impact. However, all future development projects would require separate compliance and mitigation measures, as appropriate.

Anacostia Field House

Alternative 2 would result in beneficial impacts to the Anacostia Field House because its location within a designated community activities and special events zone would increase the potential for future preservation and interpretation of this site because part of this zone's purpose would be to provide opportunities to learn about the park's cultural resources. The desired resource conditions assigned to this zone includes the preservation and rehabilitation of historic structures. However, the appropriate facilities for this management zone would allow for a variety of development, which could have adverse impacts to the Anacostia Field House if future development changes the historic character of the building. However, all future development projects would require separate compliance and mitigation measures, as appropriate.

Anacostia River Seawall

The Anacostia River seawall would be located primarily on the edge of organized sport and recreation zones and community activities and events zones under alternative 2. Only in two small locations would it be located on the edge of the natural resource recreation zone and in one locations would it be located on the edge of the park administration and operations zone. Potential development near the seawall could result in adverse impacts to its historic setting. Additionally, to help rehabilitate wetlands, small portions of the seawall could be removed to encourage wetland function within the natural resource recreation zone. Specific locations for removal would be determined during future projects tiered to this management plan, and would be subject to additional compliance. This removal would result in a localized adverse impact on this historic structure due to the loss of historic material. However, preservation of historic resources is part of the desired resource condition of all management zones, and measures would be undertaken during future tiered projects, including reinitiating Section 106 consultation, to mitigate the adverse impact.

Poplar Point Pump House

Under alternative 2, the pump house would be located within an organized sports and recreation zone. This could result in adverse impacts to the historic building if the surrounding area is developed with facilities that are incompatible with the building's historic setting and character.

Bonus Army Encampment

Under alternative 2, the approximate location of the Bonus Army Encampment in the Fairlawn–Twining area would be in a combination of zones, though primarily in an organized sports and recreation zone. The location would also include sections of community activities and special events zones and small sections of natural resource zones. This could result in adverse impacts to the historic site if the surrounding area is developed with facilities that are incompatible with the historic setting. However, no

physical evidence of the Bonus Army Encampment exists and the known location is only approximate, so the site has already lost much of its historic integrity. The potential for educational facilities in the Fairlawn–Twining area could provide some interpretation of the historic events of this site and could result in beneficial impacts on this historic site.

Ethnographic Resources

Alternative 2 is not expected to have any impact on the Anacostia River as an ethnographic resource for subsistence fishing, as there would be no changes to fishing access along the shores of the river.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting cultural resources under alternative 2 would include the construction of the proposed Anacostia Riverwalk Trail, the rehabilitation of Langston Golf Course, the management plan for wetlands and resident Canada geese, the potential 11th Street Bridge Park, the new DC United soccer stadium, the Poplar Point land transfer and redevelopment, and the transportation improvement projects adjacent to the park. Collectively, these actions have resulted or may result in both beneficial and adverse impacts on cultural resources. Impacts of these actions are described under alternative 1. When combining the impacts of these projects with the impacts of alternative 2, the cumulative impact on cultural resources would be both beneficial and adverse. Alternative 2 would contribute an imperceptible increment to the cumulative impact on cultural resources.

Conclusion

Management actions under alternative 2 would have beneficial impacts on cultural resources because this alternative would designate management areas that would assist in the preservation and protection of these cultural resources, particularly the natural resources and recreation zone and the community activities and special events zone. However, though these zones would prioritize the preservation of cultural resources, they would also allow the rehabilitation of these resources as necessary to accommodate park operations. Potential rehabilitation efforts could result in adverse impacts on cultural resources if the historic character is changed. Any future preservation or rehabilitation of cultural resources would follow the Secretary of the Interior's *Standards for the Treatment of Historic Properties* and the National Park Service would reinitiate Section 106 consultation to mitigate any potential adverse impacts. Under alternative 2, the park would continue to use and maintain available historic properties, and the preservation of remaining cultural resources would continue to be a priority for the park as a whole. Though new structures may be constructed near cultural resources within the park, they would be designed to be historically-compatible where appropriate, or would be constructed in areas previously developed. Overall, the cultural resources in the project area would retain their historic integrity and character-defining features, and the actions under alternative 2 would not result in their loss of historic significance or eligibility for listing in the National Register. Therefore, the impacts of alternative 2 on cultural resources would not approach the level of significant.

IMPACTS OF ALTERNATIVE 3: NPS PREFERRED

Impact Analysis

The impacts under alternative 3 would be the same as under alternative 2 with the following differences.

Overall, alternative 3 would result in slightly greater beneficial impacts on cultural resources over alternative 2 due to the increased size of the natural resource recreation zone and the decrease in size of the organized sport and recreation zone and the community activities and special events zone. Because alternative 3 would have less acreage designated for zones allowing for the greatest level of new development, there would be a decreased potential for changes the historic setting of cultural resources, and therefore a decreased potential for adverse impacts. The increase in the natural resource recreation zone under alternative 3 would result in beneficial impacts on the cultural resources within and adjacent to this zone due the limited nature of appropriate facilities that could be developed in the natural resource recreation zone. The following describes differences in impacts under alternative 3 that would occur in specific locations or on specific resources.

Under alternative 3, because Langston Golf Course would be abutted by a natural resource zone along the shores of the Anacostia River, there would be a slight adverse impact on the historic site because it would restore the shoreline of the river to its natural state, rather than how the shore was historically developed as a golf course. However, these impacts would be very small in relation to the overall character and integrity of the golf course as a whole and the designation of a natural resource recreation zone would also protect the golf course from future development of inappropriate facilities.

As under alternative 2, the area of Poplar Point would be primarily designated as organized sport and recreation zone under alternative 3. However, under alternative 3, the shoreline would be designated as natural resource recreation zone, which is where the historic pump house is located. The natural resource recreation zone would limit the development and types of facilities that could be constructed around the historic structure, thus preserving its historic setting and resulting in a beneficial impact.

Under alternative 3, the Anacostia seawall's location would be within more acreage designated as natural resource recreation zone than under alternative 2. The natural resource recreation zone would limit the development and types of facilities that could be constructed around some parts the historic seawall, thus preserving its historic setting and resulting in a beneficial impact. However, small portions of the seawall could be removed to encourage wetland function, as described under alternative 2, resulting in a localized adverse impact due to the loss of historic material. Because more acreage would be dedicated to natural resource recreation zone, there could be more wetland reestablishment under alternative 3, and therefore, the adverse impact on the seawall could be greater than under alternative 2. However, preservation of historic resources is part of the desired resource condition of all management zones, and measures would be undertaken during future tiered projects, including reinitiating Section 106 consultation, to mitigate the adverse impact.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting cultural resources under alternative 3 would include the construction of the proposed Anacostia Riverwalk Trail, the

rehabilitation of Langston Golf Course, the management plan for wetlands and resident Canada geese, the potential 11th Street Bridge Park, the new DC United soccer stadium, the Poplar Point land transfer and redevelopment, and the transportation improvement projects adjacent to the park. Collectively, these actions have resulted or may result in beneficial and adverse impacts on cultural resources. Impacts of these actions are described under alternative 1. When combining the impacts of these projects with the impacts of alternative 3, the cumulative impact on cultural resources would be both beneficial and adverse. Alternative 3 would contribute an imperceptible increment to the cumulative impact on cultural resources.

Conclusion

Management actions under alternative 3 would have beneficial impacts on cultural resources because this alternative would designate management areas that would assist in the preservation and protection of these resources, particularly the natural resource recreation zone and the community activities and special events zone. However, though these zones would prioritize the preservation of cultural resources, they would also allow the rehabilitation of these resources as necessary to accommodate park operations. Potential rehabilitation efforts could result in adverse impacts on cultural resources if the historic character is changed. Any future preservation or rehabilitation of cultural resources would follow the Secretary of the Interior's *Standards for the Treatment of Historic Properties* and the National Park Service would reinitiate Section 106 consultation to mitigate any potential adverse impacts. Under alternative 3, the park would continue to use and maintain available historic properties, and the preservation of remaining historic resources would continue to be a priority for the park as a whole. Though new structures may be constructed near cultural resources within the park, they would be designed to be historically-compatible where appropriate, or would be constructed in areas previously developed. Overall, the cultural resources in the project area would retain their historic integrity and character-defining features, and the actions under alternative 3 would not result in their loss of historic significance or eligibility for listing in the National Register. Therefore, the impacts of alternative 3 on cultural resources would not approach the level of significant.

IMPACTS OF ALTERNATIVE 4

Impact Analysis

The impacts under alternative 4 would be the same as under alternative 3 with the following differences.

Overall, alternative 4 would result in greater beneficial impacts and decreased adverse impacts on cultural resources over alternatives 2 and 3 due to the increased size of the natural resource recreation zone as well as the decrease in size of the organized sport and recreation zone and the community activities and special events zone. For the same reasons discussed under alternative 3, these differences would result in increased potential for future preservation of cultural resources due to the limited nature of the appropriate facilities for future development in the natural resource recreation zone. The following describes differences in impacts under alternative 3 that would occur in specific locations or on specific resources.

Under alternative 4, the area of Poplar Point would have a greater area designated as natural resource recreation zone along the shoreline, and the remaining area would be designated as community activities

and special events, which would limit the development and types of facilities that could be constructed around the historic pump house, thus preserving its historic setting.

The Anacostia seawall would be located almost exclusively alongside natural resource recreation zones under alternative 4, which would have a beneficial impact of preserving the seawall's historic setting by limiting potential development along the shoreline and preventing construction of inappropriate facilities. However, small portions of the seawall could be removed to encourage wetland function, as described under alternative 2, resulting in a localized adverse impact due to the loss of historic material. Because more acreage would be dedicated to natural resource recreation zone, there could be more wetland reestablishment under alternative 4 than under alternatives 2 and 3, and the adverse impact could be greater. However, preservation of historic resources is part of the desired resource condition of all management zones, and measures would be undertaken during future tiered projects, including reinitiating Section 106 consultation, to mitigate the adverse impact.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting cultural resources under alternative 4 would include the construction of the proposed Anacostia Riverwalk Trail, the rehabilitation of Langston Golf Course, the management plan for wetlands and resident Canada geese, the potential 11th Street Bridge Park, the new DC United soccer stadium, the Poplar Point land transfer and redevelopment, and the transportation improvement projects adjacent to the park. Collectively, these actions have resulted or may result in beneficial and adverse impacts on cultural resources. Impacts of these actions are described under alternative 1. When combining the impacts of these projects with the impacts of alternative 4, the cumulative impact would be both beneficial and adverse. Alternative 4 would contribute an imperceptible increment to the cumulative impact on cultural resources.

Conclusion

Management actions under alternative 4 would have beneficial impacts on cultural resources because this alternative would designate management areas that would assist in the preservation and protection of these resources, particularly the natural resources and recreation zone and the community activities and special events zone. However, though these zones would prioritize the preservation of cultural resources, they would also allow the rehabilitation of these resources as necessary to accommodate park operations. Potential rehabilitation efforts could result in adverse impacts on cultural resources if the historic character is changed. Any future preservation or rehabilitation of cultural resources would follow the Secretary of the Interior's *Standards for the Treatment of Historic Properties* and the National Park Service would reinitiate Section 106 consultation to mitigate any potential adverse impacts. Under alternative 4, the park would continue to use and maintain available historic properties, and the preservation of remaining cultural resources would continue to be a priority for the park as a whole. Though new structures may be constructed near cultural resources within the park, they would be designed to be historically-compatible where appropriate, or would be constructed in areas previously developed. Overall, the cultural resources in the project area would retain their historic integrity and character-defining features, and the actions under alternative 4 would not result in their loss of historic significance or eligibility for listing in the National Register. Therefore, the impacts of alternative 4 on cultural resources would not approach the level of significant.

VISITOR USE AND EXPERIENCE

Anacostia Park is accessed by a variety of users for the purposes of different visitor experiences, including both passive and active recreation. Any proposed management actions have the potential to affect visitor use and experience through aesthetics of the park, opportunities for a variety of park uses, capacity of park facilities, and condition of the park facilities. Visitor access into and throughout the park also has the potential to affect the visitor experience. Visitors currently access and circulate through the park by various modes such as private vehicle, bicycle, foot, or public transportation. Currently, public access to and within the park is limited. Management actions proposed in this plan have the potential to affect the way visitors access the park and park facilities, including the waterfront. Visitor safety is also addressed under this impact topic because several sites within the park are undergoing investigation or remediation under the Comprehensive Environmental Response, Compensation, and Liability Act. These areas were contaminated in the past due to decades of landfill operations and dumping, industrial land uses, and improper handling of pesticides and herbicides. Any management actions involving the disturbance of soils and sediments in these areas have the potential to cause a secondary impact on human health and safety. Therefore, the impact topic of visitor use and experience is retained for further analysis.

AFFECTED ENVIRONMENT

Anacostia Park Users

Park resources within the areas that collectively define Anacostia Park offer a wide variety of visitor experiences to the public. The park is the second largest remaining area of open space in the District of Columbia, and offers visitors a range of different experiences, with both natural areas and developed facilities. Monthly and year-to-date visitation totals are maintained for Kenilworth Aquatic Gardens, Kenilworth, and Anacostia recreation visitors. According to these records, a total of 518,450 people visited these three areas in 2015 for recreational purposes (NPS 2016b).

Visitor experience opportunities vary from passive nature-based recreation activities to structured recreation and educational programs. While most of the park's day-to-day visitors live in nearby communities, many visitors come from throughout the region to participate in special events, regularly scheduled sports league play, sports tournaments, and boating activities. Some special attractions—such as Kenilworth Aquatic Gardens—attract visitors from around the country and from abroad. Park visitors cluster generally into six groups, as follows:

- Passive Recreation Users—including residents of nearby neighborhoods and their extended families that use the park for varied activities such as social gathering, picnicking, family reunions, play for children, informal sports play, walking, biking, fishing, community gardening, and contemplation
- Organized Sports Users—including members of sports leagues who routinely practice and play in tournaments on the sports fields at Fairlawn, Twining, and Poplar Point
- Athletes in Training—including active military personnel, the US Park Police, and individuals who use the park fields and park roads for workouts and aerobic training, typically during midday on weekdays

- Boaters—including Anacostia Rowing Club members, slip tenants at James Creek Marina, boat club members, and visitors who use the park to access the river for fishing, canoeing and kayaking
- Naturalists and Environmental Activists—including visitors who use informal trails through the park's woodlands, meadows, and wetlands to view wildlife and to seek solitude
- Educational and Cultural Program Visitors—including visitors who attend special programs in the park or who visit Kenilworth Aquatic Gardens

Anacostia Park Character and Visitor Experience

Visitors to the park reach the many attractions within the park by car, by bicycle, and on foot from local neighborhoods and elsewhere. Given the linear nature of the park and the barriers to circulation up and down the shoreline, visitors tend to enter one area of the park and stay there to pursue whatever activity attracted them. As a result, the current visitor experience depends largely upon the facilities and resources in the specific area of the park where the visitor arrives. The Anacostia Riverwalk Trail however, provides new connections for pedestrians and bicyclists to travel from one area of the park to another.

The area of most concentrated visitor use in the park, with the greatest development of park facilities, is the area on the southeast shore from the South Capitol Street Bridge upstream to the CSX Railroad Main Line, collectively including the Poplar Point, Fairlawn and Twining areas of the waterfront. The various areas within the park that are used by visitors include the following, which are described in further detail below:

- East Shore
  - Poplar Point
  - Fairlawn and Twining
  - Woodland Preserve, River Terrace
  - Kenilworth Park and Marsh
  - Kenilworth Aquatic Garden
- West Shore
  - Southwest Waterfront
  - James Creek
  - RFK Stadium Area
  - Langston Golf Course
  - West Waterfront Adjacent to National Arboretum

Following is a description of each sub-area that receives visitor use, including a discussion of visitation patterns, visitor experience, and interpretive programs.

Poplar Point, Fairlawn, and Twining

The 238-acre stretch of land along the southeast shore of the Anacostia River from South Capitol Street Bridge to the CSX Railroad bridge encompasses the original section of the park established as Anacostia Park in 1923. This heavily used part of the park is composed of three areas: Poplar Point, Fairlawn, and Twining. During some years when major special events have been held in the park—such as large concerts or races—recreation visits have increased. Generally, visitation is heaviest on summer weekends, with the busiest days being July 4th, Memorial Day, Labor Day, and Mother's Day. On holidays,

congestion on Anacostia Drive is a major problem. During periods of heavy use, US Park Police and off-duty officers cruising on motorcycles patrol the park.

Poplar Point. The Poplar Point area is currently in the process of being transferred to the District of Columbia and is one of the sites undergoing CERCLA investigation and remediation, as described under the "Soils" impact topic. Poplar Point encompasses the area from the South Capitol Street Bridge to the 11th Street Bridges. Major uses include NACE headquarters and the USPP Anacostia Operations Facility. The former site of the Architect of the Capitol's nursery is closed to public access to protect visitors from exposure to contaminated soils (see "Soils" impact topic above). The remainder of the area is primarily maintained as mowed meadows where people walk, gather, have picnics, or fish from the river's edge. This area of the park attracts naturalists and bird watchers to the wetlands that have developed since abandonment of the site offer habitat to a diverse population of birds. Visitation in the natural area of Poplar Point is relatively low, peaking at about 100 people per day on a summer weekend day.

Fairlawn. Fairlawn extends from the 11th Street Bridges upstream to the Pennsylvania Avenue Bridge. Developed facilities include the Anacostia Field House and Pool, both of which host a variety of sports and adult educational programs operated by the DC Department of Parks and Recreation. Other recreation facilities include nine tennis courts, two basketball courts, five playing fields, and a playground and picnic area.

This area is heavily used for sports play on weekends and on summer evenings. To maximize flexibility, the fields are not arranged for any particular sport. The fields are reserved and permitted by the National Park Service. One of the fields is always left open, allowing the community to have at least one field to play on. On an average summer weekend most of the fields (including those in Poplar Point and Twining as well) are in use. Baseball and soccer are the primary games played. The soccer season extends from April through October. In the evenings, the fields are primarily used for baseball. All ages use the fields although the primary age group is school age children. One field is routinely used for practice by the Armed Services Marching Band.

The tennis courts are managed by the DC Department of Parks and Recreation. Eight of the nine courts are permitted, for a small fee. One is kept open for general use. All are heavily used on weekday and weekend mornings until about 10:00 a.m. and from 3:00 p.m. until dark on spring and summer weekends. The basketball courts are used for pick-up games, with the greatest activity occurring in the morning during the summer months. The playground and picnic facilities are heavily used on warm afternoons and evenings and throughout the day on weekends.

Twining. Twining encompasses the area from the Pennsylvania Avenue Bridge to the CSX Railroad Main Line. The Anacostia Pavilion—the focal point of this area—is a multi-purpose sports complex that is primarily a roller skating arena. The Anacostia Pavilion can also be used to host a variety of special events such as concerts, dances, and special community programs. About 200 people per day visit the Anacostia Pavilion. The peak season is June through August.

Surrounding the Anacostia Pavilion are two playing fields, a playground, a large picnic area, basketball courts, a volleyball court, a comfort station, and paved parking areas. The playing fields are used on a permit basis. During the summer the north field is used almost every day, with the US Park Police

occupying it for training on many weekdays. The north field also includes a picnic area with a pavilion for which dawn to dusk daily permits are issued on most weekend days during the summer for group events, particularly family reunions.

A paved boat launch with parking for cars with boat trailers is adjacent to the Anacostia Pavilion on the water's edge. Use of the boat launch is relatively low, estimated at about 200 boats per year, and is only occasionally used for launching canoes and kayaks. This is probably due in part to lack of parking on busy summer weekends. Occasionally, the facility is used for bass tournaments, involving 30 to 40 boats.

Other special uses at Twining include the Aquatic Resource Education Center—operated by the DC Fisheries and Wildlife Division—and the Urban Tree House, which is a partnership project involving several federal and District of Columbia agencies and environmental groups. Both facilities host environmental education programs for schools and special groups. Historically, visitation has been low at the Aquatic Resource Education Center, confined largely to small school groups. In contrast, the Urban Tree House—operated by the Student Conservation Association—attracts approximately 5,000 visitors each year.

Woodland Preserve and River Terrace

The woodland preserve area encompasses approximately 43 acres located north of the CSX Railroad Main Line and south of the River Terrace neighborhood (figure 1). Vegetative cover includes unmanaged urban woodland—dense with invasive plants—as well as wetlands along the shoreline. The Anacostia Riverwalk Trail runs through this area. NPS facilities include a service road that links the upstream and downstream sections of the park. Illegal dumping has been a problem along the service road.

The River Terrace portion of the park is located north of the woodland preserve area and extends to Benning Road (figure 1). This area functions as a neighborhood park for local residents. Facilities include lighted basketball courts, tennis courts, multi-purpose playing fields, as well as a picnic facility, paved walking trail, and playground. Parking is available along the Anacostia Avenue at the park's edge. There is moderate traffic in this area due to the popularity of the Anacostia Riverwalk Trail.

The basketball courts are used almost continuously during the day and whenever the lights are left on from spring through early fall. One playing field is used by permit and can accommodate four baseball games at one time. The Congressional League is among the regular users of the fields. The baseball field with a backstop is not subject to permitting so that it can be available for use by the community. The tennis courts are rarely used. Local residents and a community church use the picnic facilities on most weekends. The church hosts community events twice a year at the park, attracting about 500 visitors to each event.

Kenilworth Park and Natural Areas

The Kenilworth Park area extends from Benning Road to the northern terminus of the park. The Kenilworth north and Kenilworth Marsh natural areas includes approximately 241 acres of wetlands and woodland along both sides of the river near the district boundary. This area of the park is remote and infrequently visited. Most visitors reach the area by canoe or kayak, putting in upstream at Bladensburg Waterfront Park or at Kenilworth Aquatic Gardens. The area includes Kenilworth Marsh, wetlands in the

Fort Lincoln area, and bottomland forest along the perimeter of Kenilworth Aquatic Gardens, and in the Beaverdam Creek drainage. Exclusive of the boardwalk in Kenilworth Marsh and the River Trail, there are no developed park facilities in the area.

Kenilworth Marsh is the largest wetland complex in the District of Columbia encompassing over 100 acres. It is located on the east bank of the river between the Kenilworth Aquatic Gardens, Kenilworth Park North, and the Anacostia River. A boardwalk with sitting areas and interpretive signage is located in the marsh beginning at the back end of the Kenilworth Aquatic Gardens ponds. In addition, the 0.7-mile River Trail can be accessed from the Kenilworth Aquatic Gardens. The trail runs through part of the marsh and provides access to a canoe put-in and potential fishing areas. During high tide it is possible to canoe in the marsh.

The Kenilworth Marsh Boardwalk sees about 200 visitors a month, year-round. During the school year, school groups are the predominant weekday users. Peak use occurs on weekends from March through September. Use of the River Trail is about 100 visitors per month, year-round. The biggest draw in this area is a canoe trail from Bladensburg to the confluence with the Potomac, where visitors can paddle the river with a map showing stopping points. Current use is approximately 400 to 500 canoeists and kayakers per year. The trail is managed by the Anacostia Watershed Society. In addition, approximately 30 other private boaters use the launch every year. Water trail access in this area is inaccessible during low tide, leading to relatively low use numbers.

Along the river front from Benning Road to Watts Branch, the riverfront is characterized by steeply sloping woodland. There is a small wetland area where Watts Branch discharges into the river. A managed meadow and restored wetland are located directly south of the maintenance yard and west of the PEPCO plant. These natural areas provide food and shelter for a variety of native wildlife species, and recreation in the form of fishing and wildlife observation for park visitors who enter the park from River Terrace and the Benning Road Bridge. The soil on the NPS land between the PEPCO plant and the Anacostia River is likely to be sampled as part of PEPCO's ongoing remedial investigation.

Kenilworth Aquatic Gardens

The Kenilworth Aquatic Gardens is a 14-acre site along the east bank of the Anacostia River (figure 1). It is the only National Park Service site devoted to the propagation and display of aquatic plants and water lilies. The Gardens are listed in the National Register, and have been designated a Category II Landmark by the Joint Committee on the Landmarks of the National Capital. Visitors arrive at a small visitor center where there are interpretive materials, including a guide to the Gardens. From the visitor center a trail leads visitors to the aquatic garden ponds and connects to the Kenilworth Marsh boardwalk (see below). Benches and sitting areas along the trail offer tranquil opportunities to rest and enjoy the setting. There is also a small nature center with exhibits about the local ecosystem and the garden ponds. Picnic tables are clustered in a grove of shade trees adjacent to the visitor center. The National Park Service does not issue permits for large groups to use the picnic area. A comfort station is available at the visitor center.

The interpretive program at Kenilworth Aquatic Gardens includes five interpretive themes: aquatic plants, aquatic animal life, natural history of the park, cultural history of the park, and environmental education. A full schedule of interpretive activities is offered by the park ranger/naturalist. Visitation at

Kenilworth Aquatic Gardens has declined significantly since its high in the mid-90s. Historically, Kenilworth Aquatic Gardens averages 10,000 summer visitors and 4,000 fall and spring visitors, with most of the fall and spring visitation coming from school groups. A few hundred visitors per month come to the aquatic gardens from November through March. On an average summer day, there are about 50 visitors to the gardens.

Southwest Waterfront

Anacostia Park includes approximately 8.5 acres along the riverfront at Southwest Waterfront, extending from Fort McNair to and including the old PEPCO Pump House (now the Earth Conservation Corps Center) between T and V Streets. The major uses include a park, a marina, and an environmental education center.

Buzzard Point Marina. The Buzzard Point Marina operated in the area until late 2015 when the concession agreement expired. Though currently closed, the marina is equipped with 88 slips with electricity, land storage for 85 to 100 trailers, a pump-out facility, a comfort station with bathrooms and shower facilities, and a small office.

James Creek Marina. James Creek Marina has 297 slips with electricity. Other facilities include a parking lot, bathrooms and showers, administrative offices, a picnic area that is available for public use, boat storage, fuel dock, and a pump-out facility. Guest Services, Inc. operates the marina under a concession agreement with National Park Service that began in 2008. Peak season for the marina is from April 15 to September 15, when the marina operates at an average 76 percent capacity. During the slow season, from September 15 to April 15, the marina operates at 42 percent capacity.

Matthew Henson Earth Conservation Corps Center. The Environmental Conservation Corps' Matthew Henson Earth Conservation Corps Center is located in the former PEPCO Pumphouse. It operates through a cooperative agreement that will expire in 2019. The Conservation Center is home to the Eagle Corps' raptor rehabilitation and research center, a native fish hatchery, Henson Community Park, and a community fishing pier and dock. The center offers education and training programs at the center, at schools, and on floating classrooms on the Anacostia River. The facility is busy all year, inside and out of the building. Members and students are from the Metropolitan Washington Region.

Between the marinas and Conservation Center, Anacostia Park includes a 40' wide strip of unimproved shoreline. From the Earth Conservation Corps Center to the former Buzzard Point Marina the shoreline is vegetated with trees and dense understory plants typical of disturbed urban environments. Between the former Buzzard Point Marina and the James Creek Marina, the park shoreline is located between the Coast Guard Building and the river and is not currently accessible to the public.

Other Areas in Southwest Waterfront. Also included in the park in the Southwest Waterfront area are two triangles of open space and a linear strip of open space along river between the Conservation Center and the former Buzzard Point Marina. The 0.4-acre triangle (US Reservation 296) on V Street is maintained in mowed grass with shade trees. The smaller triangle (US Reservation 297) at the intersection of South Capitol Street and Water Street has been incorporated into the street system and is not visible as parkland. The strip of land along between the Conservation Center and the former Buzzard Point Marina

(US Reservation 562) is not maintained, and is characterized by weeds, young trees that have seeded themselves, and trash.

RFK Stadium Area

The RFK Stadium Area encompasses approximately 59 acres along the Anacostia River shoreline from Benning Road to the CSX Railroad Main Line, as well as the upland area between the railroad and Congressional Cemetery along the RFK Stadium access road (figure 1). Uses include the river buffer, the DC Water Northeast Boundary Swirl Facility, and the RFK Stadium access road corridor.

River Buffer. The National Park Service retains ownership and management control of a narrow strip of shoreline encompassing approximately 43 acres along the Kingman Lake waterfront and the river between Benning Road and the CSX Railroad Main Line. Under the terms of the 1984 Act of Congress providing for the RFK Stadium lease (expiration 2038) with EventsDC (formerly the DC Sports and Entertainment Commission), the National Park Service maintains management control of a shoreline buffer between the stadium parking area and the river that is minimally 200 feet wide and serves as a riparian buffer. Much of this buffer has been set aside and reforested with native trees and shrubs. The buffer is intended to filter storm water prior to its discharge into the river and to maintain a visually pleasing park edge along the shore. In some places parking pavement has encroached on land that is within the designated buffer for which the National Park Service has retained management control.

A portion of the Anacostia Riverwalk Trail goes through this area and is used by visitors to the park. Local residents of Lincoln Park, Kingman Park, and other nearby neighborhoods also use the buffer informally. Visitors walk across the RFK Stadium parking lots or follow the trail to Kingman Island to reach the river. Along the waterfront they follow informal trails. Visitors fish from the shore where there are breaks in the shoreline vegetation. People going to events at RFK Stadium occasionally picnic or relax in the buffer area before events begin.

RFK Stadium Access Road Corridor. Adjacent to the RFK Stadium Access Road—between the CSX Railroad, Barney Circle, and Congressional Cemetery—there are approximately 13 acres of parkland, closed to recreational uses. The road is closed except during events at RFK Stadium when it is opened to provide regional access from I-395.

RFK Stadium Special Events Area. The land underlying RFK Stadium and adjacent parking areas is leased to the District of Columbia through the year 2038. The District of Columbia owns RFK Stadium. EventsDC is responsible for operation and maintenance of the stadium and land leased to the District of Columbia in accordance with the terms of the lease.

Langston Golf Course

The Langston Golf Course area of the park includes the golf course and portions of Kingman Lake, as shown on figure 1.

Langston Golf Course. Langston Golf Course encompasses approximately 145 acres located north of Benning Road and including portions of Kingman Island. Established in 1939, Langston Golf Course played an important role in the development and desegregation of public golfing. The course also aided in the

growth of golf as a popular recreational and professional sport among African Americans. In recognition of its historic significance, it is listed in the National Register (see the cultural resources section).

Langston Golf Course is an 18-hole, par-72 public course that also offers a golf school, golf shop, driving range, putting green, and snack bar. It is currently operated through a concession agreement with Golf Course Specialists, Inc. A major focus of the golf program is a golf school for adults as well as an extensive youth program that teaches area children of all ages the game of golf, as well as golf course management.

The course is open year-round from dawn until dusk every day except Christmas. Golfers of many ethnic backgrounds use the course, although it is traditionally played by African American golfers (NPS 1999). The peak season is from March through October. The remainder of the year is relatively slow. The busiest days on the course are Friday through Sunday during peak season when the course has about 250 to 300 golfers daily. Monday through Thursday during peak season brings 100 to 120 golfers daily. Golfers come from all over the city and are mostly adults. However, approximately 75 children use the course daily on summer weekdays from July through August.

Due to its limited facilities, Langston is approaching its maximum capacity, particularly with respect to facilities needed to support the youth golf program. In order to meet current and future demand, improvements to the facility are needed.

Langston Golf Course Natural Areas. In conjunction with the Kingman Lake restoration project, and in an effort to protect and allow public appreciation of the restoration, a wetland buffer has been installed between the lake and the golf course greens and fairways. The buffer prevents chemical and sediment runoff from the golf course into Kingman Lake, and contains native wildflowers and a variety of native trees and shrubs. The site provides habitat for birds, butterflies, and native pollinators.

Kingman Lake and Wetlands. Kingman Lake was created by dredging in the late 1920s and 1930s in order to create a recreational boating area. Kingman Lake once consisted of large areas of tidally influenced marsh. However, sedimentation in the Anacostia River turned the area into a mud flat. In 2000 the National Park Service, US Army Corps of Engineers, and DC Department of Health completed a joint project to restore over 40 acres of wetlands. Today the wetlands are an important wildlife habitat area. The site is presently not accessible to visitors, in large part due to danger from golf balls.

West Waterfront Adjacent to Arboretum

Anacostia Park includes approximately 11 acres of riparian buffer along the edge of the National Arboretum (figure 1). Varying from 60 to 100 feet in width, the buffer is generally wooded, except where it has been cleared and mowed (by the Arboretum) adjacent to its Asian Collection. An old woods road from M Street near Hickey Run provides non-maintained trail access for park visitors to the West Waterfront area. Otherwise visitors reach the waterfront as part of a visit to the Arboretum. A floating dock is available to tie up canoes and kayaks to facilitate access between the National Arboretum and the Anacostia River.

Visitor Safety at Anacostia Park

Several sites within the park are undergoing investigation or remediation under the Comprehensive Environmental Response, Compensation, and Liability Act. These areas were contaminated in the past due to decades of landfill operations and dumping, industrial land uses, and improper handling of pesticides and herbicides. Disturbance of soils and sediments in these areas have the potential to cause a secondary impact on visitor safety. For a complete description of the contaminated areas, see "Soils and Sediments" analysis above.

Visitor Access and Mobility

Anacostia Park stretches for 2.5 miles along either side of the Anacostia River, surrounded and crossed by major elements of Washington, DC's transportation system: a complex network of roads and bridges that carry thousands of vehicles each day into and out of downtown Washington, DC. While enhancing regional mobility, these transportation facilities limit, rather than enhance, local access to the park, acting as barriers that isolate the park and cut off access to it from adjacent communities and from the greater city. Access to the park—both locally and from the region—is poor. The Anacostia Freeway (I-295/DC-295), Suitland Parkway, and the CSX Railroad Blue Plains Spur Line create barriers along the river's east shore for the entire length of the park. I-395 and the CSX Railroad Main Line block connections along much of the west shore. Access is made more difficult from city neighborhoods—particularly on the west shore—by large institutional land uses, including the Washington Navy Yard, Congressional Cemetery, the DC Jail, the DC General Hospital, the Armory, RFK Stadium, the National Arboretum, Joint Base Anacostia-Bolling, and the PEPCO facility on Benning Road.

Visitors to the park—both from local neighborhoods and from the region—must navigate through this network of roadways to reach one of the ten park entrances that penetrate the many barriers to the waterfront. Pedestrian connections are few. Roadways and bridges—many on elevated structures or retained fills—generally lack safe sidewalks and connections from overhead structures down to the park along the waterfront.

Four main arteries cross the Anacostia River: South Capitol Street, Pennsylvania Avenue, East Capitol Street, and Benning Road. Because of the shortage of roadways crossing the Anacostia River, each of these major roads has become a major highway carrying large volumes of fast moving traffic, with wide interchanges, underpasses, overpasses, and tangles of lanes. In general, these roads do not encourage pedestrian or bicycle use because of narrow sidewalks and high vehicle speeds. The four bridges crossing the river in the vicinity of the park are tied to these high capacity, high-speed roadways and do not provide vehicular access to the waterfront area. Most of the interchanges at these bridges do not allow full traffic movements and none include direct access to the park.

Public transit on Metrorail and Metrobus serves city neighborhoods and highway corridors surrounding the park. In theory, the entire region is accessible to the park vicinity via transfers among Metrobus and Metrorail lines. Metrobus service is available near most of the park's eleven entrances. To get into the park and reach recreation destinations, however, requires walking from ½ to 1 mile or further. Numerous Metrorail stations are located near the park, but only the Anacostia Station is within comfortable walking distance of the park. Anacostia Station is adjacent to the park and approximately 1/4 mile from the river's edge. However, it is currently impossible to walk directly into the park from the station because a fence

separates the Anacostia Station parking structure from the park. A portion of the fence also serves to protect the public from exposure to soil contaminated from prior activities at the former sites of the Architect of the Capitol's nursery and the DC Lanham Nursery. To reach the park, visitors must either use Howard Road and walk around the station, a 20-minute walk, or use a gate that accesses the NACE headquarters and the USPP Anacostia Operations Facility.

Once visitors reach the park they tend to stay in the general area where they arrived. There are few park roads and park entrances and roads are isolated to specific areas and cut off from other parts of the park by railroads, bridge abutments, and elevated roadways. There are no NPS park road bridges connecting park areas on opposite sides of the river. There is no continuous route from north to south through the park. NPS roads serving the most heavily used park areas include Anacostia Drive (serving Poplar Point and the Fairlawn-Twining areas), and Deane Avenue (serving Kenilworth Park South). A park service road that is not open for public use connects the Fairlawn–Twining area with the River Terrace area.

For internal pedestrian circulation within the park, there are several formal trails, including a paved trail through the River Terrace area, the Kenilworth Aquatic Gardens Boardwalk, the River Trail from Kenilworth Aquatic Gardens to the Kenilworth Marsh inflow, the trail to Kingman Island from Oklahoma Avenue to the Kingman Island footbridge, and the Anacostia Riverwalk Trail, which is partially completed and is described under the "Past, Present, and Reasonably Foreseeable Actions" section. Other undesignated routes are used for walking by visitors, including NPS service roads and informal paths connecting recreation areas within the park. A few old paved paths connect Anacostia Drive and Howard Road to the Frederick Douglass Bridge ramps (South Capitol Street). Other undesignated routes are used for walking by visitors, including NPS service roads and informal paths connecting recreation areas within the park. A few old paved paths connect Anacostia Drive and Howard Road to the Frederick Douglass Bridge ramps (South Capitol Street).

METHODOLOGY AND ASSUMPTIONS

Potential impacts on visitor use and experience are evaluated based on changes to types and amount of visitor experiences, access and opportunities, as well as potential changes to visitor safety. Past interpretive and administrative planning documents provided background on changes to visitor use and experience over time. Anticipated impacts on visitor use and experience were analyzed using information from park staff and previous studies. The potential for changes to visitor use and experience was evaluated by assessing the limitation and assumed changes that would occur under each alternative and determining whether the projected changes would affect visitor experience. For this analysis, visitor use and experience includes visitor understanding and satisfaction, changes in viewsheds, visitor safety, and site access and circulation.

The resource-specific context for the evaluation of impacts on visitor use and experience includes the following:

- NPS *Management Policies 2006* states that enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks, and that the National Park Service is committed to providing appropriate, high-quality opportunities for the public to enjoy parks (NPS 2006).

- Recreational opportunities are considered to be one of the park's fundamental resources and values, as stated in the park's foundation document. The park strives to "provide a wide range of high quality outdoor recreational opportunities that meet the diverse green space needs of urban communities," and to support physical connections with the local neighborhoods for healthy communities (NPS 2016a).
- Visitor use and experience in the project area could be affected by management zoning decisions that provide varying types and amounts of recreational opportunities.

IMPACTS OF ALTERNATIVE 1: NO ACTION

Impact Analysis

Visitor Use and Experience

In the no-action alternative (figure 1), the areas on the east shore most heavily used by visitors would generally be retained, while on the west shore visitor uses would continue to be limited by less trail and road access, few developed park facilities, and infrequent maintenance of natural areas. Recreation, particularly organized sports play such as soccer, football, and softball, would continue to be a focus of the park. Existing fields throughout the park would be retained without major rehabilitation and existing facilities that provide boating access would be retained without any major improvements. No new boat launches or tie-ups would be constructed. Opportunities for cultural and educational experiences for visitors would remain the same.

Visitor Access and Safety

In the no-action alternative, improvements to park access would be limited to completion of the Anacostia Riverwalk Trail. Management actions (as described in chapter 2) would result in the continuation of adverse impacts on visitor use and experience as it relates to access and mobility because roads to, entrances into, and connections between areas of the park would continue to be disconnected and indirect. To access the park via one of the park entrances, visitors would continue to be required to walk 1/2 mile or more from public transportation or navigate off of major roadways onto local roads. For many this distance to public transportation is not convenient or possible, particularly if carrying equipment or for those with limited mobility. Drivers accessing the park would continue to experience congested city streets where signage is sometimes poor and where visitors unfamiliar with the area easily become lost.

Motorized travel within the park would continue to be possible only at Poplar Point and Fairlawn–Twining and travel within all other areas of the park would be limited to non-motorized travel, which could result in an adverse impact on visitors who prefer or need to travel via motorized vehicle, particularly for those with limited mobility.

Existing parking facilities in the park would remain in the current configuration and size. Minor improvements would be made to bring them up to NPS standards, as needed. At the Fairlawn–Twining area of the park it would continue to be impossible to meet the demand for parking on peak summer weekend days. In the no-action alternative, traffic on local roadways generated by park visitors would continue to have an adverse effect on local roadway and parking capacity. In the Poplar Point and

Fairlawn–Twining areas—where visitor-related traffic is heaviest—the existing visitor travel patterns and volumes in local neighborhoods on peak summer weekends would generally continue as they are today. Traffic counts and field observations performed during completion of the GMP indicate that visitor-related trips and on-street parking by park visitors is not a problem in terms of intersection and roadway capacity or in terms of parking availability (NPS 2003).

Existing facilities would be brought up to standard, making them generally safer for visitor use. US Park Police patrols would remain at existing levels unless changes to park visitation warrant a change.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting visitor use and experience under alternative 1 would include the construction of the proposed Anacostia Riverwalk Trail, the rehabilitation of Langston Golf Course, the management plan for wetlands and resident Canada geese, the Anacostia Watershed Restoration Plan, the potential 11th Street Bridge Park, the new DC United soccer stadium, the Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, transportation improvement projects adjacent to the park, and ongoing hazardous waste investigation or remediation activities. Collectively, these actions have resulted or may result in beneficial and adverse impacts on visitor use and experience.

Beneficial impacts have or may result from improvements to facilities, ecological restoration activities, and improved connectivity. For example, DDOT is constructing paved bicycle and pedestrian trails along the waterfront for the Anacostia Riverwalk Trail. This has and would result in beneficial impacts on facilitating improved non-motorized access to the waterfront and between different areas of the park. The rehabilitation of Langston Golf Course would improve the visitor experience by reducing the amount of ponding after heavy rain, allowing use of the driving range in any weather, improving the cart paths, and improving the restrooms. Implementation of the management plan for wetlands and resident Canada geese could result in beneficial impacts on visitor use and experience because some visitors' experience is disrupted by high number of geese and would prefer to experience a reduced number. Actions related to the Anacostia Watershed Restoration Plan could result in beneficial impacts on visitor use and experience if the values of wetlands and floodplains within the park are improved through restoration actions. Additionally, actions that include trash removal may result in an improvement to the perceived cleanliness of the Anacostia River, which could result in an improvement of the visitor experience. The 11th Street Bridge Park has the potential to result in beneficial impacts to visitor use and experience because it would provide a pedestrian connection between the east and west shores of the Anacostia River and provide additional opportunities for recreation within the park. Once completed, the DC Water Clean Rivers Project would result in beneficial impacts on the quality of the Anacostia River, which would in turn result in beneficial impacts on the visitor experience. Transportation improvements, particularly at the South Capitol Corridor and Kenilworth Avenue Corridor, would result in beneficial impacts because an improved access point for vehicles, bicyclists, and pedestrians would be created at Poplar Point. The transfer of land and subsequent redevelopment of Poplar Point could result in beneficial impacts because the redevelopment could include cultural institutions or other public spaces that visitors to the park may enjoy having nearby, which may result in an improved visitor experience. Investigation and remediation of contaminated sites could result in a beneficial impact on visitor use and experience if these sites are eventually made safe for park activities and they are restored and reopened for use.

Adverse impacts have or may result from development, management, and transportation improvement projects. For example, implementation of the management plan for wetlands and resident Canada geese could result in adverse impacts on visitor use and experience because some visitors like the geese and would prefer to continue to experience the existing number of geese in the park. Additionally, the scare and harassment techniques may include visual deterrents that may be aesthetically unappealing to some visitors. When completed, the new stadium for the DC United soccer team could result in adverse impacts on visitor use and experience for visitors to the Buzzard Point area of the park. Before, during, and after soccer games at the stadium, visitors to the park may experience increased traffic in the area, which may impact the experience of getting to or exiting from the park in Buzzard Point. Ongoing implementation of the DC Water Clean Rivers Project has resulted and would result in adverse impacts due to construction activities that have and will close some areas and reroute portions of the Anacostia Riverwalk Trail. However, these impacts would be temporary. Once operational, there would be some odor-producing releases when the tunnel would be filled during large storm events, which may detract from the visitor experience or discourage use of the affected area. However, these impacts would be temporary and odor control measures would be effective during dry conditions. The transfer of land and subsequent redevelopment of Poplar Point could result in adverse impacts if visitors are no longer able to access and use the land they desire to use at Poplar Point as they currently are able. The various transportation improvement projects adjacent to the park could result in adverse impacts related to construction activities, and may include visual and noise impacts do to use of machinery. Investigation or remediation of contaminated sites has required and would require closure of certain areas of the park to the public due to safety concerns, which has and may result in adverse impacts on visitor use and experience if visitors cannot access all areas of the park.

Combining the impacts of these projects with the impacts of alternative 1, the cumulative impact on visitor use would be both beneficial and adverse. Alternative 1 would contribute an imperceptible increment to the cumulative impact on visitor use and experience.

Conclusion

The no-action alternative would have both beneficial and adverse impacts on visitor use and experience within the project area. Current management has a beneficial impact by focusing on providing recreation opportunities for park visitors. Existing recreation facilities would continue to provide a wide range of high quality outdoor recreation opportunities and would continue to maintain a physical connection to the neighboring communities. Alternative 1 would contribute an imperceptible increment to the cumulative beneficial and adverse impacts on visitor use and experience. Therefore, the impacts under alternative 1 would not approach the level of significant.

IMPACTS OF ALTERNATIVE 2

Impact Analysis

Visitor Use and Experience

In alternative 2 (figure 2), recreational and educational opportunities would be expanded throughout the park, resulting in a long-term beneficial impact on visitor use and experience. This alternative offers the

most recreational and educational programming in order to draw visitors into the park. Existing water and land trail systems along the Anacostia River would be retained and enhanced in alternative 2, including the Anacostia Water Trail. Providing increased access to the water would have a beneficial impact on the visitor experience (see figure 2 for locations of potential additional trail route and access points for the Anacostia Water Trail). The National Park Service would continue to work with its partners to further develop these systems.

Looking at the visitor experiences provided by zones in this alternative, alternative 2 would provide 212 acres of organized sport and recreation space, as well as 204 acres of community activity space. In the organized sport zone, visitors would have expanded opportunities to participate in and spectate at formal sporting events as well as informal field sports. Visitors would also have opportunities to use informal recreational space adjacent to the formal fields, such as walking, jogging, exercising, and play activities. In the community activity zone, visitors would have additional opportunities to experience informal sports recreation and organized sports play, as well as cultural and educational special events such as concerts and festivals. Field and court space would provide opportunities for a wide range of visitor experiences.

In alternative 2, visitors would also have opportunities to experience recreation in a more natural setting in the natural resource recreation zone. Alternative 2 provides 352 acres in this zone, where visitors would use facilities such as unpaved trails and non-motorized boat launches. The emphasis of the visitor experience in this zone would be on recreating in a natural and moderately self-directed setting.

Alternative 2 also provides 167 acres of golf course zone. In this zone, the recreation experience would focus on the historic Langston Golf Course. Visitors of all ages would have opportunities for public golfing, as well as interpretive opportunities for the historic values of the Langston Golf Course.

In the short term, visitor use of recreation sites in alternative 2 may be temporarily disturbed if facilities are enhanced and expanded. This would result in a short-term adverse impact on visitor use and experience.

Visitor Access and Safety

Alternative 2 would also provide more convenient park access and connectivity with city neighborhoods through enhanced and expanded land and water trails, bicycle infrastructure, gateways and portals, public transit, and waterborne transportation. Public access to the river for boating would also be improved throughout the park by enhanced and expanded boat launches and boat tie-ups, and by potential new boat rental concessions and related facilities.

Impacts to visitor safety in alternative 2 would be limited to the effects of ongoing hazardous waste investigation or remediation in sites throughout the park. For more information, see cumulative impacts, above, as well as the soils section of this document.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting visitor use and experience under alternative 2 would include finishing construction of the Anacostia Riverwalk Trail, the rehabilitation of Langston Golf Course, the management plan for wetlands and resident Canada geese, the Anacostia

Watershed Restoration Plan, the potential 11th Street Bridge Park, the new DC United soccer stadium, the Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, transportation improvement projects adjacent to the park, and ongoing hazardous waste investigation or remediation activities. Collectively, these actions have resulted or may result in beneficial and adverse impacts on visitor use and experience and are described under alternative 1. When combining the impacts of these projects with the impacts of alternative 2, the cumulative impact on visitor use and experience would be both beneficial and adverse. Alternative 2 would contribute an imperceptible increment to the cumulative impact on visitor use and experience.

Conclusion

Alternative 2 would have beneficial and adverse impacts on visitor use and experience within the project area. Management under this alternative would have a beneficial impact by providing expanded developed recreation opportunities for park visitors. There would be short-term adverse impacts on visitor use during implementation of potential facility expansion or construction projects. The management zones would allow the park service to improve existing facilities and potentially create new recreational facilities that would provide a wide range of high quality outdoor recreation opportunities and maintain a physical connection to the neighboring communities. Alternative 2 would contribute an imperceptible increment to the cumulative beneficial and adverse impacts on visitor use and experience. Therefore, the impacts under alternative 2 would not approach the level of significant.

IMPACTS OF ALTERNATIVE 3: NPS PREFERRED

Impact Analysis

The impacts of alternative 3 on visitor use and experience would be the same as under alternative 2, with the following differences.

In alternative 3 (figure 3), the visitor experience would be focused on a mix of more developed recreation and natural recreation experiences, resulting in a greater beneficial impact on visitor use and experience due to the wider range of visitor experiences provided. Alternative 3 would provide less developed recreation space than alternative 2: 133 acres of organized sport and recreation space and 139 acres of community activity space. Alternative 3 would provide visitors a larger natural resource recreation zone than in alternative 2: 536 acres of natural-setting recreation opportunities. This could result in both a beneficial and adverse impact on visitor use depending on the desired activities of the individual park user. If a visitor prefers organized sports, alternative 3 could result in an adverse impact because there would be less space available for that activity than under alternative 2. However, this alternative could result in a beneficial impact for visitors who prefer nature-based recreation because there would be an increase in space for these activities over alternative 2.

Additionally, under alternative 3, Langston Golf Course would be abutted by a natural resource zone along the shores of the Anacostia River. This would slightly alter, but not negatively impact the visitor experience in the golf course zone. The golf course zone in this alternative would be smaller than in alternative 2, at 128 acres, due to the shoreline abutting the course being allocated to the natural resource zone in this alternative. The recreation experience of the zone itself would still focus on the historic

Langston Golf Course. Visitors of all ages would have opportunities for public golfing, as well as interpretive opportunities for the historic values of the Langston Golf Course.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting visitor use and experience under alternative 3 would include finishing construction of the Anacostia Riverwalk Trail, the rehabilitation of Langston Golf Course, the management plan for wetlands and resident Canada geese, the Anacostia Watershed Restoration Plan, the potential 11th Street Bridge Park, the new DC United soccer stadium, the Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, transportation improvement projects adjacent to the park, and ongoing hazardous waste investigation or remediation activities. Collectively, these actions have resulted or may result in beneficial and adverse impacts on visitor use and experience and are described under alternative 1. When combining the impacts of these projects with the impacts of alternative 3, the cumulative impact on visitor use and experience would be both beneficial and adverse. Alternative 3 would contribute an imperceptible increment to the cumulative impact on visitor use and experience.

Conclusion

Alternative 3 would have beneficial and adverse impacts on visitor use and experience in the project area. Management under this alternative would have a beneficial impact by providing a wide range of recreation opportunities for park visitors. There would be short-term adverse impacts on visitor use during implementation of potential facility expansion or construction projects. The management zones would allow the park service to improve existing facilities and potentially create new recreational facilities that would provide a wide range of high quality outdoor recreation opportunities and maintain a physical connection to the neighboring communities. Alternative 3 would contribute an imperceptible increment to the cumulative beneficial impact on visitor use and experience. Therefore, the impacts under alternative 3 would not approach the level of significant.

IMPACTS OF ALTERNATIVE 4

Impact Analysis

The impacts to visitor use and experience under alternative 4 would be the same as under alternative 3 with the following differences.

In alternative 4 (figure 4), the range of visitor experiences offered would be focused the natural recreation experience end of the spectrum, resulting in a less beneficial impact on visitor use and experience than alternative 3 due to the narrower range of visitor experiences provided. Alternative 4 would provide fewer acres of developed recreation space than either alternatives 2 or 3: 67 acres of organized sport and recreation space and 122 acres of community activity space. Alternative 4 would provide visitors the greatest amount of natural resource-based experiences of any alternative: 620 acres of natural-setting recreation opportunities. This could result in both a beneficial and adverse impact on visitor use depending on the desired activities of the individual park user. If a visitor prefers organized sports, alternative 4 could result in an adverse impact because there would be less space available for that activity

than under alternatives 2 and 3. However, this alternative could result in a beneficial impact for visitors who prefer nature-based recreation because there would be an increase in space for these activities over alternatives 2 and 3.

Additionally, as in alternative 3, under alternative 4, Langston Golf Course would be abutted by a natural resource zone along the shores of the Anacostia River. This would slightly alter, but not negatively impact the visitor experience in the golf course zone. The golf course zone in this alternative would be smaller than in alternative 2, at 128 acres, due to the shoreline abutting the course being allocated to the natural resource zone in this alternative. The recreation experience of the zone itself would still focus on the historic Langston Golf Course. Visitors of all ages would have opportunities for public golfing, as well as interpretive opportunities for the historic values of the Langston Golf Course.

Cumulative Impacts

Past, present, and reasonably foreseeable actions at the park affecting visitor use and experience under alternative 4 would include finishing construction of the Anacostia Riverwalk Trail, the rehabilitation of Langston Golf Course, the management plan for wetlands and resident Canada geese, the Anacostia Watershed Restoration Plan, the potential 11th Street Bridge Park, the new DC United soccer stadium, the Poplar Point land transfer and redevelopment, the DC Water Clean Rivers Project, transportation improvement projects adjacent to the park, and ongoing hazardous waste investigation or remediation activities. Collectively, these actions have resulted or may result in beneficial and adverse impacts on visitor use and experience and are described under alternative 1. When combining the impacts of these projects with the impacts of alternative 4, the cumulative impact on visitor use and experience would be both beneficial and adverse. Alternative 4 would contribute an imperceptible increment to the cumulative impact on visitor use and experience.

Conclusion

Alternative 4 would have beneficial and adverse impacts on visitor use and experience in the project area. Management under this alternative would have a beneficial impact by providing a focus on natural resource-based recreation opportunities for park visitors. There would be short-term adverse impacts on visitor use during implementation of potential facility expansion or construction projects. The management zones would allow the park service to improve existing facilities and potentially create new recreational facilities that would provide a wide range of high quality outdoor recreation opportunities and maintain a physical connection to the neighboring communities. Alternative 4 would contribute an imperceptible increment to the cumulative beneficial impact on visitor use and experience. Therefore, the impacts under alternative 4 would not approach the level of significant.

4

CONSULTATION AND COORDINATION

NPS Director's Order 12 requires the National Park Service to make "diligent" efforts to involve the interested and affected public in the NEPA process. This process, known as scoping, is initiated at the beginning of a NEPA project and helps to determine the important issues and eliminate those that are not; allocate assignments among the interdisciplinary team members and/or other participating agencies; identify related projects and associated documents; identify other permits, surveys, consultations, etc. required by other agencies; and create a schedule that allows adequate time to prepare and distribute the environmental document for public review and comment before a final decision is made. Typically, both internal and public (including agency) scoping is conducted to address these elements. This chapter documents the scoping process for the proposed action, identifies future compliance needs and permits, and includes the list of preparers for the document.

INTERNAL SCOPING

An internal scoping meeting to discuss the project was held on December 17, 2012. During this meeting the team discussed the park background, current usage and challenges, the purpose and need for the project, planning issues, and plans for public scoping and stakeholder coordination. The team also established roles and began discussions on impact topics and alternatives. The planning team continued to meet and hold discussions throughout the planning process. Additionally, on August 14 and 15, 2014, the study team conducted a CBA evaluation to weigh the different options and identify the NPS preferred alternative presented in this document. Additional information about the CBA process is included in chapter 2.

PUBLIC SCOPING

Public scoping for this environmental assessment was initiated to provide information and gather public feedback regarding potential alternative uses of the park, issues to be addressed, and impacts that need to be analyzed in the planning process. The National Park Service held an open public comment period from March 27, 2013 to April 29, 2013 and a public meeting on March 27, 2013. Three separate stakeholder meetings were held on April 17, 2013 for District of Columbia agencies, the Anacostia Watershed

Society/Kingfisher Water Trail Master Plan, and non-governmental organizations. Information was also posted to the park's Planning, Environment and Public Comment (PEPC) website. During the open comment period, a total of 36 correspondences were received, including from three stakeholder groups.

AGENCY CONSULTATION

The National Park Service initiated scoping with multiple relevant agencies early in the planning process. Scoping letters were sent out to various regulatory agencies and interested parties to inform them of the proposed action and/or initiate consultation. The park sent scoping information to the US Fish and Wildlife Service, National Marine Fisheries Service, Advisory Council on Historic Preservation, Washington, and the DC State Historic Preservation Office. This consultation is discussed in more detail below.

SECTION 7 OF THE ENDANGERED SPECIES ACT

In compliance with Section 7, the National Park Service sent a consultation letter to the US Fish and Wildlife Service requesting information on any special status species or critical habitats that may occur within the project area. In a letter dated December 7, 2016, the US Fish and Wildlife Service determined that no proposed or federally listed endangered or threatened species are known to exist within the project area. The National Park Service will reinitiate consultation in the unlikely event that any federally listed threatened or endangered species are encountered or if project plans change.

SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT

This environmental assessment evaluates impacts on cultural resources according to *NPS Management Policies 2006*. Compliance with Section 106 is being carried out separately but concurrently with the NEPA process. An agency consultation and Section 106 initiation letter for the project was sent to the Washington, DC State Historic Preservation Officer, dated March 15, 2013. Due to the lack of site-specific design, the National Park Service cannot fully assess the potential effects of the undertaking on historic properties. This management plan is part of the "nondestructive project planning" for prospective undertakings, and as such does not "restrict the subsequent consideration of alternatives to avoid, minimize or mitigate the [specific] undertaking's adverse effects on historic properties" in accordance with CFR § 800.1 (c). Accordingly, the National Park Service finds that no historic properties will be affected by the actions proposed in this management plan in accordance with 36 CFR 800.4 (d)(1). Further, the National Park Service commits to complete Section 106 review for each undertaking that may stem from this management plan in accordance with the Programmatic Agreement in development. A Programmatic Agreement has been drafted for review by Consulting Parties (Appendix A).

LIST OF PREPARERS

PREPARERS

VHB		
Jennifer Morrissey	Project Manager	Guidance of NEPA process; document review; and project management
Tracy Littell	Environmental Planner	Document preparation/coordination and review; and project management
Erin Leatherbee	Preservation Planner	Document preparation
Mariah Murphy	Environmental Scientist	Document preparation
Marty Beavers	GIS/Graphics	Conduct GIS analyses and prepare management plan figures
Neville Reynolds	Principal, Science	Document preparation and review, natural resource specialist
Joe Caterino	Senior Water Resources Engineer	Document preparation and review, natural resource specialist
Tim Davis	Senior Environmental Scientist	Document preparation and review, natural resource specialist
Tricia Wingard	Former NPS Program Manager	Guidance of NEPA process; document review; and project management
Jake Hoogland	NPS Market Leader	Document preparation
Oculus		
Rob McGinnis	Landscape Architect	Graphics preparation and chapter 2 preparation

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BIBLIOGRAPHY

55th Congress, 3d Session, House Document 87

1898 *Survey of Anacostia River.* Letter from the Secretary of War, transmitting a letter from the Chief of Engineers, Report of Survey of Anacostia River. Washington, DC.

AMEC Environment & Infrastructure, Inc. (AMEC)

2013 *Final Conceptual Remedial Investigation Scoping Document, Poplar Point, Southeast, Washington DC*. Chantilly, VA. May 2013.

Anacostia Watershed Restoration Partnership (AWRP)

2010 *Anacostia River Watershed Restoration Plan and Report, Final Draft*. February 2010.

Bromberg, Francine, Holly Heston, and Eugene Goodman

1989 *Anacostia/Barrys Farm Archaeological Survey Project: Resource Guide to the Prehistoric and Historic Period Occupations.* Washington, DC.

Council on Environmental Quality (CEQ)

1997 Considering Cumulative Effects under the National Environmental Policy Act.

District of Columbia, Department of Consumer Regulatory Affairs (DC DCRA)

1997 District of Columbia Wetland Conservation Plan. Washington, DC.

District of Columbia, Department of the Environment (DDOE)

2015 Anacostia River Sediment Project for a Cleaner Anacostia River Fact Sheet. March 2015.

District of Columbia, Department of Health (DC DOH)

2003 *District of Columbia Department of Health's Ongoing Anacostia River Restoration Efforts.* Washington, DC.

District of Columbia, Department of Transportation (DDOT)

2007 *Kenilworth Avenue Corridor Study*. Washington, DC. May 2007.

2012 *Pennsylvania Ave–Minnesota Ave Intersection Improvement Environmental Assessment Project Information*. Washington, DC.

2015a Anacostia Riverwalk Trail Fact Sheet. Sept 8, 2015.

2015b *Pennsylvania Ave–Minnesota Ave, S.E. Intersection Improvement Final Environmental Assessment and Finding of No Significant Impact*. Washington, DC. June 2015.

2016 Barney Circle and Southeast Boulevard Transportation Planning Study. Available online at https://www.anacostiawaterfront.org/awi-transportation-projects/barney-circle-southeast-boulevard/. Accessed July 6, 2016.

District of Columbia Water (DC Water)

2016 *Anacostia River Tunnel Project.* Available at https://www.dcwater.com/workzones/projects/anacostia_tunnel.cfm. Accessed June 28, 2016.

Engineering-Science, Inc. (ESI)

1989 *Anacostia Park from a Historical and Archaeological Perspective.* Washington, DC.

Federal Emergency Management Agency (FEMA)

2010a *Flood Insurance Rate Map, District of Columbia, Number 110001, Panel 0037, Suffix C.* Revised September 27, 2010. Washington, DC.

2010b *Flood Insurance Rate Map, District of Columbia, Number 110001, Panel 0038, Suffix C.* Revised September 27, 2010. Washington, DC.

2010c *Flood Insurance Rate Map, District of Columbia, Number 110001, Panel 0039, Suffix C.* Revised September 27, 2010. Washington, DC.

2010d *Flood Insurance Rate Map, District of Columbia, Number 110001, Panel 0057, Suffix C.* Revised September 27, 2010. Washington, DC.

2010e *Flood Insurance Rate Map, District of Columbia, Number 110001, Panel 0076, Suffix C.* Revised September 27, 2010. Washington, DC.

2010f *Flood Insurance Study: District of Columbia.* Washington, DC. Revised September 2010.

2016 *Flood Zones*. Available at http://www.fema.gov/flood-zones. Accessed July 7, 2016.

Haley & Aldrich, Inc.

2014 *Report on ASTM Phase I Environmental Site Assessment and Limited Phase II Subsurface Sampling, Potomac Avenue & 1st Street SW, Washington, DC.* September 9, 2014.

2015 *Revised Cleanup Action Plan, Voluntary Cleanup Program, Buzzard Point DC United Soccer Stadium Development, Washington, DC.* September 2015.

The Johnson Company

2016 *Supplemental Groundwater Study Report, Kenilworth Park Landfill*. Prepared for the National Park Service. November 18, 2016.

Katz, Gregory, John Bedell, Stuart Fiedel, and Daniel Wagner

2016 *Archeological Overview and Assessment of Anacostia Park and Kenilworth Park and Aquatic Gardens*. Washington, DC. Prepared by The Louis Berger Group, Inc. for the National Park Service.

MacCord, Howard A.
1957 Archaeology of the Anacostia Valley of Washington, D.C. and Maryland. *Journal of the Washington Academy of Sciences.* 47:393-397.

Mayre, William B.
1938 The Anacostin Fort. *Maryland Historical Magazine* 33(2).

National Capital Planning Commission (NCPC)
2006 *Memorials and Museums Master Plan.* December 2001. Amended 2006.

National Park Service (NPS), US Department of the Interior
1978 *National Register of Historic Places Inventory/Nomination Form—Kenilworth Aquatic Gardens.* Washington, DC.

1988a *Statement for Management Anacostia Park.* Washington, DC.

1988b *Statement for Management Kenilworth Park and Aquatic Gardens.* Washington, DC.

1991 *National Register of Historic Places Registration Form—Langston Golf Course Historic District.* Washington, DC.

1993 *Hydrologic Testing and Evaluation of Selected Wetlands in the Fort Lincoln Wetland Complex.* Washington, DC.

1999 *Langston Golf Course Concessioner Improvements Draft Environmental Assessment.* Washington, D.C.

2000 *Preliminary Assessment/Site Investigation of Kenilworth Park Landfill*. Washington, DC.

2002a Director's Order 28: *Cultural Resource Management Guideline*. NPS Office of Policy.

2002b Director's Order 77-1: *Wetland Protection*. NPS Office of Policy. October 30, 2002.

2002c *List of Classified Structures Update, 2002, National Capital Parks–East*. Washington, DC.

2002d *Examination Report: National Capital Parks Flood Control Project.* Washington, DC.

2002e "Poplar Point's Existing Wetlands, Wildlife, and Critical Habitat." (Memorandum from Stephen Syphax, National Park Service, Washington DC).

2003 *Anacostia Park Transportation Study*. Washington, D.C.

2004 *Anacostia Park: Anacostia Riverwalk Trail Environmental Assessment.* Washington, DC. December 2004.

2006 *Management Policies 2006*. National Park Service, US Department of the Interior.

2008a *National Register of Historic Places Registration Form—Anacostia Park.* Washington, DC.

2008b Procedural Manual #77-1: *Wetland Protection*.

2010 *Kenilworth Aquatic Gardens Cultural Landscapes Inventory*.

2011 Director's Order #12: *Conservation Planning, Environmental Impact Analysis, and Decision-making*. NPS Office of Policy.

2012 *Feasibility Study Report, Kenilworth Park Landfill, Northeast, Washington DC, National Capital Parks–East.* April 2012.

2013 *Proposed Plan for Cleanup of the Kenilworth Park Landfill Site*. February 2013.

2014 *Anacostia Park Wetlands and Resident Canada Goose Management Plan/Environmental Impact Statement*. Washington, DC. October 2014. Available at https://parkplanning.nps.gov/projectHome.cfm?projectID=18040.

2015a *NEPA Handbook.* September 2015.

2015b Washington Gas Site–Operable Unit 1, CERCLA–Activity–Site Restoration Community Fact Sheet. Fall 2015.

2016a Foundation Document for National Capital Parks—East. Washington, DC. September 2016.

2016b National Capital Parks East Year to Date Report for December 2015. Available at https://irma.nps.gov/Stats/SSRSReports/Park%20Specific%20Reports/Park%20YTD%20Version%201?Park=NCPE. Accessed May 31, 2016.

2016c *Subsistence Fishing on the Potomac and Anacostia Rivers. Interim Report 2016. Ethnographic Resource Study.*

N/A *National Capital Region Flood Plan*. Washington, DC.

National Resource Conservation Services, US Department of Agriculture (NRCS)

1976 *Soil Survey of District of Columbia.* Washington, DC.

2005 *Urban Soil Primer*. Lincoln, NE

2015 National Hydric Soils List 2015. Available at http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/. Accessed June 28, 2016.

2016 Web Soil Survey for Anacostia Park. Available at http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed June 28, 2016.

North Carolina Department of Environment and Natural Resources (NC DENR)

2010 *Draft North Carolina Ecosystem Response to Climate Change: DENR Assessment of Effects and Adaption Measures.*

Overbeck, Ruth Ann
1985 *Annotated Comprehensive Guide for the Washington Seawall: Volume 1 of 2.* Washington, DC.

Scisco, Louis D.
1955 The Indian Fort on the Anacostia River and Review of Anacostan Tribal History in the District of Columbia. Typescript in the Washingtoniana Collection of Martin Luther King, Jr. Public Library, Washington, DC.

Strange, E.M., A. Shellenbarger Jones, C. Bosch, R. Jones, D. Kreeger, and J.G. Titus
2008 *Mid-Atlantic Coastal Habitats and Environmental Implications of Sea Level Rise*. Section 3 in: Background Documents Supporting Climate Change Science Program Synthesis and Assessment Product 4.1, J.G. Titus and E.M. Strangs (eds.). EPA 430R07004. US EPA, Washington, DC.

Task Force on the Natural and Beneficial Functions of the Floodplain
2002 *The natural and beneficial functions of floodplains: reducing flood losses by protecting and restoring the floodplain environment.* A report for Congress. FEMA 409. Federal Emergency Management Agency, Washington, DC.

US Army Corps of Engineers (USACE)
1968 *Anacostia River and Tributaries, Local Flood Protection Project, Detailed Project Report*. Baltimore, MD.

1994 *Anacostia River and Tributaries: Draft Integrated Feasibility Report and Environmental Impact Statement.* Baltimore District, Baltimore, MD.

2005 *Washington D.C. and Vicinity Flood Emergency Manual.* Baltimore, MD.

US Department of the Interior, Bureau of Reclamation (USDI BR)
2002 *National Capital Parks Flood Control Project 2001 Joint Examination, and Literature Search and Review by National Park Service and Bureau of Reclamation*. Denver, CO (prepared by Wayne N. Young, Technical Service Center)

2004 *National Capital Parks Flood Control Project 2003 Conditions Survey Report Joint Examination by National Park Service and Bureau of Reclamation*. Denver, CO (prepared by Wayne N. Young, Technical Service Center)

US Department of Transportation (US DOT)
1983 *Barney Circle Freeway Modification Study (1-295) Final Environmental Impact* Statement Volume 1 of 2. Washington, DC.

US Fish and Wildlife Service (USFWS)
2016 IPaC Trust Resources Report for the Anacostia Park Management Plan project area. Available at https://ecos.fws.gov/ipac/. Accessed June 29, 2016.

Virginia Department of Conservation and Recreation (VA DCR)

2010 Vegetation Map for National Capital Parks–East: Anacostia, Fort Dupont, Fort Circle Parks, and others. July 14, 2010.

2011 Ecological Systems Map for National Capital Parks–East: Anacostia, Fort Dupont, Fort Circle Parks, and others. May 12, 2011.

Wagner, Daniel P.

2015 *Geoarchaeological Interpretations of Anacostia Park in Northeast and Southeast Washington, DC*. Prepared for Geo-Sci Consultants, LLC. October 13, 2015.

ACRONYMS

ACHP	Advisory Council on Historic Preservation
CBA	Choosing by Advantages
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet of water per second
DDT	dichlorodiphenyltrichloroethane
DO	Director's Order
DOH	Department of Health
EA	Environmental Assessment
ECC	Earth Conservation Corps
FEMA	Federal Emergency Management Agency
FS	feasibility study
MLW	mean low water
NACE	National Capital Parks–East
National Register	National Register of Historic Places
NCPC	National Capital Planning Commission
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum of 1929
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
PAH	polycyclic aromatic hydrocarbons
the park	Anacostia Park
PCB	polychlorinated biphenyls
PEPC	[National Park Service] Planning, Environment, and Public Comment
RI	remedial investigation
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service
USPP	United States Park Police
WASA	[District of Columbia] Water and Sewer Authority

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APPENDIX A

DRAFT PROGRAMMATIC AGREEMENT

PROGRAMMATIC AGREEMENT
AMONG
THE NATIONAL PARK SERVICE,
THE NATIONAL CAPITAL PLANNING COMMISSION,
AND
THE DISTRICT OF COUMBIA HISTORIC PRESERVATION OFFICER
REGARDING
THE ANACOSTIA PARK MANAGEMENT PLAN

This Programmatic Agreement ("Agreement") is made as of this ____ day of _____, 2016, by and among the National Park Service ("NPS"), the National Capital Planning Commission ("NCPC"), and the District of Columbia State Historic Preservation Officer ("SHPO"), (referred to collectively herein as the "Signatories" or individually as a "Signatory") pursuant to Section 106 of the National Historic Preservation Act ("NHPA"), 54 U.S.C. § 306108, NHPA's implementing regulations at 36 C.F.R. Part 800, and the provisions of 36 C.F.R. § 800.14(b) authorizing the negotiation of a programmatic agreement to resolve adverse effects from certain complex project situations.

WHEREAS, the United States Department of the Interior, National Park Service, National Capital Parks-East (NPS) proposes to implement the Anacostia Park Management Plan as described in Appendix 1 (the Undertaking) and in doing so must meet the requirements of Sections 106 and 110(f) of the National Historic Preservation Act (54 U.S.C. 306108 and 54 U.S.C. 306107, respectively); and

WHEREAS, the NPS consulted with the District of Columbia State Historic Preservation Officer (SHPO) pursuant to the November 14, 2008 *Programmatic Agreement among the National Park Service (U.S. Department of the Interior), the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers* and 36 CFR Part 800; and

WHEREAS, the NPS in consultation with the SHPO has identified the area of potential effect (see Appendix 2) and the historic properties within the area of potential effect that have the potential to be affected by the Undertaking (see Appendix 3); and

WHEREAS, the NPS and SHPO have determined that effects on historic properties cannot be fully evaluated prior to approval of the undertaking, and has developed this Programmatic Agreement (PA) to establish a process to assess and resolve potential adverse effects in accordance with 36 CFR Part 800.14(b)(1)(ii); and

WHEREAS, the NPS consulted with the Advisory Council on Historic Preservation (ACHP) regarding the PA and the ACHP by letter dated <<pending receipt>> declined to participate in consultations; and

WHEREAS, the National Capital Planning Commission (NCPC) will review implementation of the Undertaking pursuant to its authorities under the National Capital Planning Act of 1952 and will be a signatory to this PA; and

WHEREAS, the NPS provided for public involvement and considered alternatives to the Undertaking in the context of complying with the National Environmental Policy Act of 1969 (NEPA) pursuant to 36 CFR § 800.8;

NOW, THEREFORE, the NPS, NCPC, and SHPO, agree that the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the Undertaking on historic properties, and further agree that these stipulations shall govern the Undertaking and all of its parts until this PA expires or is terminated.

STIPULATIONS

I. PROFESSIONAL QUALIFICATIONS AND STANDARDS

(1) The NPS will ensure that all work that has the potential to have an effect, directly or indirectly, on historic properties is performed or supervised by qualified individuals and/or teams that meet the

Secretary of the Interior's Historic Preservation Professional Qualification Standards, 62 Fed. Reg. 33,707 (June 20, 1997), for history, architectural history, cultural anthropology, historic architecture and conservation, landscape architecture and/or archeology, as appropriate. Nothing in this stipulation may be interpreted to preclude NPS or any agent or contractor thereof from using the properly supervised services of persons who do not meet the professional qualification standards.

(2) Any inventory or documentation of historic properties pursuant to implementation of the PA shall conform to the provisions of the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR. 44716-44740) and any applicable standards and guidelines for historic preservation established by the SHPO.

(3) Curation of materials and records resulting from actions stipulated by this PA shall be curated in accordance with 36 CFR Part 79.

II. PROTECTION OF ARCHEOLOGICAL RESOURCES

Construction activities associated with implementation of the Undertaking could result in disturbance of known and/or previously unknown archeological resources. Prior to the implementation of any project component, the NPS will conduct identification and assessment of archeological resources consistent with the following measures.

1. The NPS, in consultation with the SHPO, will identify all surface areas that may be altered in any way by construction activities, to include any areas subject to permanent or temporary disturbance due to construction activities, staging and stock-piling, etc. Archeological surveys will be performed for those areas with the exception of any areas for which sufficient archeological information is already known or there is clear evidence that an area has been disturbed by previous activity to the extent that the presence of significant archeological resources is unlikely.
2. If an archeological survey is required, the NPS will consult with the SHPO to develop an efficient and effective survey methodology, ensuring that it is sufficient to generate information necessary to apply the National Register of Historic Properties criteria to any identified sites, consistent with the National Register Bulletin: *How to Apply the National Register Criteria for Evaluation.*
3. All archeological investigations will follow the *Guidelines for Archaeological Investigations in the District of Columbia* (1998, as amended) and the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (as amended and annotated).
4. As necessary, the NPS will schedule archeological surveys to reflect the phasing of construction activities, to ensure that survey activities and consultation on the identification, effects, and resolution of any adverse effects are completed well in advance of any construction related ground disturbance.
5. For archeological resources determined eligible for listing in the National Register, the NPS, in consultation with the SHPO, will develop treatment measures. Priority will be given to avoidance, provided that the long-term protection of the archeological site can be assured. If avoidance is not practical, NPS will undertake a data recovery plan for the recovery of archeological data from the site. Archeological treatment plans and/or data recovery plans will address research questions to be addressed through the data recovery or through other research means; methods to be used in the analysis, data management, and dissemination of data, including a schedule; and proposed disposition of recovered materials and records.
6. If human remains are discovered at any time during the implementation of the Undertaking, the agency shall follow the provisions of the Native American Graves Protection and Repatriation Act (25 USC § 3001) and state and local laws as appropriate.

III. REVIEW OF DRAFT SCHEMATIC DESIGN/DRAFT CONSTRUCTION DOCUMENTS

The NPS will submit draft schematic design documents and draft construction documents for all project components to the NCPC and SHPO for review and comment. Additional reviewers may be added at the discretion of the NPS.

The purpose of the reviews is to evaluate how project design and specifications may affect historic properties and to make recommendations on how the design might be improved and/or adverse effects avoided or minimized. Reviewers shall have 30 calendar days from the date of receipt to provide

comments to the NPS. If reviewers fail to respond within this time period, the NPS will assume the reviewers have no comments and will proceed to the next step in the design process.

At the request of reviewers, the NPS will provide for meetings to facilitate review of the draft schematic design documents and draft construction documents. NPS will document the outcome of all such meetings.

The NPS and all reviewers will strive diligently to work toward mutually agreeable outcomes on design issues addressed by the reviewers. If, during the course of reviews an impasse is reached, the signatories to this PA shall take steps to resolve the dispute through the provisions set forth in stipulation V of this PA.

IV. POST-REVIEW MODIFICATIONS

In the event that minor modifications in design or materials are required during construction, such modifications will be allowed under this PA provided that the changes are consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR Part 68) and are approved by the NPS. The NPS will document such minor modifications in an internal memorandum to the files that will be available for inspection by the NCPC and SHPO. Following construction, the NPS shall provide a summary memorandum listing the modifications to the NCPC and SHPO.

V. DISPUTE RESOLUTION

Should any signatory to this PA object in writing to the NPS regarding any action carried out in accordance with this PA, the signatories shall consult to resolve the objection as expeditiously as possible. Should the signatories be unable to resolve the disagreement, the NPS shall forward its proposed resolution of the dispute and any other documentation relevant to the dispute to the ACHP. Within thirty (30) days after receipt of all pertinent documentation, the ACHP shall either:

1. Advise the NPS that the ACHP concurs in the NPS's proposed resolution of the objection, whereupon the NPS shall notify the signatories executing this PA, and NPS shall resolve the objection accordingly; or
2. Provide the NPS with recommendations, which the NPS shall take into account in reaching a final decision to resolve the objection. The NPS shall notify the signatories executing this PA of its final decision.

The procedures outlined above shall apply only to the subject of the objection. The NPS's responsibility to carry out all actions under this PA that are not the subjects of the objection, and which do not foreclose the consideration of alternatives to resolve the objection, shall remain unchanged.

VI. AMENDMENTS

Any signatory to this PA may propose that the PA be amended, whereupon the signatories shall consult to consider such amendment. This PA may be amended only upon the written agreement of all signatories. The amendment shall be effective on the date a copy signed by all of the signatories is filed with the ACHP by the NPS.

VII. TERMINATION

(1) If any signatory proposes termination of this PA, the party proposing termination shall in writing notify the other signatories to this PA and the ACHP, explain the reasons for proposing termination, and consult with the other signatories and the ACHP, if it chooses to participate, to seek alternatives to termination.

(2) Should such consultation fail, the signatory proposing termination may terminate this PA by promptly notifying in writing the other signatories to this PA and the ACHP. Termination shall render this PA without further force or effect.

(3) Should this PA be terminated, the NPS shall consult in accordance with 36 CFR 800.6(b).

VIII. DURATION OF PA

Unless terminated pursuant to stipulation VII, the duration of this PA is ten (10) years from the date of its execution. If necessary, NPS shall initiate consultation with the other signatories to this PA approximately

one (1) year prior to the expiration date of this PA to reconsider its terms. Reconsideration may include the continuation or revision of this PA by amendment or termination.

IX. EFFECTIVE DATE OF PA

This PA shall take effect on the date the final signature is affixed to this PA.

X. ANTI-DEFICIENCY ACT

Any requirement for the payment or obligation of funds by the Government established by the terms of this PA shall be subject to availability of appropriated funds. No provision in this PA shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 USC Section 1341. If the availability of funds and compliance with the Anti-Deficiency Act impair the NPS' ability to perform under this PA, then the NPS shall consult in accordance with Stipulation VI of this PA.

EXECUTION of this PA, its subsequent filing with the ACHP, and implementation of its terms evidence that the NPS has taken into account the effects of this Undertaking on historic properties and has afforded the ACHP and the SHPO an opportunity to comment on the Undertaking and its effect on historic properties.

SIGNATORIES

National Park Service

_____ Date: _____
Tara Morrison
Superintendent, National Capital Parks-East

District of Columbia State Historic Preservation Officer

_____ Date: _____
David Maloney
District of Columbia State Historic Preservation Officer

National Capital Planning Commission

_____ Date: _____
Marcel C. Acosta
Executive Director, National Capital Planning Commission

APPENDIX 1
THE UNDERTAKING

Management zoning would be used throughout Anacostia Park to determine appropriate activities, levels of development, and visitor experience in park areas. For a description of the six management zones (Natural Resource Recreation Zone, Golf Course Zone, Organized Sport and Recreation Zone, Community Activities and Special Events Zone, Park Administration and Operations Zone, Special Use Zone) and to view a map depicting the management zones overlaying the park, please see the *Anacostia Park Management Plan/Environmental Assessment* (December, 2016) at (https://parkplanning.nps.gov/documentsList.cfm?projectID=43933.

The management zoning in Anacostia Park would balance the rehabilitation of natural areas with sports and recreation facilities to transform the park into one of Washington, DC's major recreational parks and a prime natural exploration area with enhanced river access and a gateway to the Anacostia River. Visitors would experience a revitalized park with enhanced opportunities for land and water-based active and passive recreation in a naturalized setting with a diverse river landscape. The existing water and land trail systems along the east and west shores of the Anacostia River would be retained and enhanced, and the NPS would continue to work with its partners to further develop these systems.

Facilities supporting sports play would be consolidated, with the current organized sports capacity retained or slightly expanded. The park would maintain facilities for neighborhood and regional recreation. No new major cultural facilities would be added, though programming for heritage tourism, natural area exploration, and park interpretation would be expanded.

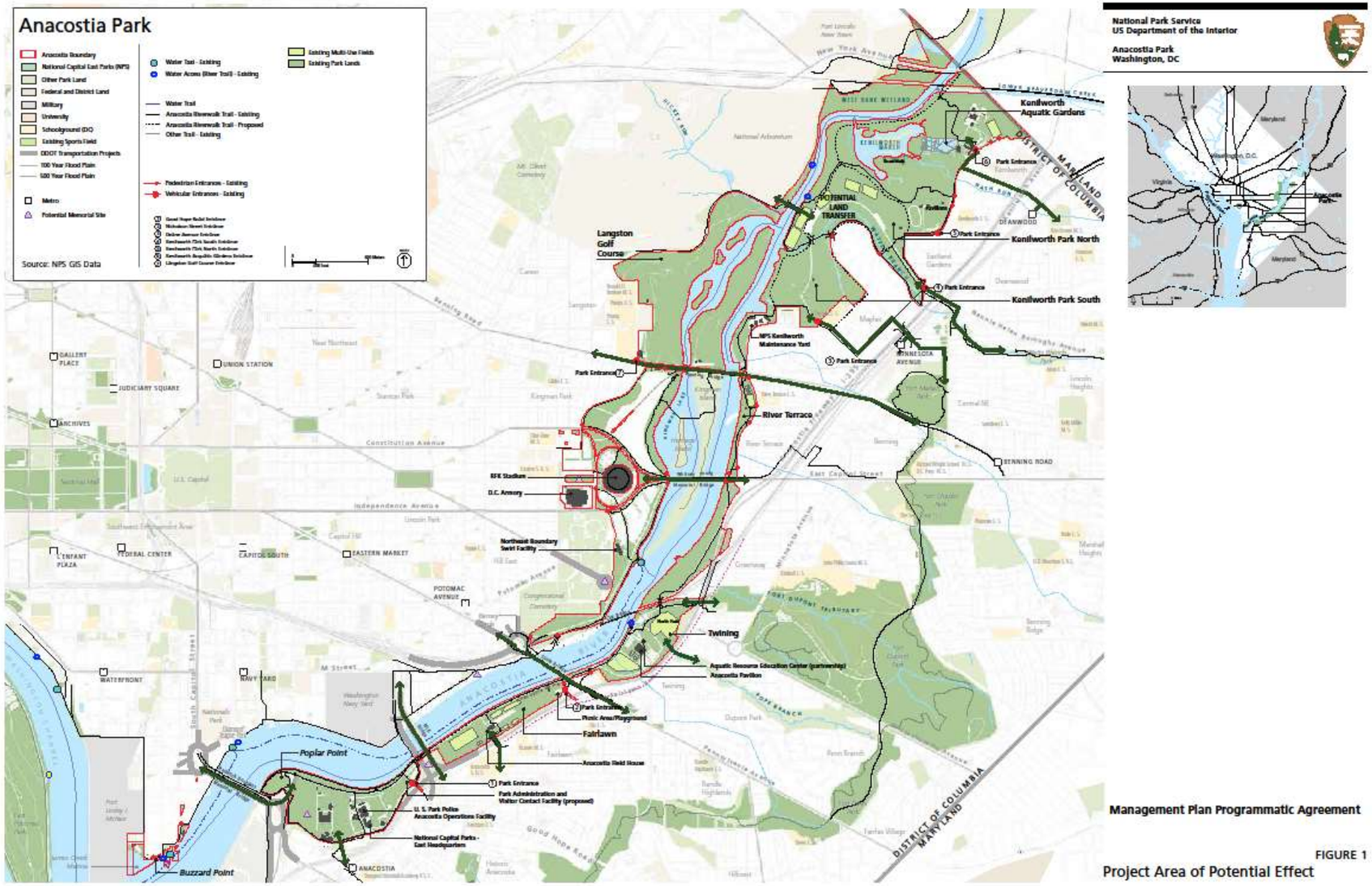
Concession food trucks and vendors would be permitted in designated areas. Public access to the river for boating would be enhanced throughout the park by providing boat launches, boat tie-ups, and sites potentially supporting concessioner-provided boat rental open to the public. More convenient park access and connectivity with city neighborhoods would be developed through enhanced and expanded land and water trails, bicycle infrastructure, gateways and portals, public transit, and waterborne transportation.

Environmental restoration would continue along the waterfront and along stream corridors, as well as areas within recreational zones. Natural areas would be restored in wide bands along riparian corridors and between more developed recreational zones to create a network of naturalized areas interwoven with more developed use-intensive areas.

Future memorials could be located in Anacostia Park based on the Memorials and Museums Master Plan (NCPC 2006) and incorporated into areas approved by the NPS.

APPENDIX 2
AREA OF POTENTIAL EFFECT

The area of potential effect includes all of Anacostia Park as depicted in the following figure.



National Park Service
US Department of the Interior

Anacostia Park
Washington, DC

Management Plan Programmatic Agreement

FIGURE 1
Project Area of Potential Effect

APPENDIX 3
HISTORIC PROPERTIES

Anacostia Park is home to several documented historic properties including historic places, cultural landscapes, ethnographic resources, and archeological sites. Additionally, there are several structures, sites, and objects located within the park that the park considers eligible for listing in the National Register of Historic Places but have yet to be formally evaluated by the National Park Service. The cultural resources—both formally evaluated and not—within the park boundaries are briefly described below.

Kenilworth Aquatic Gardens
Kenilworth Aquatic Gardens are located on the east shore of the Anacostia River and are composed of 44 lily and ancient lotus ponds formed by excavating the Anacostia floodplain and wetlands between 1892 and 1938. The aquatic gardens are listed in the National Register of Historic Places and are considered historically significant as a unique feature of Washington, D.C.'s park system, including important collections of water plants, and wild populations of fish, reptiles, and amphibians (NPS 1978).

In addition to the lily ponds and ancient lotus ponds, several original structures within the aquatic gardens contribute to the National Register listing. These structures include the administration building, the north and south greenhouse, and an original exterior lily tank, all built between 1912 and 1913.

In 2010, the National Park Service completed a cultural landscapes inventory for the Kenilworth Aquatic Gardens. According to this cultural landscapes inventory, this site's boundaries remain roughly, as they were at its acquisition by the National Park Service between 1939 and 1942. This site is unique as the only NPS resource dedicated entirely to the propagation and display of aquatic plants. It is nationally significant for its unique landscape and botanical, educational, and recreational contribution. The site retains a high level of integrity to its period of significance (1882 to 1938), including the historical views marked by overhanging hardwood trees and nearby buildings having undergone only minimal alterations from their original appearance.

Langston Golf Course Historic District
Langston Golf Course, which opened in 1939, encompasses approximately 145 acres of largely man made land along the shore of Kingman Lake. Langston Golf Course was listed in the National Register in 1991, and is historically significant for its association with desegregation of public golfing and recreational facilities in the greater Washington, D.C. area. It is also related to the growth of golf as a popular recreational and professional sport among black and African American people.

Anacostia Park
Anacostia Park has been determined eligible for listing in the National Register of Historic Places by the National Park Service and the D.C. State Historic Preservation Office. It is eligible because of its association with historic events including the 1932 Bonus Army marches and the desegregation movement, its design and architecture as part of the McMillan Plan, for the reclamation and construction of the seawall by the US Army Corps of Engineers, for the construction of park facilities by Works Project Administration workers, and as its potential for yielding both prehistoric and historic archeological sites

Specific historic properties within the park being treated as eligible include:

- Anacostia Field House constructed in 1932
- Anacostia River Seawall constructed between 1891 and the mid 1920s
- D.C. Water Poplar Point Pump House, a one-story masonry brick structure with a hipped roof constructed as part of the original WASA (now DC Water) sewer system draining southeast Washington
- Bonus Army Encampment - While no physical remains of the camp are visible, the site is significant due to its historical association with a 1932 protest by WWI veterans petitioning Congress for immediate cash-payment redemption of their service certificates

Archeological sites
The 2016 overview and assessment of archeological resources within Anacostia Park determined that a total of 47 sites, including 11 tentatively identified sites, are located within or adjacent to park property. Tentatively identified sites are those where artifacts have been recovered or sites that the DC State Historic Preservation Officer identifies as likely but of which affirmative surveys have not been completed. Of the 47 sites, 31 are prehistoric sties, two are historic era sites, and 14 have both prehistoric and historic components (NPS2016).

Ethnographic Resources
An ethnographic study, *Subsistence Fishing on the Potomac and Anacostia Rivers Interim Report 2016*, details information gathered about subsistence fishing on the Anacostia River through interviews with local fishermen (NPS 2016b). According to the study, although there is a diversity of people who fish along the Anacostia River, most people fishing were African-American men over 40-years-old who have been fishing there for 20 years or more. These subsistence fishermen are a committed group who have a long term association with fishing and consuming the fish caught from the Anacostia River (NPS 2016b).

As the nation's principal conservation agency, the Department of the Interior has responsibilities 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 American Indian reservation communities and for people who live in island territories under US administration.

NPS/ANAC/February 2017