



ENVIRONMENTAL ASSESSMENT

REPAIR AND CONNECTIVITY IMPROVEMENTS OF THE CIVIL WAR DEFENSES OF WASHINGTON HIKER-MOUNTAIN BIKER TRAIL



**National Capital Parks – East
Washington, D.C.**

December 2013

PROJECT SUMMARY

INTRODUCTION

National Capital Parks – East, an administrative unit of the National Park Service (NPS), in cooperation with the National Capital Planning Commission (NCPC), proposes to repair and improve connectivity of the Civil War Defenses of Washington (CWDW) Hiker-Mountain Biker trail. National Capital Parks – East includes 13 park sites, parkways, and statuary covering 8,000 acres of historic, cultural, and recreational parklands from Capitol Hill to the nearby Maryland suburbs. National Capital Parks – East manages the CWDW, which includes remnants of a complex system of Civil War fortifications. The CWDW was formally called “Fort Circle Parks.”

The proposed project area is the 7-mile Hiker-Mountain Biker trail located in southeast Washington, D.C., linking six of the CWDW forts — Fort Mahan, Fort Chaplin, Fort Dupont, Fort Davis, Fort Stanton, and Fort Ricketts — in Wards 6, 7, and 8 of Washington, D.C. The project would involve:

- installing up to four prefabricated bridges (replacements of existing bridges) and one new boardwalk
- constructing 11 sections of new trail to improve connectivity
- installing 28 new vehicle prevention structures
- resurfacing five areas of existing asphalt

This document demonstrates compliance with both the National Environmental Policy Act of 1969, as amended, and Section 106 of the National Historic Preservation Act of 1966, as amended.

PURPOSE OF AND NEED FOR THE ACTION

The purpose of the project is to repair damage and improve connectivity on several sections of the CWDW Hiker-Mountain Biker trail to enhance the safety and recreational experiences of visitors. Action is needed at this time because numerous sections of the trails throughout the park, although still usable, have deteriorated due to high visitor use, weathering, overgrown vegetation, and illegal motorized vehicle use. These deteriorated conditions are impacting park resources (e.g., through soil compaction and erosion).

Additionally, in several locations along the trail, the trail is located close to the existing roadway or sidewalk, but no formal connection exists. In these locations, social trails have formed. The action is needed to formalize these social connections and create paved sections of trail connecting the CWDW Hiker-Mountain Biker trail to the existing sidewalks or roadways.

OVERVIEW OF THE ALTERNATIVES

Two alternatives are addressed in this environmental assessment:

- Alternative 1: No Action
- Alternative 2: Repair, Reconstruct, and Improve Connectivity of the CWDW Hiker-Mountain Biker Trail (Preferred Alternative)

SUMMARY OF IMPACTS

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

HOW TO COMMENT

Agencies and the public are encouraged to review and comment on the contents of this environmental assessment from through January 15, 2014. We invite you to comment on this plan and you may do so by one of two methods. The preferred method of providing comments is on the park's planning website: <http://parkplanning.nps.gov/hikerbiker/>. You may also submit written comments to the following address:

Gopaul Noojibail, Acting Superintendent
National Capital Parks – East
Attn: CWDW Hiker-Biker Trail EA
1900 Anacostia Park, SE
Washington, D.C. 20020

Only written comments will be accepted. Please submit your comments by January 15, 2014.

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CHAPTER 1: PURPOSE AND NEED

INTRODUCTION

National Capital Parks – East, an administrative unit of the National Park Service (NPS), in cooperation with the National Capital Planning Commission (NCPC), proposes to repair and improve connectivity of the Civil War Defenses of Washington (CWDW) Hiker-Mountain Biker trail. National Capital Parks – East includes 13 park sites, parkways, and statuary covering 8,000 acres of historic, cultural, and recreational parklands from Capitol Hill to the nearby Maryland suburbs. National Capital Parks – East manages the CWDW, which includes remnants of a complex system of Civil War fortifications. The CWDW was formerly called “Fort Circle Parks.”

The proposed project area is the 7-mile Hiker-Mountain Biker trail located in southeast Washington, D.C., linking six of the CWDW forts — Fort Mahan, Fort Chaplin, Fort Dupont, Fort Davis, Fort Stanton, and Fort Ricketts — in Wards 6, 7, and 8 of Washington, D.C. The project would involve:

- installing up to four prefabricated bridges (replacements of existing bridges) and one new boardwalk
- constructing 11 sections of new trail to improve connectivity
- installing 28 new vehicle prevention structures
- resurfacing five areas of existing asphalt

A vicinity map of the project area is provided in figure 1.

The EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, and implementing regulations, 40 Code of Federal Regulations (CFR) Parts 1500–1508, NPS Director’s Order (DO) 12 and the handbook, *Conservation Planning, Environmental Impact Analysis, and Decision-making*. An environmental assessment (EA) analyzes the proposed action and alternatives and their impacts on the environment. Compliance with section 106 of the National Historic Preservation Act (NHPA) of 1966 has occurred parallel with the NEPA process.

PURPOSE OF THE ACTION

The purpose of the project is to repair damage and improve connectivity on several sections of the CWDW Hiker-Mountain Biker trail to enhance the safety and recreational experiences of visitors.

NEED FOR THE ACTION

Action is needed at this time because numerous sections of the trails throughout the park, although still usable, have deteriorated due to high visitor use, weathering, overgrown vegetation, and illegal motorized vehicle use. These deteriorated conditions are impacting park resources including soil compaction and erosion.

Additionally, in several locations along the trail, the trail is located close to the existing roadway or sidewalk, but no formal connection exists. In these locations, social trails have formed. The action is needed to formalize these social connections and create paved sections of trail connecting the CWDW Hiker-Mountain Biker trail to the existing sidewalks or roadways.

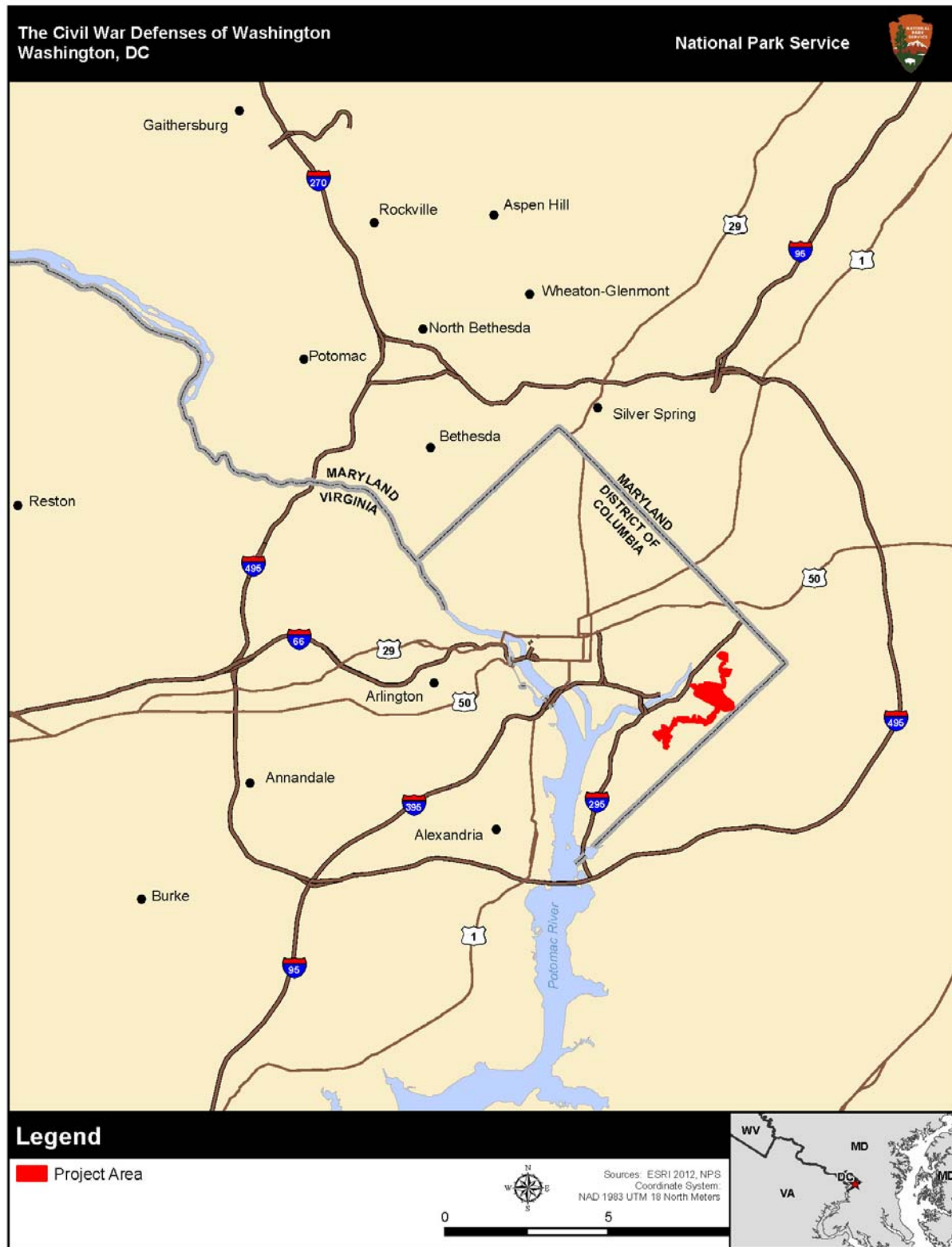


FIGURE 1. VICINITY MAP

BACKGROUND

The National Capital Parks – East section of the CWDW includes a series of protected open spaces along the hilltops southeast of the Anacostia River in the District of Columbia. The park holdings encompass the Civil War defense areas of Fort Mahan, Fort Chaplin, Fort Dupont, Fort Davis, Fort Stanton, Fort Ricketts, Fort Carroll, and Fort Greble, also referred to as Fort Circle Parks. Along with a link to the country's early history, these defense sites contain green space that received some of the earliest urban planning efforts related to public recreation in the United States (in the 1902 "Improvement of the Park System of the District of Columbia"), initially planned as the Fort Drive and later corroborated in the 1960s NCPC's recommendations emphasizing a "fort park system" that stressed recreation with a continuous "bicycle and pedestrian way." The importance of the historic earthworks and the greenbelt that these parks create along the ridge surrounding the city makes this a significant open space element in the nation's capital.

National Capital Parks – East staff initiated this planning project after recognizing the need to improve the connectivity of the Hiker-Mountain Biker trail. In the initial planning stages, it was determined by the NPS Washington Office level that connectivity of the trail system should include all of the CWDW. The NPS aims to connect all of the forts and green spaces that comprise the CWDW and this proposed project is a portion of that overall goal.

PURPOSE AND SIGNIFICANCE OF THE PARK

A park's enabling legislation typically defines purpose statements. Although the CWDW is not a specifically legislated unit of the national park system, it was acquired under broad legislative authorities and needs to be protected and preserved. The following purpose statements have been developed to guide management decisions for protecting the resources related to the system of forts and connecting corridors of the CWDW.

The purposes of the CWDW are as follows (NPS 2004a):

- To preserve and interpret historical resources related to the Civil War Defenses of Washington
- To conserve this linkage of urban green spaces that contribute to the character and scenic values of the nation's capital
- To provide recreational opportunities compatible with historic and natural resource values

Significance statements define the most important things about a park's resources and values, creating a tool for park managers to use in setting resource protection priorities and identifying primary park interpretive themes and desirable visitor experiences. The following significance statements for the CWDW reflect the importance of park resources (NPS 2004a):

- The park site contains remains of the defense sites (e.g., forts, batteries, rifles, and trenches) that effectively deterred the invasion of the nation's capital during the Civil War.
- The CWDW includes the remains of forts that were engaged in the Battle of Fort Stevens in July 1864 — the only Civil War battle in the District of Columbia and the only time a sitting U.S. president has come under enemy fire in warfare.
- The pattern (greenbelt) of public space of CWDW represents an element of one of the earliest urban planning efforts for public recreation in the United States (as first suggested in the 1902 *McMillan Commission Report* and the 1926–1927 *National Capital Park and Planning*

Commission Plan). Today, it enhances the aesthetics of the nation's capital and the quality of life for its citizens.

- The CWDW preserves significant natural features, including substantial acreage of mature native hardwood forest, geologic and aquatic resources, and a diversity of important habitat for indigenous flora and fauna that are unusual in an urban setting and that contribute to the uniqueness of the nation's capital.

SCOPING

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

On April 25, 2013, NPS staff held an internal meeting to identify key issues and potential impact topics and to discuss alternatives. The NPS initiated public scoping for this EA by issuing a public scoping notice on June 21, 2013. The scoping notice was posted to the NPS' Planning, Environment, and Public Comment (PEPC) website.

The public scoping comment period was open from June 21, 2013, to July 21, 2013. During this time, the NPS requested comments on the project via the NPS' PEPC website at <http://parkplanning.nps.gov/hikerbiker/> or sending written comments to the park.

No correspondence was received during the comment period.

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

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

APPLICABLE STATE AND FEDERAL LAWS

National Environmental Policy Act, 1969, as Amended

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

NEPA is implemented through Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500–1508) (CEQ 1978). The NPS has in turn adopted procedures to comply with the act and the CEQ regulations, as found in DO-12: *Conservation Planning, Environmental Impact Analysis, and Decision-making* (NPS 2001), and its accompanying handbook.

National Park Service Organic Act of 1916

By enacting the NPS Organic Act of 1916, Congress directed the U.S. Department of Interior and the NPS to manage units “to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations” (16 United States Code [USC] 1). Despite this mandate, the Organic Act and its amendments afford the NPS latitude when making resource decisions that balance resource preservation and visitor recreation.

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

National Historic Preservation Act of 1966, as Amended through 2000 (16 USC 470)

The NHPA of 1966, as amended through 2004, protects buildings, sites, districts, structures, and objects that have significant scientific, historic, or cultural value. The NHPA established affirmative responsibilities of federal agencies to preserve historic and prehistoric resources. Effects on properties that are listed in or eligible for the National Register of Historic Places (national register) must be taken into account in planning and operations. Any property that may qualify for listing in the national register must not be inadvertently transferred, sold, demolished, substantially altered, or allowed to deteriorate. Section 106 requires of the NHPA federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The historic preservation review process mandated by section 106 is outlined in regulations issued by ACHP. Revised regulations (Protection of Historic Properties [36 CFR Part 800]) became effective January 11, 2001.

Historic Sites Act of 1935

The Historic Sites Act declares as national policy the preservation for public use of historic sites, buildings, objects, and properties of national significance. It authorizes the Secretary of the Interior and NPS Director to restore, reconstruct, rehabilitate, preserve, and maintain historic or prehistoric sites, buildings, objects, and properties of national historical or archeological significance.

Archeological Resources Protection Act

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

National Parks Omnibus Management Act of 1998

The National Parks Omnibus Management Act (16 USC 5901 et seq.) underscores NEPA and is fundamental to NPS park management decisions. Both acts provide direction for articulating and connecting the ultimate resource management decision to the analysis of impacts, using appropriate

technical and scientific information. Both also recognize that such data may not be readily available and provide options for resource impact analysis should this be the case.

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

Redwood National Park Act of 1978, As Amended

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

Clean Water Act Section 404

Section 404 of the Clean Water Act regulates the placement of dredged and fill material into waters of the United States. The act authorizes the issuance of permits from the U.S. Army Corps of Engineers (USACE) for such discharges as long as the proposed activity complies with environmental requirements specified in section 404(b) (1) of the Clean Water Act. To grant a permit, the USACE must weigh the need to protect aquatic resources against the benefits of the proposed development. The USACE policy requires applicants to avoid impacts to waters of the United States and wetlands to the extent practicable, then minimize the remaining impacts, and finally take measures to compensate for unavoidable impacts.

Soil Erosion and Sedimentation Control Amendment Act of 1994 (D.C. Laws 10-166)

An erosion and sediment control plan would be prepared and implemented in accordance with the District of Columbia’s Soil Erosion and Sediment Control Handbook, which lays out standards and specifications for sediment and erosion control (District Department of the Environment [DDOE] 2003a). These guidelines also include direction on stream construction. The sediment and erosion control plan would include resource protection measures that conform to these standards and specifications, and would be submitted to the DDOE for approval.

2013 Rule on Stormwater Management Soil Erosion and Sediment Control

In 2013, DDOE released the new stormwater and erosion control rule as well as the 2013 Stormwater Management Guidebook (SWMG) for new stormwater management performance requirements in the District. The rule and SWMG are designed to significantly reduce stormwater pollution flowing into the Anacostia and Potomac Rivers, Rock Creek, and other District waterbodies by better capturing rainwater into the soil. The rule and SWMG improve equity in how the burden of stormwater management is allocated, provide flexible compliance options, and create a financial incentive for the voluntary installation of stormwater retrofits.

Energy Independence and Security Act Section 438

The Energy Independence and Security Act (EISA), Section 438, requires federal agencies to reduce stormwater runoff from federal development and redevelopment projects to protect water resources. Compliance can include use of a variety of stormwater management practices including reducing impervious surfaces and using vegetative practices, porous pavements, cisterns, and green roofs. EISA 438 compliance will be completed by NPS staff if alternative 2 is selected.

National Capital Planning Act (66 Stat. 781)

In 1952, the National Capital Planning Act established the NCPC, which functions as the federal government's central planning and development agency in the National Capital Region. The NCPC prepares the Comprehensive Plan for the National Capital Region and the five-year federal Capital Improvements Program and also reviews plans and programs proposed by federal, state, regional, and local jurisdictions and agencies. The NCPC is a cooperating agency on this project.

CapitalSpace Plan

CapitalSpace is a partnership of the NCPC, NPS, and District of Columbia to develop shared strategies for working together on parks and open space throughout the District. The final CapitalSpace Plan was adopted on April 1, 2010, with goals to improve parks and open space in the District and to create healthy and sustainable neighborhoods. Linking the Fort Circle Parks is a specific goal under this plan, which provides a history of the forts and addresses the current challenges of the sites as well as future opportunities (CapitalSpace 2010).

Capper-Cramton Act of 1930

The Capper-Cramton Act of May 29, 1930, as amended, called for the acquisition, establishment, and development of the George Washington Memorial Parkway along the Potomac from Mount Vernon and Fort Washington to the Great Falls, as well as to provide for the acquisition of lands in the District of Columbia and the states of Maryland and Virginia requisite to the comprehensive park, parkway, and playground system of the national capital. The Capper-Cramton Act, as it relates to the Fort Circle Parks, appropriated funds for the further acquisition of "such lands in the District of Columbia as are necessary and desirable for the suitable development of the National Capital park, parkway, and playground system." This EA evaluates impacts on properties whose acquisition was authorized by the Capper-Cramton Act.

EXECUTIVE ORDERS AND DIRECTOR'S ORDERS***Executive Order 13508 "Chesapeake Bay Protection and Restoration"***

This executive order developed a Federal Leadership Committee to develop recommendations for how to restore and protect the nation's largest estuary and its watershed. Part of these recommendations include how the Department of the Interior, including the NPS, can expand public access to the Bay, expand environmental research, monitoring and observation, and develop focused and coordinated habitat and research activities that protect and restore living resources and water quality.

Executive Order 11593, "Protection and Enhancement of the Cultural Environment"

This executive order directs the NPS to support the preservation of cultural properties and to identify and nominate to the national register cultural properties in the park and to "exercise caution . . . to assure that any NPS-owned property that might qualify for nomination is not inadvertently transferred, sold, demolished, or substantially altered."

Executive Order 11990, "Protection of Wetlands"

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

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

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

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

Director's Order 28: Cultural Resource Management

DO-28 (NPS 1998a) calls for the NPS to protect and manage cultural resources in its custody through effective research, planning, and stewardship and in accordance with the policies and principles contained in the NPS' *Management Policies 2006* (NPS 2006). This order also directs the NPS to comply with the substantive and procedural requirements described in the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*, the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Treatment of Cultural Landscapes*, and the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings*. Additionally, the NPS would comply with the 2008 NPS Programmatic Agreement with the ACHP and the National Conference of State Historic Preservation Officers (NPS 2008a). The accompanying handbook to this order addressed standards and requirements for research, planning, and stewardship of cultural resources as well as the management of archeological resources, cultural landscapes, historic and prehistoric structures, museum objects, and ethnographic resources.

Director's Order 77-1: Wetland Protection

As part of the *Natural Resource Management Reference Manual 77*, the NPS developed DO 77-1: *Wetland Protection* (NPS 2012a) to establish NPS policies, requirements, and standards for implementing Executive Order 11990, "Protection of Wetlands." DO 77-1 established the NPS adoption of a "no net loss of wetlands" goal as well as the adoption of the Cowardin et al. (1979) classification system for defining, classifying, and inventorying wetlands.

Natural Resource Management Reference Manual 77

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

McMillan Commission Report

The 1902 McMillan Commission Report to Congress proposed creation of a "Fort Drive" to connect the Civil War circle of forts and earthen fortifications surrounding the city of Washington. This was to be a modern roadway through a landscaped corridor providing leisurely access to each fort site. In 1902, the drive would have been outside the city. Since the initial concept of a roadway, the idea has been refined by subsequent NCPC and NPS planning processes to be a series of connecting green spaces, which is more fully summarized in the description of the *Fort Circle Parks Final General Management Plan* (NPS 2004a).

Comprehensive Plan for the National Capital, Federal Elements

The *Comprehensive Plan for the National Capital: Federal Elements* (NCPC 2004) is the principal planning document adopted by NCPC for the planning of federal facilities. This comprehensive plan contains goals, objectives, and planning policies for the growth and development of the nation's capital. It looks to the L'Enfant and McMillan Plans to preserve and enhance the image and identity of the national capital region. The comprehensive plan calls for the federal government to preserve the important scenic, historic, and natural elements for the CWDW. Furthermore, the comprehensive plan states that the federal government should complete the Fort Circle Parks trail system as a continuous trail, linking the historic Civil War Fort sites within the District of Columbia. Existing street rights-of-way should be used when necessary to connect the various sections of the CWDW. Regarding historic properties, the comprehensive plan calls for the federal government to sustain exemplary standards of historic property stewardship.

National Park Service Management Policies 2006

The NPS' *Management Policies 2006* (NPS 2006) is the basic NPS-wide policy document, adherence to which is mandatory unless specifically waived or modified by the NPS Director or certain departmental officials, including the U.S. Secretary of the Interior. Actions under this EA are in part guided by these management policies. Sections that are particularly relevant to this project are as follows.

Section 5.3.1, Protection and Preservation of Cultural Resources

The NPS will endeavor to protect cultural resources against overuse, deterioration, environmental impacts, and other threats without compromising the integrity of cultural resources (NPS 2006).

Section 5.3.5.2, Cultural Landscapes

The treatment of cultural landscapes will preserve significant physical attributes, biotic systems, and uses when those uses contribute to historical significance. Treatment decisions will be based on a cultural landscape's historical significance over time, existing conditions, and use. The three types of treatment for cultural landscapes are preservation, rehabilitation, and restoration (NPS 2006).

Section 8.2.5.1, Visitor Safety

The NPS strives to protect human life and provide for injury-free visits. As a result, the NPS will apply national safety codes and standards to prevent injuries or recognizable threats to visitor safety and will reduce or remove known hazards. Examples of visitor safeguards include the installation of artificial lighting or paved walking surfaces (NPS 2006).

Section 9.2.2 Trails and Walks

Trails and walks provide the only means of access into many areas within parks. These facilities will be planned and developed as integral parts of each park's transportation system and incorporate principles of universal design. Trails and walks will serve as management tools to help control the distribution and intensity of use. All trails and walks will be carefully situated, designed, and managed to reduce conflicts with automobiles and incompatible uses; allow for a satisfying park experience; allow accessibility by the greatest number of people and protect park resources (NPS 2006).

NATIONAL PARK SERVICE PLANS AND POLICIES

Fort Circle Parks Final General Management Plan

The purpose of the Management Plan for the Fort Circle Parks of Washington, D.C. (NPS 2004a) is to provide a unified management concept for the significant historic resources associated with the CWDW that will allow these resources to be preserved for future generations and interpreted in a coherent, easily

understandable manner. This includes the management of cultural and natural resources, visitor use and development, park operations, and land use.

Final Rule: Vehicles and Traffic Safety – Bicycles

This rule amends the previous regulations for designating bicycle routes and managing bicycle use within park units throughout the national park system. It authorizes park superintendents to open existing trails to bicycle use within park units under specific conditions, in accordance with appropriate plans and in compliance with applicable law. It also retains the current requirement for a special regulation to authorize construction of new trails for bicycle use outside developed areas.

ISSUES AND IMPACT TOPICS

Issues describe problems or concerns associated with current impacts from environmental conditions or current operations as well as problems that may arise from the implementation of any of the alternatives. Park staff identified potential issues associated with the repair and connectivity improvements during internal scoping. The issues and concerns identified during scoping were grouped into impact topics that are discussed in “Chapter 3: Affected Environment” and are analyzed in “Chapter 4: Environmental Consequences.”

IMPACT TOPICS ANALYZED IN THIS ENVIRONMENTAL ASSESSMENT

SOILS

The proposed trail repairs and improvements could have direct impacts to soils from ground-disturbing activities during construction; however, lack of maintenance has already resulted in impacts to soils due to erosion, destabilization, and heavy visitor use. As a result of potential impacts to soils that could occur from both the no action alternative and action alternatives, this resource area is addressed as an impact topic in this EA.

HYDROLOGY AND WATER QUALITY

Reconfiguration of the trail could impact stormwater runoff patterns. Current trail conditions show erosion and rutting on the trails because of the design, lack of maintenance, and stormwater impacts. Soil eroding from the trail is currently impacting the Anacostia River watershed, and the proposed trail improvements would repair erosion and stabilize impacted areas. As a result of potential impacts to hydrology and water quality that could occur under both alternatives, this resource area is addressed as an impact topic in this EA.

WETLANDS

One proposed project area is located directly adjacent to a potential palustrine wetland. Because of the potential for both adverse and beneficial impacts associated with the proposed alternative, wetlands is a resource topic that has been carried forward for analysis. A wetlands statement of findings is not required for this project because foot/bike trails and boardwalks with impacts less than 0.1 acre of fill placement are an excepted action under *Procedural Manual #77-1: Wetland Protection* (NPS 2012b).

CULTURAL RESOURCES

The NHPA (16 USC 470 et seq.), NEPA, Organic Act, the NPS' *Management Policies 2006* (NPS 2006), DO-12: *Conservation Planning, Environmental Impact Analysis and Decision-making*, and NPS-28, *Cultural Resources Management Guideline*, require the consideration of impacts on any cultural resources that might be affected. The NHPA, in particular, requires the consideration of impacts on cultural resources either listed in, or eligible to be listed in, the national register. Cultural resources include archeological resources, cultural landscapes, historic structures and districts, ethnographic resources, and museum collections (prehistoric and historic objects, artifacts, works of art, archival documents, and natural history specimens). Impacts to cultural landscapes and archeological resources are the cultural resource topics carried forward in this EA.

Cultural Landscapes

According to DO-28: *Cultural Resource Management Guideline*, a cultural landscape is:

...a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions.

Cultural landscapes in the study area include the CWDW. The proposed trail repairs and improvements would occur within the existing cultural landscape; therefore, the potential effects on this resource are analyzed in the EA.

VISITOR USE AND EXPERIENCE

The trail repairs and improvements would result in impacts on visitor use and experience. Lack of maintenance has caused certain sections of the trail to become eroded or overgrown and has resulted in deteriorating bridges and structures. The proposed trail improvements and repairs are expected to improve access, increase use, and change the visitor experience in certain areas of the park; therefore, this impact topic is analyzed in the EA.

IMPACT TOPICS DISMISSED FROM FURTHER ANALYSIS

The following impact topics were eliminated from further analysis in this EA. A brief rationale for dismissal is provided for each topic. Potential impacts to these resources would be none or negligible, localized, and most likely immeasurable.

HUMAN HEALTH AND SAFETY

The proposed trail repairs and improvements would not occur in an area of contaminated soils and would not be expected to mobilize any contaminants into the environment. Visitors would not be allowed within active construction areas. There would be the potential for long-term beneficial impacts to human health and safety from the resurfaced asphalt and improved trail connectivity, as well as the vehicle prevention measures ensuring no unauthorized vehicles can access the trail. There would be no expected adverse impacts. As a result, impacts to human health and safety were dismissed as an impact topic in this EA.

PARK OPERATIONS AND MANAGEMENT

The proposed trail repairs and improvements may require temporary closure of sections of trail during the construction period, but these would be localized and temporary, and impacts to park operations and management would be negligible. Future maintenance of the trail would not require additional staffing or otherwise alter the existing operation of CWDW. This resource area was therefore dismissed as an impact topic in this EA.

AIR QUALITY

The 1963 Clean Air Act, as amended (42 USC 7401 et seq.), requires federal land managers to protect air quality in national parks. The project site is located in the Washington Metropolitan Area moderate nonattainment zone for ozone and nonattainment for particulate matter (2.5 microns or less). During trail repair and improvements, dust and vehicle emissions related to construction activities, asphalt resurfacing, and transport of construction materials and personnel may temporarily affect local air quality. Air drainage would rapidly dissipate hydrocarbons, nitrogen oxide, and sulfur dioxide emissions because air stagnation is uncommon at the project sites. Overall, there would be a slight and temporary degradation of local air quality due to dust generated from construction activities, but these effects would be localized and negligible. The proposed project would not affect the park's current level of air quality; therefore, this impact topic was dismissed from further analysis.

GEOLOGY AND GEOLOGIC HAZARDS

The proposed trail repairs and improvements would not impact any unique geological resources, and no geologic hazards have been identified in the project area. This impact topic was therefore dismissed from further analysis.

VEGETATION

Actions directly related to the proposed trail repairs and improvements would require clearing or trimming of vegetation; however, the amount of vegetation clearing would be minimal. No existing rare or unusual vegetation occurs in the project area, and no tree removal is included as part of the action alternative. This impact topic was therefore dismissed from further analysis.

WILDLIFE

The project area is in an urban setting. It is adjacent to heavily used roads with attendant vehicle noise. As a result, wildlife in the project area is limited to adapted urban species, such as squirrels and songbirds. Although construction-related activities may temporarily displace wildlife from the area, the proposed action would not result in greater than negligible effects on wildlife or wildlife habitat. Because of the area's urban context, level of human activity, and minimal habitat value, this topic was dismissed from further analysis.

FLOODPLAINS

The project area is not within the 100-year floodplain, as defined by the Federal Emergency Management Agency, although the Fort Dupont Creek regularly overflows its banks during storm events. The streambeds under the other existing bridges are deeply incised and only extreme storm events result in an overflow. The replacement of bridges would likely provide a wider span across the streams and could result in negligible impacts in the overflow area, but existing floodplains would not be altered. Impacts to floodplains would not occur; therefore, this topic was dismissed from further analysis.

RARE, THREATENED, AND ENDANGERED SPECIES

No rare, threatened or endangered species are located in the project area. Therefore, this impact topic was dismissed from consideration.

VISUAL RESOURCES (AESTHETICS AND VIEWSHEDS)

The proposed trail repairs and improvements would be visible only on the trail itself and therefore would not affect viewsheds. The repairs and improvements may minimally improve the aesthetics of the trail for users. Visual resources would not be impacted as a result of the proposed action; therefore, this impact topic was dismissed from consideration.

CULTURAL RESOURCES

Archeological Resources

Ground-disturbing activities from implementation of the proposed trail repairs and improvements could impact archeological resources located along the trail. To determine the presence or absence of archeological resources, pit shovel tests were completed along the project area where ground-disturbing activities could occur. Fieldwork was carried out on September 16 and 17, 2013, and included 39 shovel test pits. No prehistoric artifacts or material relating to the Civil War were found. Artifacts more than 50 years old were found in only one location, around Battery Ricketts on Bruce Place and Fort Place SE. Brick fragments, mortar, nails, and a few pieces of whiteware ceramics and bottle glass were recovered. Maps beginning with the 1893 Baist *Real Estate Atlas of Washington* show small frame houses in this area, and the artifacts appear to be the remains of those houses. The material was recovered from disturbed, near-surface contexts, and no evidence of foundations, cellar holes, or other features was noted. The remains lack the integrity to be potentially eligible for listing on the national register. No sites were defined. Therefore archeological resources was dismissed from further consideration in the EA.

Historic Districts and Structures

The NHPA (16 USC 470 et seq.), NEPA, the NPS 1916 Organic Act, the NPS' *Management Policies 2006* (NPS 2006), DO-12, and NPS-28, *Cultural Resources Management Guideline* require the consideration of impacts on any cultural resources that might be affected, and NHPA, in particular, on cultural resources listed in, or eligible for, the national register. The fort properties associated with CWDW are individually listed on the national register; however, the proposed trail repairs and improvements would not affect any of the fort properties directly. This impact topic was therefore dismissed from consideration.

Museum Objects

The proposed trail repairs and improvements would not require the removal of or otherwise directly affect any museum objects. Therefore, this impact topic is analyzed as a topic in this EA.

Ethnographic Resources

The NPS defines ethnographic resources as any "site, structure, object, landscape, or natural resource feature assigned traditional, legendary, religious, subsistence or other significance in the cultural system of a group traditionally associated with it" (NPS 1998b). In this analysis, the NPS' term "ethnographic resource" is equivalent to the term "Traditional Cultural Property" (TCP), which is more widely used in cultural resource management. Guidance for the identification of ethnographic resources is found in *National Register Bulletin #38, Guidelines for Evaluating and Documenting Traditional Cultural Properties* (NPS 1998b). The key considerations in identifying TCPs are their association with cultural

practices or beliefs of a living community that are rooted in the community's history and are important in maintaining the continuing cultural identity of the community (NPS 1998b). No properties in the project area meet the definition of a TCP; therefore, this impact was dismissed from further consideration.

TRANSPORTATION

Under both the proposed action and the no action alternative, streets surrounding the project area would remain open during trail repairs and improvements. Some short-term negligible impacts to traffic would occur because of the increased construction traffic from hauling materials to and from the project sites, potentially causing slight delays in transit time. Traffic impacts would be negligible during construction. Therefore, this impact topic was dismissed from further analysis in this EA.

UNIQUE ECOSYSTEMS, BIOSPHERE RESERVES, WORLD HERITAGE SITES

No known biosphere reserves, World Heritage sites, or unique ecosystems are listed as occurring at the CWDW; therefore, this impact topic was dismissed from further analysis.

LAND USE

The existing land use within the project area would not change as a result of implementation of the proposed action; therefore, the impact topic was dismissed from further analysis.

SOCIOECONOMICS

NEPA requires an analysis of impacts to the human environment, which includes economic, social, and demographic elements in the affected area. Trail repairs and improvements associated with the proposed action may bring a short-term need for additional personnel at the site, but this addition would be minimal and would not affect the surrounding community's overall population, income, and employment base. The proposed action would not appreciably impact local businesses or other agencies. Implementation of the proposed action could provide a beneficial impact to the economies of nearby areas (e.g., minimal increases in employment opportunities for the construction workforce and revenues for local businesses and government generated from construction activities and workers). Any increase, however, would be negligible. Therefore, socioeconomics was dismissed as an impact topic.

ENVIRONMENTAL JUSTICE

On February 11, 1994, President Clinton issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." This order directs agencies to address environmental and human health conditions in minority and low-income communities to avoid the disproportionate placement of any adverse effects from federal policies and actions on these populations. Local residents may include low-income populations, but these populations would not be particularly or disproportionately affected by activities associated with the trail repairs and improvements; therefore, this impact topic was dismissed from further analysis in this EA.

CLIMATE CHANGE

Climate change refers to any significant changes in average climatic conditions (such as mean temperature, precipitation, or wind) or variability (such as seasonality and storm frequency) lasting for an extended period (decades or longer). Recent reports by the U.S. Climate Change Science Program, the National Academy of Sciences, and the United Nations Intergovernmental Panel on Climate Change

provide evidence that climate change is occurring as a result of rising greenhouse gas emissions and could accelerate in the coming decades.

While climate change is a global phenomenon, it manifests differently depending on regional and local factors. General changes that are expected to occur in the future as a result of climate change include hotter, drier summers; warmer winters, warmer ocean water; higher ocean levels; more severe wildfires; degraded air quality; more heavy downpours and flooding; and increased drought. Climate change is a far-reaching, long-term issue that could affect the park and its resources, visitors, and management. Although some effects of climate change are considered known or likely to occur, many potential impacts are unknown. Much depends on the rate at which the temperature would continue to rise and whether global emissions of greenhouse gases can be reduced or mitigated. Climate change science is a rapidly advancing field and new information is being collected and released continually.

Construction activities associated with implementation of the proposed action would contribute to increased greenhouse gases emissions, but such emissions would be short term, ending with the cessation of construction, and it is not possible to meaningfully link the greenhouse gases emissions of such individual project actions to quantitative effects on regional or global climatic patterns. Any effects on climate change would not be discernible at a regional scale. Therefore, this impact topic was dismissed from further evaluation.

SUSTAINABILITY AND ENERGY CONSERVATION POTENTIAL

The trail repairs and improvements would not affect sustainability or conservation measures. Therefore, this impact topic was not analyzed further.

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CHAPTER 2: ALTERNATIVES

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

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

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

Alternative 1: No Action

Alternative 2: Repair, Reconstruct, and Improve Connectivity of the CWDW Hiker-Mountain Biker Trail (Preferred Alternative)

ALTERNATIVE 1: NO ACTION

The no action alternative provides a basis for comparison with the action alternative and the respective environmental consequences. If the no action alternative were selected, the NPS would respond to future needs and conditions without major actions or changes in the present course of management.

Under the no action alternative, no repairs or connectivity improvements would be made to the CWDW Hiker-Mountain Biker trail, beyond regular maintenance activities. Damage found throughout the trail system, including numerous areas where erosion, rutting, and ponding have occurred, would not be corrected. Asphalt surfaces in need of repair would not be resurfaced and deteriorating bridges would not be replaced. No connectivity improvements would be made. The continuation of current conditions would contribute to further deterioration of existing environmental and safety conditions.

ALTERNATIVE 2: REPAIR, RECONSTRUCT, AND IMPROVE CONNECTIVITY OF THE CWDW HIKER-MOUNTAIN BIKER TRAIL (PREFERRED ALTERNATIVE)

The four major components of alternative 2, detailed below, include asphalt resurfacing, improving trail connectivity, installing motor vehicle prevention measures, and replacing pedestrian bridges. A new boardwalk would be installed at one location to avoid an ecologically sensitive area. Alternative 2 would include replacement of four existing foot bridges.

ASPHALT RESURFACING

Asphalt resurfacing would include asphalt demolition, repairs, and resurfacing, as well as turf grading at six locations throughout Fort Mahan, Fort Davis, and Fort Dupont. Total resurfacing would include 5,225 linear feet of existing trail (6 feet wide). The approximate location of each resurfacing project is provided in figure 2.

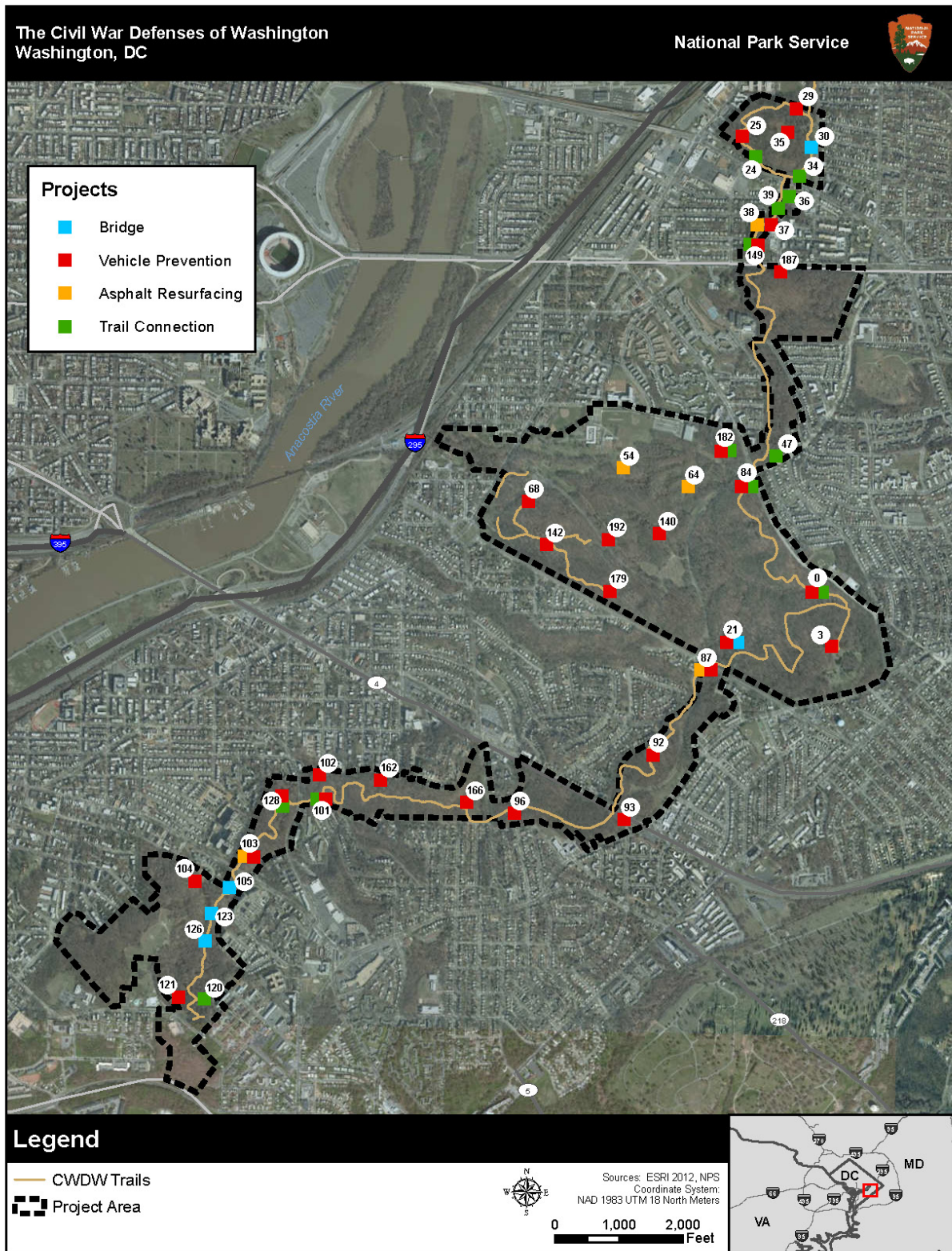


FIGURE 2. ALL PROJECT LOCATIONS

TRAIL CONNECTION IMPROVEMENTS

New trail connections would involve upgrading informal trails and the creation of connections to existing trails to improve overall trail system connectivity. All new trail construction and connectivity improvements would consist of standard 6-foot-wide trails.

Ten new connecting trails would be constructed at multiple trailheads to improve wayfinding at road crossings. In these locations, no trail currently exists at road crossings between the curb or sidewalk and the woods line. Figure 3 provides an example of the trail not connecting to an existing sidewalk. Six-foot-wide compacted gravel trails would be constructed in these areas, extending from the woods line to the curb or sidewalk. New trail connections would be constructed at 11 locations for a total 2,385 linear feet of new trail. The locations of each trail connection are provided in figure 2.



SOURCE: NATIONAL PARK SERVICE (2012c)

**FIGURE 3. EXISTING TRAILHEAD AT EAST CAPITOL STREET NE,
SHOWING LACK OF CONNECTING TRAIL TO SIDEWALK**

MOTOR VEHICLE PREVENTION MEASURES

The use of all-terrain vehicles and motorcycles, especially on trails that are not designed to accommodate such use, can result in soil compaction and erosion, sedimentation of streams and water bodies, spread of invasive species, increased air pollution and greenhouse gas emissions, and conflicts with other user groups. Under alternative 2, in order to prevent motorcycle and all-terrain vehicle use on the CWDW Hiker-Mountain Biker trail, standard trailheads would be equipped with motor vehicle deterrent structures. A total of 27 structures would be installed at 14 road crossings, typically with two trailheads at each crossing. The vehicle prevention structures would be new with the exception of one road crossing at East Capitol Street, NE, where existing motor vehicle prevention structures would be replaced. The vehicle prevention measures would include placing boulders on either side of the trail to prevent vehicles

from entering the trail. In the middle of the trail, a collapsible metal post would be installed so that NPS maintenance vehicles would be able to use the trail. Figure 2 shows the location of all proposed motor vehicle prevention structures. Figure 4 displays a rendering of what the motor vehicle prevention measures could look like.



FIGURE 4: PROPOSED MOTOR VEHICLE PREVENTION MEASURE RENDERING

BRIDGE REPLACEMENT/BOARDWALK INSTALLATION

Under alternative 2, four bridges and one boardwalk would be installed. All bridges would be pre-fabricated, 6-foot-wide Enwood© laminated wood, girder-style structures and would replace existing deteriorating structures. The boardwalk would be a new installation to prevent further damage to an environmentally sensitive area. Figures 5 and 6 show an existing 3-foot-wide bridge on the trail that would be replaced and an example of an Enwood© bridge that would be installed under alternative 2. The locations of all four bridges and the boardwalk are provided in figure 2.



SOURCE: NATIONAL PARK SERVICE (2012c)

FIGURE 5. EXISTING BRIDGE TO BE REPLACED



SOURCE: NATIONAL PARK SERVICE (2012c)

FIGURE 6. EXAMPLE OF ENWOOD® LAMINATED WOOD BRIDGE

The new boardwalk would be constructed at location 30 in Fort Mahan. Location 30 is located between Benning Road North to Hunt Place along the Fort Mahan Loop. At this site, frequent water exposure from a seep, located approximately 18 feet upslope from the north side of the Hiker-Mountain Biker trail, has deteriorated the asphalt. The water currently drains from the seep across the trail and into a palustrine wetland. To protect the wetland, including soils and vegetation, the NPS would remove the deteriorated asphalt and construct a pre-fabricated raised boardwalk spanning the removed portion of the trail, approximately 34 feet long by 6 feet wide. Figure 7 demonstrates the existing condition of the trail in this location. Figure 8 provides a rendering of what a boardwalk at location 30 could look like.



SOURCE: LOIEDERMAN SOLTESZ ASSOCIATES, INC. (2013)

FIGURE 7. TRAIL DETERIORATION AND WETLAND (LOCATION 30)



FIGURE 8. RENDERING OF PROPOSED BOARDWALK AT LOCATION 30

MITIGATION MEASURES FOR THE PROPOSED ACTION

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

GENERAL CONSIDERATIONS

- Construction fencing would be installed to clearly delineate the project disturbance limits prior to commencement of work by the contractor.
- All protection measures would be clearly stated in the construction specifications, and workers would be instructed to avoid conducting activities beyond the construction zone, as defined by the road or construction zone fencing. Construction staging areas should utilize existing paved areas, as feasible.
- New concrete and asphalt would be produced at locations outside of the CWDW Hiker-Mountain Biker trail. No overnight storage of these materials would be permitted within park boundaries.

- All equipment on the project would be maintained in a clean and well-functioning state to avoid or minimize contamination from automotive fluids and to ensure that noise controls are properly functioning. All equipment would be checked daily.
- Prior to construction, construction contractor would develop an assessment using the bridge specifications to determine the access and installation needs at each location to avoid tree cutting to the extent feasible. At this time, no tree cutting is anticipated.
- Prior to construction, a hazardous spill plan would be submitted, stating what actions would be taken in case of a spill to minimize any adverse impacts. This plan would also incorporate preventive measures to be implemented, such as the placement of construction staging areas and refueling facilities, storage and handling of hazardous materials, and notification procedures for a spill. A spill kit would be available, and workers trained to use it would be available to clean up spills.

SOILS

- An erosion and sediment control plan would be prepared and implemented, consistent with the D.C. Soil Erosion and Sediment Control Program. An approved D.C. soil erosion and sediment control permit would be obtained.
- The amount of disturbed earth area and soil exposure to rainfall would be minimized.
- Any soil excavated during construction would be stockpiled and reused as fill, if needed.
- Erosion containment controls, such as silt fencing and sediment traps, would be used to contain sediment on site.
- Disturbed soil or soil stockpiles would be covered with plastic sheeting, jute matting, erosion netting, straw, or other suitable cover material.
- Erosion and sediment control best management practices (BMPs) would be inspected on a regular basis and after each measurable rainfall to ensure that they are functioning properly and to maintain BMPs (repair and clean) as necessary to ensure that they continue to function properly.
- BMPs would be installed and removed in coordination with earth-disturbing activities. If and when BMPs are no longer needed, they will be reclaimed and revegetated.
- Prior to clearing and grading, the area to be cleared would be clearly marked to minimize the amount of cleared area.
- Exposed soils would be stabilized and replanted with vegetation identified by the park as appropriate for the vegetation zone where construction is occurring, immediately following completion of construction activities or during temporary cessation of the earth-disturbing activities.

HYDROLOGY AND WATER QUALITY

- Installation of any resurfaced asphalt would be in accordance with EISA 438 and District Stormwater regulations. No new impervious surface is anticipated.

WETLANDS

- Appropriate erosion and siltation controls would be used during construction, including stabilization of all exposed soil or fill material at the earliest practicable date.
- Heavy equipment use in wetlands would be avoided.
- Excavated material would be placed on an upland site.

CULTURAL RESOURCES

- Impacts to the cultural landscape would be minimized by ensuring that the rehabilitation, reconstruction, and connection improvements are conducted in a manner consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (NPS 1996).
- A program of construction monitoring to document archeological resources during the construction phase of the project would be developed and implemented.
- If archeological resources are discovered during construction, all work in the immediate vicinity of the discovery would be halted until the resources can be identified and documented and an appropriate mitigation strategy can be developed. Consultation with the District of Columbia historic preservation officer (DC HPO), the NPS, the park archeologist, and/or the NPS regional archeologist would be coordinated to ensure that the protection of resources is addressed. In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (25 USC 3001) of 1990 would be followed.

VISITOR USE AND EXPERIENCE

- Construction during peak visitor use periods (e.g., weekends and holidays) would be avoided so as not to disturb visitors.
- Construction fencing would be placed at the intersections of the construction area and anywhere else visible to visitors to discourage visitors from entering a construction site.

ALTERNATIVES CONSIDERED BUT DISMISSED

CEQ regulations for implementing NEPA require federal agencies to explore and objectively evaluate all reasonable alternatives and to briefly discuss the rationale for eliminating any alternatives that were not considered in detail. A number of design and construction options were identified during scoping and reviews of preliminary design plans for vehicle prevention measures and the repair of location 30. During internal project development, these options were deemed not feasible or had several disadvantages and were not carried forward for analysis in this EA. Justification for eliminating these options from further analysis was based on factors outlined in DO-12:

- technical or economic infeasibility
- inability to meet the project objectives or resolve the project purpose and need
- duplication with other less environmentally damaging or less expensive alternatives

- conflict with an up-to-date and valid park plan, statement of purpose and significance, or other policy
- too great an impact to the environment

ALTERNATIVE VEHICLE PREVENTION MEASURE METHOD

An alternative vehicle prevention measure was considered. The prevention measure also includes a drop-down wood pole that can be lowered; however, in place of boulders, four additional small, wooden poles with two longer, wooden beams would be placed across the sides of the trail to prevent vehicles from using the trail. While this method is currently in use at the park, it requires digging five holes and cementing the wooden poles in place at each location as opposed to using one hole for the boulder design. Additionally, use of boulders looks more natural along the trail. Because this alternative option would result in greater soil disturbance, it was dismissed from further analysis.

USE OF A BRIDGE AT LOCATION 30

Use of a bridge instead of a boardwalk was considered at location 30, located adjacent to the wetland. However, due to the topography of the site and to limit any visual intrusion, a lower profile boardwalk was selected for analysis at location 30.

THE ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The NPS is required to identify the environmentally preferable alternative in its NEPA documents for public review and comment. The NPS, in accordance with the Department of the Interior NEPA Regulations (43 CFR Part 46) and CEQ's Forty Questions, defines the environmentally preferable alternative (or alternatives) as the alternative that best promotes the national environmental policy expressed in NEPA (section 101[b]) (516 DM 4.10). The CEQ's Forty Questions (42 CFR Part 46.30) (Q6a) further clarifies the identification of the environmentally preferable alternative as, "the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources."

After completing the environmental analysis, the NPS identified alternative 2 as the environmentally preferred alternative. Alternative 2 would protect an existing wetland adjacent to the trail at location 30 and remove the existing asphalt, connecting wetlands on either side of the existing trail. Throughout the CWDW Hiker-Mountain Biker trail project area, alternative 2 would formalize social trails, which are currently compacting soils and increasing erosion potential.

SUMMARY OF ENVIRONMENTAL IMPACTS

Table 1 provides a summary of environmental consequences for each resource area analyzed in "Chapter 4: Environmental Consequences." Alternatives are determined to have beneficial or adverse impacts for each area of analysis, and adverse impacts are rated as negligible, minor, moderate, or major. Impacts are also assessed as to whether they are short term (duration of construction) or long term (greater than the duration of construction). Threshold definitions for each topic are listed in chapter 4.

TABLE 1. SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Resource Area	Alternative 1: No Action	Alternative 2: Repair, Reconstruct, and Improve Connectivity of the CWDW Hiker-Mountain Biker Trail
Soils	Long-term minor adverse impacts from continued erosion and soil compaction	Short-term, negligible to minor adverse impacts during construction. Long-term beneficial impacts.
Hydrology and water quality	Long-term minor adverse impacts from continuation of impeded water flow.	Short-term, minor adverse impacts during construction. Long-term beneficial impacts.
Wetlands	No impacts	Short-term minor adverse impacts during construction. Long-term beneficial impacts.
Cultural landscapes	Long-term minor adverse impacts from continued deteriorated conditions	Short-term minor adverse impacts during construction and long-term beneficial impacts from improved trail conditions.
Visitor use and experience	Long-term minor adverse impacts from the continued deterioration of trail conditions	Short-term minor adverse impacts during construction. Long-term beneficial impacts from the overall improvement of the trail system.

CHAPTER 3: AFFECTED ENVIRONMENT

This chapter of the EA describes existing environmental conditions in the areas potentially affected by the alternatives evaluated. This section describes the following resource areas: soils, hydrology and water quality, wetlands, cultural resources, and visitor use and experience. Potential impacts are discussed in “Chapter 4: Environmental Consequences” following the same order.

SOILS

Consistent with the NPS’ *Management Policies 2006*, the NPS actively seeks to understand and preserve the soil resources of its parks and properties and to prevent unnatural erosion, physical removal, or contamination of the soil to the extent possible (NPS 2006). The Soil Survey Geographic Database, produced by the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), was consulted to identify soils in the project area. The Soil Survey of the District of Columbia (NRCS 2006) shows 54 soil map units in the project area.

Soils within several sections of the project area have become compacted or are actively eroding due to human activity and natural events. Compacted soil becomes less permeable than in its normal state; increased soil compaction and lowered permeability render water from precipitation and runoff less able to quickly penetrate the soil. As a result, one of the functions of soil, to receive and treat surface water, diminishes. Additionally, water that would have percolated through the soil runs off of the surface and enters streams, carrying pollutants it contains with it. Increased surface runoff over compacted soils also may increase soil erosion where runoff flows over exposed soil; the sediment load in runoff then increases, further polluting receiving waters. Furthermore, soil erosion decreases soil quality because it removes fertile surface soil from the system.

Within the project area, soils are compacted in areas where there is no direct connection from sidewalks to the existing trail, or where there are breaks in the trail due to eroded trail segments. Trail users riding and walking over the same non-paved areas have repeatedly contributed to the rate of soil compaction. Soil erosion is also present within the project area; areas of deteriorating trail are creating exposed soil which continues to erode as it is ridden over and exposed to runoff. The eroded areas will continue to erode, which could further destabilize the existing trail, creating further impacts to both the trail and soil.

HYDROLOGY AND WATER QUALITY

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

The CWDW Hiker-Mountain Biker trail is part of the 176-square-mile Anacostia River watershed (Hydrologic Unit Code #02070008) that is broken down into 14 subwatersheds. The proposed trail repair and connectivity improvements would take place in the Fort Dupont, Pope Branch, and Piney Run tributaries, subwatersheds of the Anacostia River. The Anacostia River flows through and drains portions of Montgomery and Prince George’s counties, Maryland, and the District of Columbia. A part of the Chesapeake Bay watershed, the Anacostia drains one of the most densely populated areas (more than 860,000 people) on the east coast. Once a highly productive ecosystem, including healthy populations of fish and lush forests; the Anacostia River has declined in quality since the 17th century. The Anacostia

River degradation increased in the late 19th century because of the rise in urbanization and industrialization. As of 2000, roughly 70 percent of the Anacostia River watershed has been developed with 45 percent of it being residential development. The 30 percent undeveloped land is composed of forests, wetlands, and parks. Approximately 2,550 acres of wetlands remain within the Anacostia River watershed compared to the historically estimated 6,390 acres of wetlands (DDOE 2012).

The 3-mile-long Fort Dupont tributary is located completely within the SE quadrant of the District of Columbia, bordered by Ridge Road SE, to the north; CSX rail lines to the west; Alabama Avenue SE, to the east; and Massachusetts Avenue SE, to the south. The Fort Dupont tributary is a third-order tributary that is about 0.72 square miles in size. The average baseflow of the main stem, Fort Dupont Creek, is approximately 0.5 cubic feet per second, but during periods of severe drought, the stream goes completely dry (Anacostia Watershed Restoration Partnership 2009a). While only 13 percent land cover is impervious, uncontrolled stormwater runoff affects the tributary (DDOE 2012). Approximately 69 percent of the Fort Dupont tributary is forested, making it the highest level of forest cover of all the subwatersheds. The remaining land use areas are medium- and high-density residential areas (Anacostia Watershed Restoration Partnership 2009).

A 2009 *Fort Dupont Tributary Environmental Baseline Conditions and Restoration Report* discusses several possible impairments, specifically from nitrogen and phosphorus levels (Anacostia Watershed Restoration Partnership 2009). While an average forested watershed would be expected to have a phosphorous load of around 8.2 pounds of per square mile per year, the phosphorous load in the Fort Dupont tributary is estimated to be 217 pounds per square mile per year compared to the Anacostia River's phosphorus load of 500 pounds per square mile per year. Similarly, while an average forested watershed's nitrogen load would be expected to be around 42 pounds per square mile per year, the nitrogen load of the Fort Dupont tributary is estimated to be approximately 1,940 pounds per square mile per year compared to the Anacostia River's nitrogen load of 5,255 pounds per square mile per year. Although high levels of toxins (such as arsenic, mercury, lead, polychlorinated biphenyls, and pesticides) and bacteria have been recorded in the Anacostia River watershed, there is no monitoring station in the Fort Dupont tributary (Anacostia Watershed Restoration Partnership 2009a).

The 1.3-mile-long Pope Branch tributary is located completely within the SE quadrant of the District of Columbia. The Pope Branch tributary is bordered by K Street on the north end, Fort Davis on the east, Highwood Drive on the south end, and Fairlawn Avenue on the west. Pope Branch is a third order tributary that is approximately 0.41 square mile in size. The average baseflow of the main stem, Pope Branch, is approximately 0.1 cubic feet per second, but during periods of severe drought, the stream may be reduced to a trickle. Roughly 32 percent of Pope Branch watershed is impervious surfaces, while roughly only 35.9 percent is forested. The remaining land use areas consist of medium density residential homes and high density garden apartments (Anacostia Watershed Restoration Partnership 2009b).

A 2009 *Pope Branch Tributary Environmental Baseline Conditions and Restoration Report* discusses several possible impairments, specifically from nitrogen and phosphorus levels. While an average forested watershed would be expected to have a phosphorous load of around 8.2 pounds of per square mile per year, the phosphorous load in the Pope Branch tributary is estimated to be 594 pounds per square mile per year compared to the Anacostia River's phosphorus load of 500 pounds per square mile per year. Similarly, while an average forested watershed's nitrogen load would be expected to be around 42 pounds per square mile per year, the nitrogen load of the Pope Branch tributary is estimated to be approximately 4,233 pounds per square mile per year compared to the Anacostia River's nitrogen load of 5,255 pounds per square mile per year. Although high levels of toxins (such as arsenic, mercury, lead, polychlorinated biphenyls, and pesticides) and bacteria have been recorded in the Anacostia River watershed, there is minimal monitoring data for the Pope Branch tributary (Anacostia Watershed Restoration Partnership 2009b).

Unlike Fort Dupont and Pope Branch, Piney Run, which has a 1.5 square mile watershed, is not identified as a free-flowing stream tributary, but rather a section of the 176 square mile Anacostia River watershed, a tidal river tributary. Piney Run is one of eight tidal tributaries that makeup the lower Anacostia River watershed, which includes: Quincy Manor Run, Dueling Creek, Nash Run, Fort Chaplin, Fort Davis, Fort Stanton, and Stickfoot. Piney Run tributary was once considered a first order stream but now Piney Run is a disconnect stream with tidal influences, and an open headwater section. The area for Piney Run borders the southern line of Watts Branch tributary and just north of Fort Dupont. Approximately 31 percent of Piney Run watershed is impervious surfaces. Piney run consists mainly of a high- and medium-residential areas with some forested areas. The total forest cover within the Anacostia watershed is approximately 11.3 percent (1,762 acres) in 2000 (Anacostia Watershed Restoration Partnership 2009c).

The high percentage of high- and medium- residential areas coincides with a high percentage of impervious surfaces, which are directly related to stormwater runoff. The connection of the tidal tributaries to the Anacostia River along with stormwater runoff leads to pollutants and sediment flow into the Anacostia River. A 2009 *Tidal River Tributary Environmental Baseline Conditions and Restoration Report* discusses several possible impairments, specifically from phosphorus and, to a lesser extent, nitrogen levels. Elevated levels of toxins (such as arsenic, mercury, lead, polychlorinated biphenyls, and pesticides) and bacteria have been recorded through the various monitoring stations within the Anacostia watershed (Anacostia Watershed Restoration Partnership 2009c).

A map of the streams and rivers within the project area can be seen in figure 9.

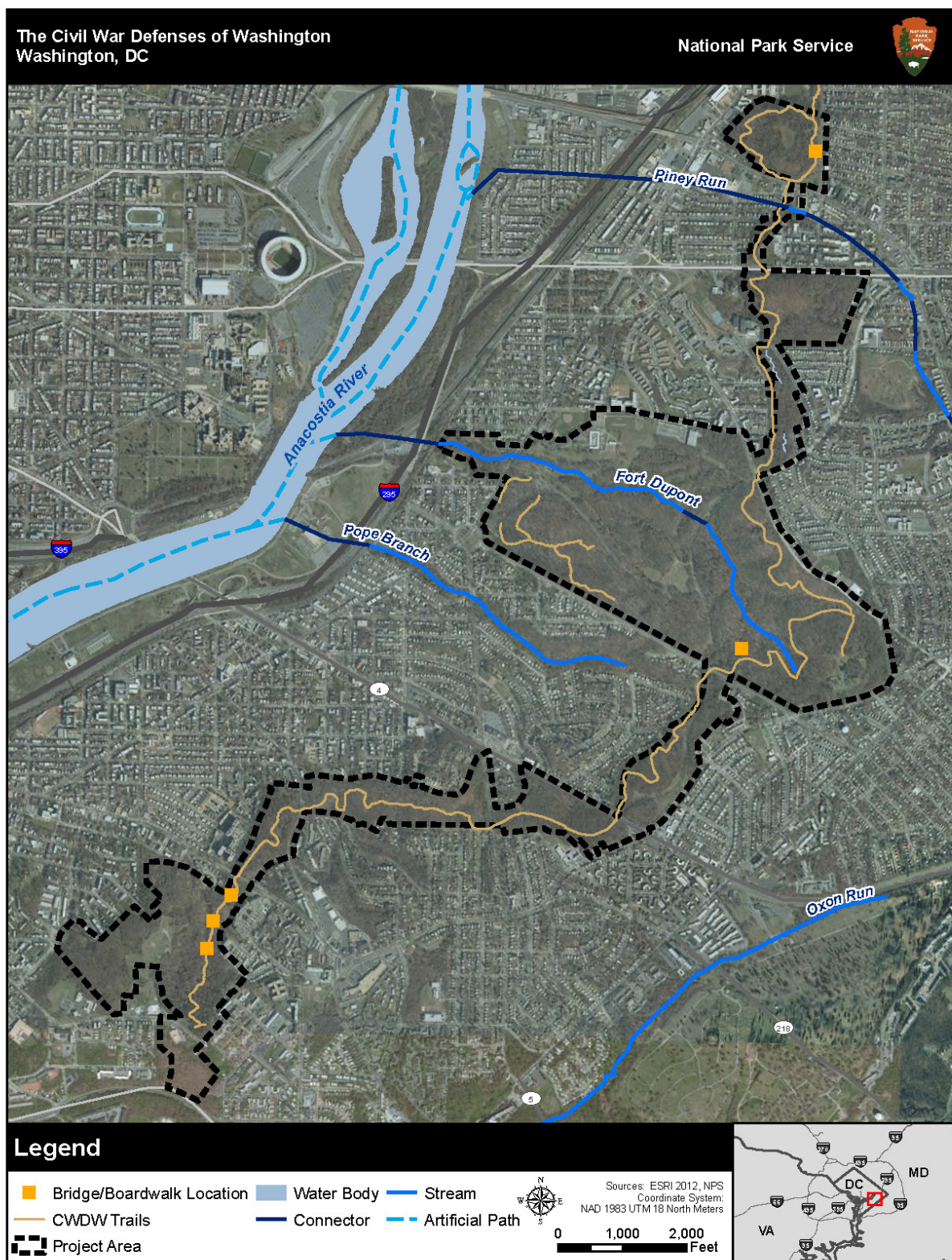


FIGURE 9. WATER RESOURCES IN THE PROJECT AREA

WETLANDS

Wetlands are areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (USACE 1987). As such, the USACE requires that areas dominated by hydrophytic vegetation, contain hydric soils, and display indicators of wetland hydrology must be considered a wetland. The NPS definition of wetlands is similar to that of the U.S. Environmental Protection Agency and the USACE; however, it is broader than the USACE 404 permit program definition and therefore covers a broader range of wetland habitat types. The NPS classifies wetlands based on the U.S. Fish and Wildlife's (USFWS') *Classification of Wetlands and Deepwater Habitats of the United States*, also called the Cowardin classification system. However, wetland delineation on NPS lands must satisfy both the USACE's wetland definition and the NPS' standards for identifying wetlands (Cowardin et al. 1979). Based on this classification system, a wetland must satisfy all three of the following attributes:

- The habitat at least periodically supports predominantly hydrophytic (wetland) vegetation. This requires that the dominant vegetation consists of species capable of growing in water or on substrate that is at least periodically deficient in oxygen as a result of the presence of water. Plants rated obligate (OBL), facultative wet (FACW), and facultative (FAC) are considered in the hydrophytic vegetation tally; whereas plants rated facultative up (FACU), and upland (UPL) are not considered in the hydrophytic vegetation tally¹.
- The substrate is predominantly undrained hydric soil.
- The substrate is nonsoil and saturated with water, or is covered by shallow water at some time during the growing season of each year.

In 1977, President Carter issued Executive Order 11990, "Protection of Wetlands." In response to this executive order, the NPS issued DO 77-1: *Wetland Protection* (NPS 2012a). This order directed the NPS to use the USFWS definition and methodology as the standard for identifying, classifying, and inventorying wetlands when NPS actions have the potential to adversely impact wetlands.

Based on the Cowardin et al. (1979) classification system, DO 77-1 recognizes five wetland categories:

1. areas with hydrophytes and hydric soils, such as those commonly known as marshes, swamps, and bogs
2. areas without hydrophytes but with hydric soils, such as flats where drastic fluctuations in water level, wave action, turbidity, or high concentration of salts may prevent the growth of hydrophytes)
3. areas with hydrophytes but non-hydric soils, such as margins of impoundments or excavations where hydrophytes have become established but hydric soils have not yet developed)
4. areas without soils but with hydrophytes, such as the seaweed-covered portion of rocky shores
5. Wetlands without soil and without hydrophytes, such as gravel beaches or rocky shores without vegetation

¹ OBL: A plant that almost always occurs in wetlands, but rarely in uplands;

FACW: A plant that usually occurs in wetlands, but occasionally occurs in uplands;

FAC: A plant that commonly occurs in both wetland and uplands;

FACU: A plant that usually occurs in uplands, but occasionally occurs in wetlands; and

UPL: A plant that almost always occurs in uplands, but rarely occurs in wetlands

Category 1 wetlands would meet the USACE definition of a wetland and would be afforded jurisdiction provided the wetlands are not isolated. Although, the NPS may choose to classify an area as a wetland if it meets only one of the three wetland criteria in an area that naturally has both plants and soils present, DO 77-1 directs wetland delineators to follow the USACE guidelines and only classify areas meeting all three criteria as wetlands. The USACE does not generally consider Categories 2 through 5 to be wetlands; however, the USACE generally regulates such areas under the definition of waters of the United States (33 CFR Part 328.3).

The NPS must also comply with section 404 of the Clean Water Act when those actions involve the discharge of dredged or fill materials in wetlands or other waters of the United States. As required by DO 77-1, the NPS must avoid adverse impacts on wetlands to the extent practicable, minimize any impacts that cannot be avoided, and compensate for any remaining unavoidable adverse impacts on wetlands (NPS 2012a).

A visual survey of the project area was completed in May 2013 by an environmental scientist trained to delineate wetlands. No formal wetland delineation has been completed to date. Based on the visual survey, a potential palustrine wetland crosses approximately 10 feet of the existing asphalt trail near 42nd Street SE, and Benning Road SE, in the northern section of Fort Mahan. The existing asphalt trail shows moderate deterioration and frequent water exposure. Water exposure originates from a seep approximately 18 feet up slope of the trail's north side. The water flows down slope from the seep, crossing over the trail and into the wetland. The soil in the potential wetland area was saturated; additionally, standing water was observed. Standing water and soil saturation are positive primary indicators of wetland hydrology.

The wetland covers an approximately 600-square-foot area (30-foot by 30-foot area), and extends to approximately 30 feet south of the trail. Vegetation present in the area includes sweet gum (*Liquidambar styraciflua*) (FAC), tulip poplar (*Liriodendron tulipifera*) (FACU), red maple (*Acer rubrum*) (FAC), American elm (*Ulmus Americana*) (FACW), northern red oak (*Quercus rubra*) (FACU), and sassafras (*Sassafras albidum*) (FACU). Herbaceous and other species identified include English ivy (*Hedera helix*) (FACU), Virginia creeper (*Parthenocissus quinquefolia*) (FACU), greenbriar (*Smilax rotundifolia*) (FAC), poison ivy (*Toxicodendron radicans*) (FAC), Japanese honeysuckle (*Lonicera japonica*) (FACU), Frank's sedge (*Carex frankii*) (OBL), fowl bluegrass (*Poa palustris*) (FACW), and jewel weed (*Impatiens capensis*) (OBL) (Loiederman Soltesz Associates, Inc. 2013). Most of the observed species are rated FAC or wetter and are considered hydrophytic vegetation. Thus, it is likely that the potential wetland would satisfy the hydrophytic vegetation criterion.

CULTURAL RESOURCES

Section 106 of the NHPA, as amended, and as implemented in 36 CFR Part 800, requires federal agencies to consider the effects of federally funded, regulated, or licensed undertakings on cultural resources listed in or eligible for inclusion in the national register. Moreover, the federal agency must afford the ACHP the opportunity to comment in the event that an undertaking will have an adverse effect on a cultural resource that is eligible for or listed in the national register. For the purposes of this report, cultural resources (historic properties) are defined as cultural landscapes and archeological resources. The consideration of these resources by the NPS meets pertinent requirements of the NHPA, as amended, and related legislation and implementing regulations.

CULTURAL LANDSCAPES

According to DO-28, a cultural landscape is an "expression of human manipulation and adaptation of the land." Cultural landscapes are the result of the long interaction between people and the land, and reflect the influence of human beliefs and actions over time upon the natural landscape. Shaped through time by

historical land-use and management practices, as well as politics and property laws, levels of technology, and economic conditions, cultural landscapes provide a living record of an area's past and a visual chronicle of its history. The dynamic nature of modern human life, however, contributes to the continual reshaping of cultural landscapes, making them a valuable source of information about specific times and places on one hand but rendering their long-term preservation a challenge on the other.

In order for a cultural landscape to be listed in the national register, it must possess significance (the meaning or value ascribed to the landscape) and retain the integrity of those features necessary to convey its significance as well as meet one or more of the national register criteria (36 CFR Part 63). The character defining features of a cultural landscape include spatial organization and land patterns; topography; vegetation; circulation patterns; water features; and structures/buildings, site furnishings, and objects. Individual features of the landscape are never examined alone but only in relationship to the overall landscape. The arrangement and interrelationships of a cultural landscape's organizational elements and character-defining features provide the key to determining the potential impacts and effects of proposed undertakings on a cultural landscape (see the Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* [NPS 1996]).

The CWDW parks system was a major element of the 1902 McMillan Commission Plan for the improvement of the park system in Washington, D.C. The system of defensive forts was singled out by the McMillan Commission for the importance its historical landscape makes to the city of Washington as much as for the "commanding view" of the Potomac and Anacostia rivers, the city, and the hills of Virginia (Moore 1902). The CWDW Hiker- Mountain Biker trail is the remnant of that plan as the McMillan Commission recommended forming Fort Drive, a highway extending all the way around Washington connecting all the Civil War era forts. Portions of Fort Drive were constructed by the Civilian Conservation Corps in the 1930s; however this plan was modified by the NPS in the 1960s when it was acknowledged that the vehicle traffic in the city of Washington had become too great for the highway to be successful as a rural byway. Instead, the CWDW Hiker- Mountain Biker trail was installed to provide public access to these important historical sites but also to encourage visitor use and create more opportunities for recreation within the park.

Nineteen separate properties were nominated to national register for the CWDW Historic District. The project area, which contains Forts Mahan, Chaplin, Dupont, Davis, Stanton, and Battery Ricketts, is only a small section of the historic district. A Cultural Landscape Inventory was completed on the CWDW in 1996 and it only outlines the basic contributing features to each landscape within a fort site (Handly 1996). The report also determined that the Fort Circle Parks were a historic designed landscape. As such, it is considered a significant cultural and historic landscape.

The structures remaining at each fort site in the project area are contributing features of the significant cultural and historic landscape and have been cataloged with the NPS' List of Classified Structures. They are shown below in table 2.

TABLE 2. LANDSCAPE FEATURES FROM THE NATIONAL PARK SERVICE LIST OF CLASSIFIED STRUCTURES

Structure Number	Name	Type	Significance Level
113-1	Fort Mahan, earthworks	Structure	State
113-2	Fort Chaplin, earthworks	Structure	State
113-3	Fort Mahan, well	Structure	Contributing
113-4	Fort Mahan, rifle pits	Structure	Contributing
115	Fort DuPont, earthworks	Structure	State
115-1	Fort Davis, earthworks	Structure	State
122-1	Fort Stanton, earthworks	Structure	State
122-3	Battery Ricketts, earthworks	Structure	State

Two new Cultural Landscape Inventory reports were completed for Forts Mahan and Dupont in the second half of 2013. Although these reports are only in draft form, they provide a more detailed assessment of the contributing and non-contributing landscape features near these two forts (Lester 2013a and 2013b). A listing of the contributing and non-contributing character-defining landscape features identified in both draft reports appears below in tables 3 and 4.

TABLE 3. CHARACTER-DEFINING LANDSCAPE FEATURES OF FORT MAHAN

Feature Identification Number	Name	Type	Significance Level
164431	Circular Pedestrian Trail (unpaved)	Circulation	Contributing
164433	Access Road (graveled)	Circulation	Contributing
164439	Social Trails	Circulation	Non-Contributing
164441	Trail leading to CWDW Hiker-Biker Trail	Circulation	Non-Contributing
164443	Open grassy area at the crest of the fort	Vegetation	Contributing
164445	Willow oak, southeast corner of the site	Vegetation	Contributing
164447	Tulip poplars, near CCC-era road	Vegetation	Contributing
164449	Other mature trees and brush vegetation	Vegetation	Non-Contributing
164451	Southwest bastionet	Structure	Contributing
164453	Southeast bastionet	Structure	Contributing
164455	Outerworks	Structure	Contributing
164457	Advanced battery	Structure	Contributing
164459	NPS Wayside	Small Scale Features	Non-Contributing
164461	NPS Signage	Small Scale Features	Non-Contributing
164463	Metal Gate	Small Scale Features	Non-Contributing
164465	Utility Box	Small Scale Features	Non-Contributing
164467	Football uprights	Small Scale Features	Undetermined
164469	Pole (Flagpole or football upright)	Small Scale Features	Undetermined
164471	Lights (mounted on a pole)	Small Scale Features	Undetermined

TABLE 4. CHARACTER DEFINING LANDSCAPE FEATURES OF FORT DUPONT

Feature Identification Number	Name	Type	Significance Level
164473	Trail through the sallyport	Circulation	Contributing
164477	Fort loop road	Circulation	Contributing
164489	Parking area	Circulation	Non-Contributing
164491	Social trails	Circulation	Non-Contributing
164493	Paved footpath	Circulation	Non-Contributing
164479	Grassy area W& S of earthworks	Vegetation	Contributing
164481	Cedars & Hemlock assoc. with Nursery	Vegetation	Non-Contributing
164483	Ravine vegetation	Vegetation	Non-Contributing
164485	Earthwork vegetation	Vegetation	Non-Contributing
164487	Trees near entrance	Vegetation	Undetermined
164495	Artillery platforms	Structure	Contributing
164497	Embrasures	Structure	Contributing
164499	Outerworks	Structure	Contributing
164501	Comfort station	Structure	Non-Contributing
164503	Bridge	Structure	Non-Contributing
164505	NSCD Boulder & Plaque	Small Scale Features	Non-Contributing
164507	Wayside	Small Scale Features	Non-Contributing
164509	NPS Signage	Small Scale Features	Non-Contributing
164511	Gates	Small Scale Features	Non-Contributing
164513	Trash Receptacles	Small Scale Features	Non-Contributing
164515	Picnic Tables	Small Scale Features	Non-Contributing
164517	Grill	Small Scale Features	Non-Contributing

VISITOR USE AND EXPERIENCE

The NPS CWDW sites are part of the National Capital Parks – East management area and part of the open green spaces of the nation’s capital. National Capital Parks – East supports an average of 1 to 2 million recreational visitors per year (NPS 2013a). More than 80 percent of the annual visitors to the park and its facilities come from Maryland and Virginia (NPS 2004c).

The CWDW contains remnants of a complex system of Civil War fortifications built by Union forces and provides visitors a connection between the nation’s divergent past and its present-day pastimes. The park is a multi-use recreation area, offering a variety of facilities and activities, including sports fields, an ice arena, community gardening areas, hiking, biking, picnicking, community interpretive tours, concerts, and lectures (NPS 2013b).

Within the project area, the CWDW Hiker-Mountain Biker trail links six sites containing traces of Civil War fortifications along a hilltop ridge that surrounds the city. These sites range from substantial fort ruins to remains of rifle trenches to remnant earthworks that have been reclaimed by the forest. Many sections of the trail linking the sites travel through relatively undisturbed forested areas that preserve significant natural features, including mature hardwood forests, geologic and aquatic resources, and habitat for indigenous plants and wildlife that are unusual in an urban setting. At the fort sites, visitor and recreational facilities that are accessible from the CWDW Hiker-Mountain Biker trail include picnic areas, sport fields, community gardens, and interpretive signs and features. Amenities at Fort Dupont include an activity center, amphitheater, and ice arena.

The CWDW sites operate year-round during daylight hours. There are no entrance fees, although some fees are charged for some activities, such as reservations for sports field rentals, picnic areas, and community garden plots, and admission to the Fort Dupont ice arena (NPS 2013b).

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

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

GENERAL METHODOLOGY FOR ESTABLISHING IMPACT THRESHOLDS AND MEASURING EFFECTS BY RESOURCE

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

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

These elements are described in the following sections.

GENERAL ANALYSIS METHODS

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

Geographic Area Evaluated for Impacts (Area of Analysis). The geographic study area (or area of analysis) for this assessment is the project area outlined in figure 2, the CWDW Hiker-Mountain Biker trail section through Fort Mahan, Fort Chaplin, Fort Dupont, Fort Davis, Fort Stanton, and Fort Ricketts. The area of analysis may extend beyond the park’s boundaries for some cumulative impact assessments. The specific area of analysis for each impact topic is defined at the beginning of each topic discussion.

IMPACT THRESHOLDS

Determining impact thresholds is a key component in applying the NPS’ *Management Policies 2006* (NPS 2006) and DO-12 (NPS 2001). These thresholds provide the reader with an idea of the intensity of a given impact on a specific topic. The impact threshold is determined primarily by comparing the effect on a relevant standard based on applicable or relevant/appropriate regulations or guidance, scientific literature and research, or best professional judgment. Because definitions of intensity vary by impact

topic, intensity definitions are provided separately for each impact topic analyzed in this document. Intensity definitions are provided throughout the analysis for negligible, minor, moderate, and major impacts. In all cases, the impact thresholds are defined for adverse impacts. Beneficial impacts are addressed qualitatively.

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

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

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

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

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

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

CUMULATIVE IMPACTS ANALYSIS METHOD

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

Cumulative impacts were determined by combining the impacts of the alternative being considered with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects and plans at National Capital Parks – East and, if applicable, the surrounding area. Table 5, below, summarizes the actions that could affect the various resources at the park, along with the plans and policies of both the park and surrounding jurisdictions, which were discussed in chapter 1. Additional explanation for most of these actions is provided in the narrative below.

The analysis of cumulative impacts was accomplished using four steps:

- **Step 1, Identify Resources Affected** — Fully identify resources affected by either of the alternatives, including the resources addressed as impact topics in chapters 3 and 4 of this document.
- **Step 2, Set Boundaries** — Identify an appropriate spatial and temporal boundary for each resource. The temporal boundaries selected were approximately three years in the past (all

other past actions would be reflected in the descriptions included in the “Affected Environment” chapter), and reasonably foreseeable actions up to about five years in the future. The spatial boundary or study area for each impact topic is listed under each topic.

- **Step 3, Identify Cumulative Action Scenario** — Determine which past, present, and reasonably foreseeable future actions to include with each resource. These are listed in table 4 and described below.
- **Step 4, Cumulative Impact Analysis** — Summarize impacts of these other actions (x) plus impacts of the proposed action (y), to arrive at the total cumulative impact (z). This analysis is included for each resource in this chapter.

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

- **Additional Trail Repair at Fort Dupont and Fort Bunker Hill** — The NPS is engaged in ongoing trail work with the help of the Student Conservation Association at Fort Bunker Hill and Fort Dupont. At Fort Bunker Hill, this trail work includes the repairing and rehabilitating a half-mile of foot trails to stabilized eroded areas and repairing the trail. Similar repair work throughout the Fort Dupont trails system is ongoing from May 2013 through April 2014.
- **Fitness Equipment Installation** — Outdoor fitness equipment is being installed at Fort Mahan at Benning Road (the District of Columbia’s former Benning Library site). Outdoor equipment includes a pipeline fitness system. Clusters of outdoor equipment will occupy approximately a 30-foot by 30-foot area with a total limit of disturbance of 18,000 square feet during construction.
- **Wayfinding and Additional Signage Efforts** — Throughout the CWDW trail system, the NPS is planning to improve the existing wayfinding and signage, including the installation of mile markers and directional posts, replacement of aging signs, and addition of new signage and waysides. Work is expected to be completed in 2013.

TABLE 5. CUMULATIVE IMPACTS ANALYSIS SUMMARY

Impact Topic	Study Area	Past Actions	Present Actions	Future Actions
Soils	Entire CWDW Trail and vicinity	None	Additional Fort Dupont/Bunker Hill trail repair, fitness equipment installation, wayfinding and additional signage efforts	None
Hydrology and water quality	Entire CWDW Trail and vicinity	None	Ongoing stormwater control efforts throughout the District	None
Wetlands	Project area	None	None	None
Cultural landscapes	CWDW Cultural Landscape boundary	None	Additional Fort Dupont/Bunker Hill trail repair, wayfinding and additional signage efforts	None
Visitor use and experience	Entire CWDW Trail and vicinity	None	Additional Fort Dupont/Bunker Hill trail repair, fitness equipment installation, wayfinding and additional signage efforts	None

SOILS

METHODOLOGY AND ASSUMPTIONS

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

STUDY AREA

The geographic study area for impacts on soils is contained within the boundaries of the proposed trail and fort sites as well as associated areas that would be used for construction staging areas for equipment and supplies. It is expected that construction activities would not occur outside these areas. The study area for cumulative impacts analysis includes the project area (trail and fort sites) and immediately adjacent areas around the project area.

IMPACT THRESHOLDS

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

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

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

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

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

IMPACTS OF ALTERNATIVE 1: NO ACTION

Analysis

Under alternative 1, no repairs or connectivity improvements would be made to the CWDW Hiker-Mountain Biker trail. Current conditions in the project area would continue. Soil damage found throughout the trail system, including numerous areas where soil compaction, erosion, rutting, and ponding have occurred would not be corrected (at least 7,155 square feet of surface area, assuming the existing social trails are 3 feet wide), resulting in continued long-term minor adverse impacts. Continued use of areas with exposed soils in map units that have a high probability of erosion (see table 2), as well as along streambanks, would exacerbate existing erosion of these areas and would lead to long-term moderate adverse impacts to soils. Soil compaction from the use of social trails would continue. If the existing social trails become eroded, it is likely that users will create new social trails to avoid going through the eroded areas (for example, when the existing social trails are muddy). The continuation of the

current situation would contribute to further deterioration of soil conditions, leading to long-term minor adverse impacts.

Cumulative Impacts

Projects that could affect soils include past, ongoing, and future projects at CWDW as well as development that involves construction in or around the project area. Past and ongoing projects include trail maintenance and repair at Fort Bunker Hill and Fort Dupont, signage and wayfinding improvements, and installation of outdoor fitness equipment at the former Benning Library site at Fort Mahan. The trail maintenance and repair at Fort Bunker Hill and Fort Dupont would rehabilitate eroded areas as well as repair poorly maintained trails to minimize additional erosion, resulting in long-term beneficial impacts on soils. The installation of the outdoor fitness center at Fort Mahan would require moving and grading of soil to accommodate the new equipment and would likely result in soil compaction as people use the equipment. During construction, there would be short-term, adverse, negligible impacts, but once construction is complete there would be long-term, adverse, minor effects on soil. Placing new signs and waypoints within the project area would result in short-term, negligible, adverse impacts from digging small post-holes in which to place the signs.

These cumulative actions would result in short-term negligible adverse impacts during construction and long-term beneficial and minor adverse impacts to soils. However, when combined with the localized long-term minor adverse impacts of the no action alternative, cumulative impacts on soils would be long-term, minor, and adverse.

Conclusion

Under the no action alternative, no repairs or connectivity improvements to the CWDW Hiker-Mountain Biker trail would be implemented. Impacts on soils would be long-term, minor, and adverse. Overall cumulative impacts on soils under the no action alternative would be long-term, minor, and adverse.

IMPACTS OF ALTERNATIVE 2: REPAIR, RECONSTRUCT, AND IMPROVE CONNECTIVITY OF THE HIKER-MOUNTAIN BIKER TRAIL (PREFERRED ALTERNATIVE)

Analysis

Alternative 2 would include the repair of eroding, overgrown, and/or destabilized areas of the trail. Approximately 5,225 linear feet of existing trail would be repaired (approximately 0.72 acre), and approximately 2,385 linear feet of new gravel trail would be constructed (approximately 0.33 acre). In addition to trails being repaired and constructed, four deteriorating bridges would be replaced throughout the project area. Repair of the degraded trails would minimize soil erosion because currently exposed soil would be covered so that it does not erode. Construction of the new gravel trails would limit the ability of the soils covered to filter surface water and could increase soil compaction from the gravel; however, the formalized social trails would reduce soil erosion from the existing informal trails and prevent the creation of new social trails in these locations. Removing the potential for new social trails by providing connections from sidewalks to the trail system minimizes the amount of future soil compaction and soil erosion within the project area because people would be inclined to remain on the formal trails instead of creating new social trails. Use of gravel in place of asphalt for the trail connections would not increase impervious surfaces and stormwater runoff and would not contribute additional soil erosion.

Construction activities such as grading and excavating for bridge footers associated with the implementation of trail repairs and connectivity improvements, bridge removal and construction would disturb and modify soils and have the potential to contribute to erosion. BMPs such as stabilizing soil piles and using hay bales and silt fences to prevent soil runoff would be employed to minimize adverse effects to soil during construction. Following construction, disturbed soils would be replaced, to the extent practicable, and revegetated to avoid compaction and erosion. Adherence to an approved erosion

and sedimentation plan would be mandatory during construction. As a result, these impacts would be temporary and localized and would be limited to the construction phase of the project. Impacts from equipment and construction staging would have a localized short-term negligible to minor adverse impact on soils in the staging area. However, it is anticipated that activities associated with alternative 2 would not result in adverse impacts because there would be minimal soil disturbance in these locations.

In the long term, the trail repairs and connectivity improvements would promote use of the paved trails and discourage the use of social trails. Although creating more linear feet of gravel trail would continue impacts from soil compaction, use of gravel would allow the soil beneath those trails to continue infiltration functions. Placement of the new trails would prevent the need for additional social trails because connectivity from sidewalks to the trails would be complete. Without correcting the lack of complete connectivity, additional social trails will likely continue to form.

Alternative 2 would correct soil damage that has resulted from social trails and damaged sections of the existing trail and create conditions that reduce impacts to soils from erosion, destabilization, and normal visitor use of the trail. Implementation of alternative 2 would result in short-term negligible to minor adverse and long-term beneficial impacts on soils in the project area.

Cumulative Impacts

Past, present, and reasonable foreseeable projects that could affect soils are the same as described under alternative 1. These projects would result in short-term negligible to minor adverse impacts and long-term minor adverse and beneficial impacts to soils. When combined with the short-term minor adverse and long-term beneficial impacts of alternative 2, cumulative impacts on soils would be short-term, minor adverse and long-term beneficial.

Conclusion

Under alternative 2, short-term impacts from soils disturbance would result in negligible to minor adverse impacts from construction activities. Trail repair and connectivity improvements would formalize social trails and stabilize eroding soils and would result in long-term beneficial impacts from less soil compaction and stabilized soils. Overall cumulative impacts on soils under alternative 2 would be short-term, minor adverse and long-term beneficial.

HYDROLOGY AND WATER QUALITY

METHODOLOGY AND ASSUMPTIONS

The NPS' *Management Policies 2006* state that the NPS would "take all necessary actions to maintain or restore the quality of surface waters and ground waters within the parks consistent with the Clean Water Act and all other applicable federal, state, and local laws and regulations" (NPS 2006).

A water quality standard defines the water quality goals of a water body by designating uses to be made of the water, setting minimum criteria to protect the uses, and preventing degradation of water quality through anti-degradation provisions. The anti-degradation policy is only one portion of a water quality standard. Part of this policy (40 CFR Part 131.12[a] [2]) strives to maintain water quality at existing levels if it is already better than the minimum criteria. Anti-degradation should not be interpreted to mean that "no degradation" can or would occur because, even in the most pristine waters, degradation may be allowed for certain pollutants as long as it is temporary and short term.

STUDY AREA

The geographic study area for hydrology and water quality includes the entire project area but focuses on the three tributaries (Fort Dupont, Pope Branch, and Piney Run), near which there are proposed trails, including construction access and storage areas for construction equipment.

IMPACT THRESHOLDS

The following thresholds were used to determine the magnitude of impacts on hydrology and water quality:

Negligible: Impacts (chemical, physical, or biological) would be barely detectable but would be within desired water quality standards or criteria and would be within historical or desired water quality conditions. No mitigation would be implemented.

Minor: Impacts (chemical, physical, or biological) would be detectable but would be within desired water quality standards or criteria and would be within historical or desired water quality conditions. Mitigation, if needed, would be simple and successful.

Moderate: Impacts (chemical, physical, or biological) would be detectable, and historical baseline or desired water quality conditions would be temporarily altered; however, overall water quality would remain within regulatory standards. Mitigation measures to offset potential adverse impacts could be extensive and successful.

Major: Impacts (chemical, physical, or biological) would be detectable and would be frequently altered from the historical baseline or desired water quality conditions; and/or chemical, physical, or biological water quality standards or criteria would temporarily be slightly and singularly exceeded. Mitigation measures to offset potential adverse impacts would be extensive, and their success could not be guaranteed.

Duration: Short-term impacts occur during all or part of alternative implementation or over a period of days or weeks; long-term impacts extend beyond implementation of the alternative or more than several weeks.

IMPACTS OF ALTERNATIVE 1: NO ACTION

Analysis

Under the no action alternative, the proposed repair and connectivity improvements of the CWDW Hiker-Mountain Biker trail would not occur. Under the no action alternative, there would be no construction activities, no excavation of soils, placement of fill, or removal of vegetation. There would be no short-term impact on hydrology or water quality because construction activities would not occur. Under the no action alternative, existing conditions of the stream, including stormwater runoff, erosion and sediment input, and pollutant runoff, would remain.

Under current conditions, hydrologic conditions within the three tributaries, including unmanaged stormwater runoff, would continue to deteriorate the streambed conditions and continue to cut along the stream banks. Sediment input would continue under current conditions and carry nutrients as well as pollutants, such as oil, grease, and road salts, in the runoff from impervious surfaces. Pollutant loads would continue to directly impact the three tributaries and the Anacostia River watershed as a whole.

If existing conditions remain, it is likely the stream banks would continue to erode, pushing sediment and pollutants from stormwater runoff towards the Anacostia River. The no action alternative would result in the continuation of long-term minor adverse impacts to hydrology and water quality.

Cumulative Impacts

Past, present, and reasonably foreseeable projects that could impact hydrology and water quality at the CWDW involve construction efforts in or around the project area. Past and ongoing projects include stormwater management improvements, Total Maximum Daily Loads (TMDLs), and water quality monitoring of the each tributary and the Anacostia River watershed. TMDLs and water quality monitoring of the tributaries would allow for updated sediment, pollutant, and streamflow information. Stormwater management improvements would use the information gathered from each monitoring station to apply to the tributaries. Routine stormwater maintenance in and around the project area would continue to focus on riparian buffers; swells; retention areas; and permeable surfaces, specifically trails. These past and ongoing projects would result in beneficial impacts to hydrology and water quality.

When combined with the long-term minor adverse impacts of alternative 1, cumulative impacts on hydrology and water quality would be long-term beneficial and minor adverse.

Conclusion

Implementation of the no action alternative would result in the continuation of long-term minor adverse impacts to hydrology and water quality. Overall cumulative impacts to hydrology and water quality under the no action alternative would be would be long-term, beneficial, and minor adverse impacts.

IMPACTS OF ALTERNATIVE 2: REPAIR, RECONSTRUCT, AND IMPROVE CONNECTIVITY OF THE HIKER-MOUNTAIN BIKER TRAIL (PREFERRED ALTERNATIVE)

Analysis

Under alternative 2, the project would include repairs to overgrown, eroding, and unstable areas of the trail, in addition to the replacement or repair of foot bridges throughout the park. There would be approximately 5,225 linear feet of existing trail repaired and approximately 2,385 linear feet of new trail constructed. Trail repair would minimize soil erosion and decrease runoff into the surrounding streams through soil compaction and revegetation post construction. New connector trails would be gravel, not asphalt, and would not increase impervious surfaces, allowing for partial water infiltration. New trails would formalize existing social trails, reducing soil erosion within the project area, resulting in long-term beneficial impacts.

Construction activities would contribute short-term adverse impacts from increased sedimentation and streambank destabilization during bridge replacement activities. BMPs would be used to prevent impacts from erosion in accordance with DDOE regulations (DDOE 2003a). BMPs used during construction could include the use of hay bales, silt fences, and sediment traps to reduce soil runoff, overall minimizing adverse impacts during construction. After construction is complete, the limit of disturbance and surrounding stream bank would be revegetated to maintain bank stability. The project would follow an approved erosion and sedimentation plan during construction. As a result, construction impacts would be short-term negligible to minor adverse from bank disturbance and the potential for increased sedimentation. Overall, the impact on hydrology and water quality in the project area would be long-term beneficial with short-term minor adverse impacts.

Cumulative Impacts

Impacts to hydrology and water quality would be the same as described under alternative 1 and would result in long-term beneficial impacts. When combined with the long-term beneficial and short-term minor adverse impacts of alternative 2, cumulative impacts on hydrology and water quality would be long-term beneficial and short-term minor adverse.

Conclusion

Alternative 2 would result in long-term beneficial impacts on hydrology and water quality from reduction in stormwater runoff. There would be short-term minor adverse impacts to hydrology and water quality during the construction period. Overall cumulative impacts on hydrology and water quality under alternative 2 would be long-term beneficial with short-term minor adverse impacts.

WETLANDS

METHODOLOGY AND ASSUMPTIONS

The NPS has adopted a “no net loss” of wetlands policy. Executive Order 11990, “Protection of Wetlands,” states that federal agencies are to avoid to the extent possible long-term and short-term impacts associated with the destruction or modification of wetlands and avoid direct and indirect support of new construction in wetlands whenever practical alternatives exist. The USACE regulates development in wetland areas pursuant to section 404 of the Clean Water Act (33 CFR Parts 320–330). DO 77-1, *Wetland Protection* (NPS 2012a), and *Procedural Manual 77-1, Wetland Protection* (NPS 2012b) provide NPS policies and procedures for complying with Executive Order 11990. As stated therein:

Actions proposed by the NPS that have the potential to have adverse impacts on wetlands will be addressed in an EA or an Environmental Impact Statement (EIS). If the preferred alternative in an EA or EIS will result in adverse impacts on wetlands, a “Statement of Findings” documenting compliance with this Director’s Order and Procedural Manual 77-1 will be completed. Actions that may be excepted from the Statement of Findings requirement are identified in the Procedural Manual (NPS 2012b)

This project is exempted from the statement of findings requirement. It is an “excepted action” under DO 77-1 because it would involve a foot/bicycle trail or boardwalk where the primary purpose includes public education, interpretation, or enjoyment of wetland resources and where the total wetland impact from fill placement would be 0.1 acre or less (NPS 2012a). The park explored options of adjusting the trail to avoid the wetland entirely, but the areas to east or west are unsuitable for trail use.

STUDY AREA

The geographic study area for the wetland includes the project area for the proposed repair and connectivity improvements within the CWDW Hiker-Mountain Biker trail. Trail construction would not occur outside this area.

IMPACT THRESHOLDS

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

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

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

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

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

IMPACTS OF ALTERNATIVE 1: NO ACTION

Analysis

Under the no action alternative, the proposed repair and connectivity improvements to the CWDW Hiker-Mountain Biker trail would not occur. The foot bridge would not be constructed, and no wetland disturbance, excavation of soils, placement of fill, or removal of vegetation as a result of this alternative. The palustrine wetland at location 30 would not be affected because construction activities would not occur and the continued use of the existing trail would not affect the wetlands. The no action alternative would result in no impacts on wetlands in the project area.

Cumulative Impacts

Because no impacts to wetlands would occur under the no action alternative, there would be no cumulative impacts.

Conclusion

Implementation of the no action alternative would result in no adverse impacts on wetlands in the project area, and no cumulative impacts would occur.

IMPACTS OF ALTERNATIVE 2: REPAIR, RECONSTRUCT, AND IMPROVE CONNECTIVITY OF THE HIKER-MOUNTAIN BIKER TRAIL (PREFERRED ALTERNATIVE)

Under alternative 2, a new boardwalk would be constructed across the existing trail at location 30 where the asphalt trail has deteriorated. Based on the May 2013 visual survey, an approximately 600-square-foot wetland exists on either side of the existing trail. A 20-foot-long by 6-foot-wide, pre-fabricated boardwalk would be placed over the existing deteriorating trail in this location, and the existing deteriorating asphalt would be removed so that the wetland can be contiguous. Wetland impacts would be expected only in the area adjacent to the existing trail at location 30, where approximately 42 linear feet of trail would be removed. No heavy equipment would be used in the wetland area, and four sonotubes, or concrete forms, would be placed outside of the wetland/seep area. All construction staging would remain within the vicinity of the existing trail. During the removal of the existing asphalt, short-term disturbance may occur to the wetland because it is adjacent to either side of the existing trail, but long-term impacts to loss of the wetland are not anticipated. Construction activities would incorporate BMPs, such as the use of silt fencing, to minimize impacts and to prevent sediment and fill material from accumulating in the wetland. All excess or waste asphalt would be removed from the site. Under alternative 2, overall impacts to wetlands would be short-term and minor with long-term beneficial impacts.

Cumulative Impacts

No past, present, or reasonably foreseeable projects would impact the wetland at location 30; therefore, there would be no cumulative impacts to wetlands.

Conclusion

Alternative 2 would result in short-term minor adverse impacts to the wetland area adjacent to the existing trail at location 30 from disturbance during construction. Long-term impacts would be beneficial as the asphalt continues to deteriorate, allowing wetland areas on either side of the trail to be contiguous. There would be no cumulative impacts to wetlands.

CULTURAL RESOURCES

GENERAL METHODOLOGY AND ASSUMPTIONS

The NPS categorizes cultural resources by the following categories: cultural landscapes, historic structures and districts, archeological resources, museum objects, and ethnographic resources. As noted in “Impact Topics Analyzed in this Environmental Assessment” of chapter 1, only impacts on cultural landscapes, historic structures and districts, and archeological resources are of potential concern for this project. Because ethnographic resources and museum objects would not be affected, these topics were dismissed from consideration.

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

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

CULTURAL LANDSCAPES

METHODOLOGY AND ASSUMPTIONS

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

STUDY AREA

The National Capital Parks – East section of the CWDW is home to a series of protected open spaces along the hilltops southeast of the Anacostia River in the District of Columbia. The park holdings encompass the Civil War defense areas of Fort Mahan, Fort Chaplin, Fort Dupont, Fort Davis, Fort Stanton, Fort Ricketts, Fort Carroll, and Fort Greble. Along with a link to the country’s early history, these defense sites contain green space that received some of the earliest urban planning efforts related to public recreation in the United States (in the 1902 “Improvement of the Park System of the District of Columbia”), initially planned as the Fort Drive, and later corroborated in the 1960s NCPC’s recommendations emphasizing a “fort park system” that stressed recreation with a continuous “bicycle and pedestrian way.” The importance of the historic earthworks and the greenbelt that these parks create along the ridge surrounding the city makes this a significant open space element in the nation’s capital.

The study area is the 7-mile CWDW Hiker-Mountain Biker trail located in southeast Washington, D.C. The project would involve Fort Mahan, Fort Chaplin, Fort Dupont, Fort Davis, Fort Stanton, and Fort Ricketts, all administrative units of National Capital Parks – East.

IMPACT THRESHOLDS

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

Negligible: The impact is at the lowest level of detection, with neither adverse nor beneficial consequences.

Minor: Alteration of a pattern(s) or feature(s) of a historic property listed in or eligible for the national register would not diminish the integrity of a character-defining feature(s) or the overall integrity of the historic property.

Moderate: The impact would alter a character-defining feature(s) of a historic property and diminish the integrity of that feature(s) of the historic property.

Major: The impact would alter a character-defining feature(s) of the historic property and severely diminish the integrity of that feature(s) and the overall integrity of the historic property.

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

Duration: Short-term impacts would occur during all or part of alternative implementation; long-term impacts would extend beyond the implementation of the alternative.

IMPACTS OF ALTERNATIVE 1: NO ACTION

Analysis

Under alternative 1, no repairs or connectivity improvements would be made to the CWDW Hiker-Mountain Biker trail. Continuation of current conditions would contribute to deterioration of existing environmental conditions. The remains of the forts and all elements of the historic landscape would continue as they are. Under alternative 1, there would be long-term minor adverse impacts on the historic and cultural landscape because trail conditions would continue to deteriorate.

Cumulative Impacts

Ongoing cumulative impacts to the historic and cultural landscape include the results of a partnership between the NPS and the Student Conservation Association to work on a variety of maintenance projects and trail rehabilitation in the area of Fort Dupont and Fort Bunker Hill. These maintenance projects would have a long-term beneficial impact on the historic and cultural landscape because they would expand and enhance visitor use and implement timely maintenance.

Ongoing cumulative impacts also include the repair and replacement of trail markers, trail signs, waysides, signs, railings, steps, and other park features. These efforts would also beneficially affect the historic and cultural landscape in the long term because they would not only improve visitor experience but also provide more comprehensive interpretation of the historic features of the park.

When combined with the long-term minor adverse impacts to the cultural landscape under alternative 1, overall cumulative impacts would be long-term, minor adverse, and also beneficial.

Conclusion

Alternative 1 would have long-term minor adverse impacts on the historic and cultural landscape because the trail, an element of the historic landscape, would continue to deteriorate. Access to trails would not be improved and proper deterrents for unauthorized vehicles would not be installed. Overall cumulative impacts would have both long-term minor adverse and long-term beneficial impacts on the landscape.

IMPACTS OF ALTERNATIVE 2: REPAIR, RECONSTRUCT, AND IMPROVE CONNECTIVITY OF THE HIKER-MOUNTAIN BIKER TRAIL (PREFERRED ALTERNATIVE)

Analysis

Under alternative 2, trail repair, trail construction and connectivity improvements, bridge repair and replacement, and the installation of motor vehicle prevention measures would take place within the study area.

Asphalt resurfacing would take place on 5,225 linear feet of existing trail. This process would involve asphalt demolition, repairs and resurfacing, as well as turf grading at six locations throughout the area of Fort Mahan, Fort Davis, and Fort Dupont. Trail resurfacing maintains existing access to the park by visitors. Six-foot-wide asphalt trail surfaces would be replaced in kind with minimal disturbance to the fabric of the park. No resurfacing would occur within the boundaries of the Civil War forts or any of their historic defensive features. Trail resurfacing would have a long-term beneficial impact on the historic and cultural landscape because it would provide needed maintenance to the trail network and improve visitor use and experience.

For new trail locations, 6-foot-wide trails would be constructed in 10 locations, extending from the woods line to the curb or sidewalk, for a total of 2,385 linear feet of new trail. No new trail construction would occur within the boundaries of the Civil War forts or any of their historic defensive features. Construction of new trailheads at road crossing would have a short-term minor adverse impact on the historic and cultural landscape during construction with no long-term impacts because new trails would be in accordance with the Secretary of the Interior's Standards.

A total of 27 vehicle prevention structures would be installed at 14 road crossings, typically with two at each crossing. All vehicle prevention would be new, with the exception of one road crossing at East Capitol Street NE where existing motor vehicle prevention structures would be replaced. The vehicle prevention measures would assist in preserving the existing trail network in that it would stop unauthorized vehicles from entering park land. Vehicle prevention measures would also stop any similar damage to the Civil War forts and any other historic defensive features related to the CWDW. No new construction would occur within the boundaries of the Civil War forts or any of their historic defensive features. Because vehicle prevention barriers would stop unauthorized vehicles from entering park land and potential causing damage to trails, historic landscape features, or sensitive environmental areas, they would have a long-term beneficial impact on the historic and cultural landscape.

Four replacement bridges and one boardwalk would be installed at five separate locations. Replacing existing deteriorated bridges maintains existing access to the park by visitors. The new boardwalk would also assist in preserving the landscape because it would be associated with preservation of an environmentally sensitive area. The 6-foot-wide Enwood® laminated wood-girder-style structures would replace the existing wood foot bridges with minimal disturbance to the fabric of the park. No bridge would be replaced within the boundaries of the Civil War forts or any of their historic defensive features. Bridge replacement and construction would provide needed maintenance to the park infrastructure and

improve visitor use and experience and have a short-term minor impact on the historic and cultural landscape.

Under alternative 2, the existing park infrastructure would be improved for visitors by enhancing access to the existing trail network, improving environmentally sensitive areas, and preventing damage to the park resources and historic fabric by unauthorized vehicles. These actions would have short-term minor and long-term beneficial impacts on the historic and cultural landscape of the CWDW.

Cumulative Impacts

Cumulative impacts to cultural landscapes would be the same as described for alternative 1, resulting in long-term beneficial impacts. When combined with the short-term minor adverse and long-term beneficial impacts under alternative 2, there would be short-term minor adverse and long-term beneficial impacts to cultural landscapes.

Conclusion

Alternative 2 would have both short-term minor adverse and long-term beneficial impacts on the historic and cultural landscape from the repair of deteriorating conditions throughout the park. Overall cumulative impacts to cultural landscapes under alternative 2 would be short-term minor adverse and long-term beneficial.

VISITOR USE AND EXPERIENCE

METHODOLOGY AND ASSUMPTIONS

The purpose of this impact analysis is to assess the effects of the alternatives on visitor use and experience at the CWDW. To determine impacts, the current uses at the park were considered and the potential effects of the construction of the proposed trail repairs and connectivity improvements on visitor use and experience were analyzed. The types of visitor experience and use/visitation that occur in the CWDW and that might be affected by the proposed actions, as well as noise experienced by visitors, were considered.

STUDY AREA

The study area for visitor use and experience is the boundary for the project area. The boundary includes the trail corridor and the six fort sites that it connects. The study area for cumulative impacts analysis encompasses the CWDW and surrounding properties.

IMPACT THRESHOLDS

The following thresholds were defined for visitor use and experience:

Negligible: Visitors would likely be unaware of impacts associated with implementation of the alternative. Visitor use and/or experience would not noticeably change, and there would be no change in any defined indicators of visitor satisfaction or behavior.

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

Moderate: A few critical characteristics of the desired visitor experience would change, and/or the number of participants engaging in a specified activity would be altered. Some visitors who desire their continued use and enjoyment of the activity/visitor experience might pursue their choices in

other available local or regional areas. Visitor satisfaction would begin to decline. Mitigation measures would probably be necessary and would likely be successful.

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

IMPACTS OF ALTERNATIVE 1: NO ACTION

Analysis

Under the no action alternative, the proposed repairs and connectivity improvements would not be implemented. Under this alternative, degraded trail conditions would continue, including areas of rutting and ponding on unpaved sections and damaged asphalt on paved sections. Bridges would continue to deteriorate, bicycle and pedestrian access would be discontinuous in some areas, and the trail would remain generally inaccessible to individuals with mobility impairments. Visitors would continue to use the existing trail system in its deteriorating condition, which would detract from the overall visitor experience. The no action alternative would result in long-term minor adverse impacts on visitor use and experience.

Cumulative Impacts

Projects that could affect visitor use and experience include past, ongoing, and future projects at the CWDW as well as development that involves construction in or around the project area. Ongoing projects include trail maintenance and repair at Fort Bunker Hill and Fort Dupont and site restoration and installation of outdoor fitness equipment at Fort Mahan. These projects would require some temporary trail and site closures related to trail repairs and construction. In addition, demolition and construction activities would subject visitors to increased noise levels.

Together, the cumulative actions described above would result in short-term minor adverse impacts and long-term beneficial impacts to visitor use and experience. When combined with the localized long-term minor adverse impacts of the no action alternative, cumulative impacts on visitor use and experience would be short-term, minor, and adverse; long-term, minor, and adverse; and long-term beneficial.

Conclusion

Implementation of the no action alternative would result in long-term minor adverse impacts on visitor use and experience from the continued deterioration of trail conditions. Combined with other projects in the study area, there would be short-term, minor, and adverse; long-term, minor, and adverse; and long-term beneficial impacts to visitor use and experience.

IMPACTS OF ALTERNATIVE 2: REPAIR, RECONSTRUCT, AND IMPROVE CONNECTIVITY OF THE HIKER-MOUNTAIN BIKER TRAIL (PREFERRED ALTERNATIVE)

Analysis

Under alternative 2, implementation of trail repairs and connectivity improvements would allow for continuous access from Fort Mahan to Fort Ricketts, with improved safety conditions and infrastructure on the trail and improved connections at road crossings. Any ongoing illegal use by vehicles would be reduced from the increase in vehicle prevention measures along the trail, providing a safer experience for visitors. Visitors with mobility impairments would be able to access the trail in areas where access is currently limited or nonexistent. The visitor experience would benefit from the improved park facilities.

Alternative 2 would require temporary, localized trail closures, and visitors would be subjected to noise from construction activities, equipment, and personnel. Resulting impacts on visitor use and experience would be short-term, minor, and adverse. As a result of the completion of the proposed repairs and connectivity improvements, an increased volume of pedestrians and bicyclists would have the opportunity to access areas of the park where deteriorated trail conditions and lack of access currently constrain use. Overall, alternative 2 would be expected to have short-term minor and adverse and long-term beneficial impacts to visitor use and experience as a result of the proposed trail repair and connectivity improvements.

Cumulative Impacts

Cumulative projects that could affect visitor use and experience include the projects described above for the no action alternative. Together, these projects would result in short-term minor adverse impacts and long-term beneficial impacts to visitor use and experience. When combined with the short-term minor adverse and long-term beneficial impacts of alternative 2, cumulative impacts on visitor use and experience would be short-term, minor, and adverse and long-term beneficial.

Conclusion

Implementation of alternative 2 would result in short-term minor adverse impacts on the visitor use and experience from temporary trail closures and noise during construction, and long-term beneficial impacts from the completion of an improved trail system. Combined with other projects in the study area, there would be short-term minor adverse and long-term beneficial impacts on visitor use and experience.

CHAPTER 5: CONSULTATION AND COORDINATION

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

All consultations with the DC HPO, as mandated in section 106 of NHPA, are occurring as part of the development of this EA. The proposed activities have the potential to impact the several of the national register-listed properties contained within the CWDW Historic District.

The NPS began coordination with the DC HPO and ACHP regarding the repair, reconstruction, and connection improvements of the CWDW Hiker-Biker trail in June 2013 (see appendix A). The DC HPO replied on September 9, 2013, and noted that potential cultural resources in the project area include the National Register-listed Forts as well as potential resources related to Contraband Camps and associated post-Civil War African American communities. The DC HPO requested documentation of these important resources, where appropriate, and requested consideration of potential camp-related archeological resources. The DC HPO also requested a copy of the EA and Assessment of Effect, when available.

In accordance with Section 7 of the Endangered Species Act of 1973, in June 2013 the NPS sent a letter to solicit comments from the USFWS regarding the existence of threatened or endangered species in the project area. In September 2013 the USFWS responded, confirming that, except for occasional transient individuals, there are no threatened or endangered species in the project area (see appendix A). The USFWS noted that disturbance to the bald eagle should be avoided. The proposed alternatives would not impact this species. Additionally, the USFWS recommended avoiding wetland impacts. Wetlands impacts have been fully analyzed and included in the EA analysis.

In June 2013 the NPS sent a letter to the DDOE to request information on rare, threatened, and endangered species in the project area. No response was received.

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CHAPTER 6: LIST OF PREPARERS

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

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CHAPTER 6: GLOSSARY AND ACRONYMS

GLOSSARY OF TERMS

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

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

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

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

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

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

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

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

Effect: Federal action on a national register-listed or eligible property that results in a change, beneficial or adverse, in the quality or characteristics that qualify the property for inclusion on the national register.

Adverse Effect: Action that results in the total or partial destruction or alteration of a national register-listed or eligible property. Adverse effect may also result if a property is isolated from its surrounding environment, if neglect of the property results in the deterioration or destruction of the property, and/or if the land occupied by the property is sold or transferred, and there are no provisions in the deed or transfer agreement to provide for the preservation, maintenance, or use of the property, etc.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Scoping — Scoping, as part of NEPA, requires examining a proposed action and its possible impacts; establishing the depth of environmental analysis needed; determining analysis procedures, data needed,

and task assignments. The public is encouraged to participate and submit comments on proposed projects during the scoping period.

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

Significance — Significance of cultural resources is evaluated in terms of national register criteria published in 36 CFR Part 60.

ACRONYMS

Advisory Council on Historic Preservation	(ACHP)
Area of Potential Effects	(APE)
Civil War Defenses of Washington	(CWDW)
Code of Federal Regulation	(CFR)
Council on Environmental Quality	(CEQ)
Director's Order	(DO)
Energy Independence and Security Act	(EISA)
Environmental Assessment	(EA)
National Capital Planning Commission	(NCPC)
National Environmental Policy Act	(NEPA)
National Historic Preservation Act	(NHPA)
National Park Service	(NPS)
National Register of Historic Places	(national register)
Natural Resources Conservation Service	(NRCS)
Planning, Environment, and Public Comment website	(PEPC)
Public Law	(PL)
Traditional Cultural Property	(TCP)
United States Army Corps of Engineers	(USACE)
United States Code	(USC)
United States Department of Agriculture	(USDA)
United States Fish and Wildlife Service	(USFWS)

CHAPTER 7: REFERENCES

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APPENDIX A

CONSULTATION LETTERS

APPENDIX A

CONSULTATION LETTERS



United States Department of the Interior

NATIONAL PARK SERVICE

National Capital Parks-East
1900 Anacostia Drive SE
Washington, D.C. 20020

L7617 (NPS-NACE/RM)

June 5, 2013

Mr. Keith A. Anderson
Acting Director
D.C. Department of the Environment
1200 First Street NE, 5th Floor
Washington, DC 20002

RE: Proposed Repair and Connectivity Improvements of the Civil War Defenses of
Washington Hiker/ Mountain Biker Trail

Dear Mr. Anderson,

The National Park Service (NPS) National Capital Parks-East proposes to repair and improve connectivity of the Civil War Defenses of Washington (CWDW) Hiker/Mountain Biker Trail. We are now preparing an Environmental Assessment (EA) to evaluate effects of the project, in accordance with the National Environmental Policy Act (NEPA) of 1969.

The proposed project area is a 7-mile hiker/mountain biker trail located in Southeast Washington, D.C. and would involve Fort Mahan, Fort Dupont, Fort Davis, Fort Stanton, and Fort Ricketts; all administrative units of National Capital Parks-East. The project would include tasks that improve connectivity of the trail system by creating connecting trail segments, installing new bridges and replacing several deteriorated bridges. Additional work items would also include the installation of standard motor vehicle prevention and the resurfacing of asphalt pavement. The project would also include installation of six prefabricated bridged (two new bridges, four replacements of existing bridges), 11 sections of new trail to improve connectivity, installation of 28 new vehicle prevention structures, and five areas where existing asphalt would be resurfaced. One new bridge would include the removal of the existing culvert and repairing the stream and riparian area.

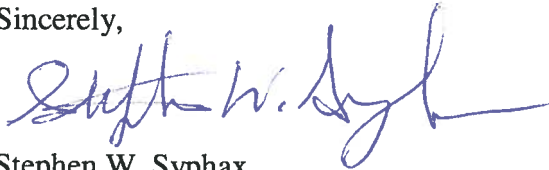
The National Capital Parks-East portion of the CWDW is a series of protected open spaces along the hilltops southeast of the Anacostia River in the District of Columbia and nearby Maryland. The park holdings encompass the Civil War defense areas of Fort Mahan, Fort Chaplin, Fort Dupont, Fort Davis, Fort Stanton, Fort Ricketts, Battery Carroll, Fort Greble, and extend into Maryland with Fort Foote along the Potomac River. Along with a link to the country's history, these former defense sites, along with the corridors parkland that connect them, constitute green space that evolved from some of the earliest urban planning efforts related to public recreation in

the United States (in the 1902 "Improvement of the Park System of the District of Columbia"). Beginning with legislation passed in 1924 that established the National Capital Park Commission (Public Law 592, 43 Stat. 463), which was later renamed the National Capital Planning Commission (NCPC) in 1926 (44 Stat. 374), the CWDW was a part of the park, parkway, and playground system of the National Capital. Initially planned as the Fort Drive that helped "to preserve the forests and natural scenery in and about Washington", and later corroborated in the 1960's National Capital Planning Commission recommendations emphasizing a "fort park system" emphasizing recreation with a continuous "bicycle and pedestrian way."

The purpose of this initial correspondence is to request a list of any state listed species or habitats that may occur on the proposed project sites and to solicit any early input or concerns that you may have regarding this proposed action. We would appreciate written confirmation from your office. A letter is also being sent to the U.S. Fish and Wildlife Service to solicit their input. If you have questions or require further information, please contact Robert Mocko at 202-690-5170 or Robert_Mocko@nps.gov.

Thank you in advance for your cooperation in this matter.

Sincerely,



Stephen W. Syphax
Chief of Resources Management

Enclosure: Map of Project Area

bcc:
NACE File
RM File
NACE Mocko

S:\RM\Mocko\00000 NACE Files\2013 Active Projects\2013-29 Hiker Biker Trail EA



United States Department of the Interior

NATIONAL PARK SERVICE

National Capital Parks-East

1900 Anacostia Drive SE

Washington, D.C. 20020

L7617 (NPS-NACE/RM)

June 5, 2013

Ms. Genevieve LaRouche
Field Supervisor
Chesapeake Bay Field Office
U.S. Fish and Wildlife Service
177 Admiral Cochrane Drive
Annapolis, MD 21401

RE: Proposed Repair and Connectivity Improvements of the Civil War Defenses of
Washington Hiker/ Mountain Biker Trail

Dear Ms. LaRouche:

The National Park Service (NPS) National Capital Parks-East proposes to repair and improve connectivity of the Civil War Defenses of Washington (CWDW) Hiker/Mountain Biker Trail. We are now preparing an Environmental Assessment (EA) to evaluate effects of the project, in accordance with the National Environmental Policy Act (NEPA) of 1969.

The proposed project area is a 7-mile hiker/mountain biker trail located in Southeast Washington, D.C. and would involve Fort Mahan, Fort Dupont, Fort Davis, Fort Stanton, and Fort Ricketts; all administrative units of National Capital Parks-East. The project would include tasks that improve connectivity of the trail system by creating connecting trail segments, installing new bridges and replacing several deteriorated bridges. Additional work items would also include the installation of standard motor vehicle prevention and the resurfacing of asphalt pavement. The project would also include installation of six prefabricated bridges (two new bridges, four replacements of existing bridges), 11 sections of new trail to improve connectivity, installation of 28 new vehicle prevention structures, and five areas where existing asphalt would be resurfaced. One new bridge would include the removal of the existing culvert and repairing the stream and riparian area.

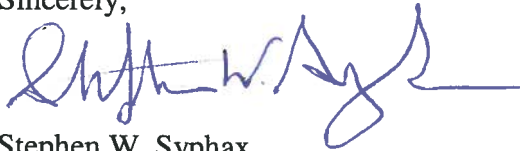
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space that evolved from some of the earliest urban planning efforts related to public recreation in the United States (in the 1902 "Improvement of the Park System of the District of Columbia"). Beginning with legislation passed in 1924 that established the National Capital Park Commission (Public Law 592, 43 Stat. 463), which was later renamed the National Capital Planning Commission (NCPC) in 1926 (44 Stat. 374), the CWDW was a part of the park, parkway, and playground system of the National Capital. Initially planned as the Fort Drive that helped "to preserve the forests and natural scenery in and about Washington", and later corroborated in the 1960's National Capital Planning Commission recommendations emphasizing a "fort park system" emphasizing recreation with a continuous "bicycle and pedestrian way."

We are writing you to request a list of federally listed species that may be impacted by this proposed project and to initiate informal Section 7 consultation. A letter is also being sent to the D.C. Department of Environmental (Fish and Wildlife Division) to solicit their input. If you have questions or require further information, please contact Robert Mocko at 202-690-5170 or Robert_Mocko@nps.gov.

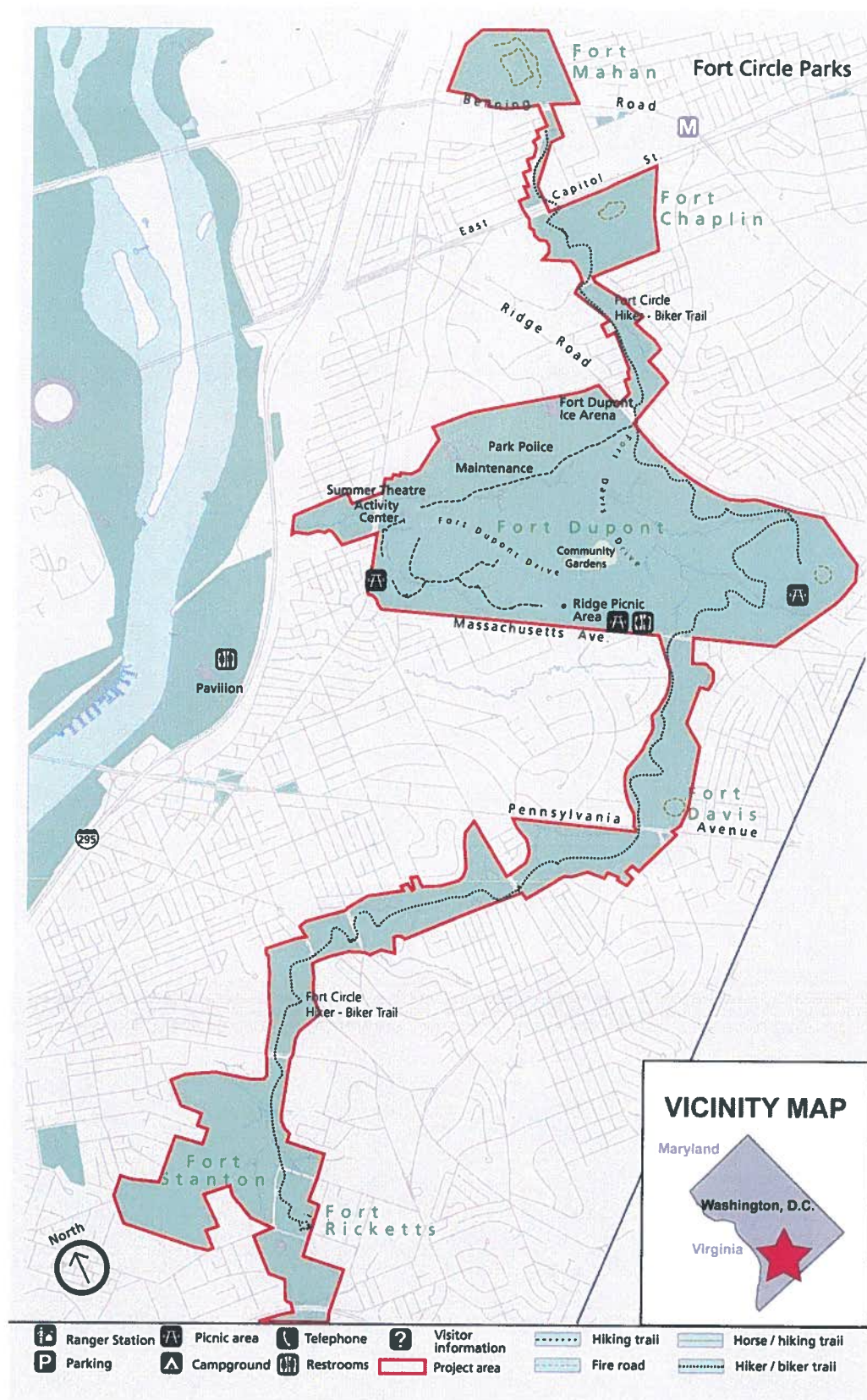
Thank you in advance for your cooperation in this matter.

Sincerely,



Stephen W. Syphax
Chief of Resources Management

Enclosure: Map of Project Area



bcc:
NACE File
RM File
NACE Mocko

S:\RM\Mocko\00000 NACE Files\2013 Active Projects\2013-29 Hiker Biker Trail EA



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, Maryland 21401
<http://www.fws.gov/chesapeakebay>



September 18, 2013

United States Department of the Interior
National Park Service
National Capital Parks-East
1900 Anacostia Drive SE
Washington, D.C. 20020

*RE: Proposed repair and Connectivity Improvements of the Civil War Defenses of Washington
Hiker/Mountain Biker Trail*

Dear Stephen W. Syphax:

This responds to your letter, received June 5, 2013, requesting information on the presence of species which are federally listed or proposed for listing as endangered or threatened in the above referenced project area. We have reviewed the information you enclosed and are providing comments in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

Except for occasional transient individuals, no proposed or federally listed endangered or threatened species are known to exist within the project impact area. Therefore, no Biological Assessment or further section 7 consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or should additional information on the distribution of listed or proposed species become available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. Limited information is currently available regarding the distribution of other rare species in the District of Columbia. However, the Nature Conservancy and National Park Service (NPS) have initiated an inventory of rare species within the District. For further information on such rare species, you should contact Tanya Shenk of the National Park Service at (970) 267-2193.



Effective August 8, 2007, under the authority of the Endangered Species Act of 1973, as amended, the U.S. Fish and Wildlife Service (Service) removed (delist) the bald eagle in the lower 48 States of the United States from the Federal List of Endangered and Threatened Wildlife. However, the bald eagle will still be protected by the Bald and Golden Eagle Protection Act, Lacey Act and the Migratory Bird Treaty Act. As a result, starting on August 8, 2007, if your project may cause "disturbance" to the bald eagle, please consult the "National Bald Eagle Management Guidelines" dated May 2007.

If any planned or ongoing activities cannot be conducted in compliance with the National Bald Eagle Management Guidelines (Eagle Management Guidelines), please contact the Chesapeake Bay Ecological Services Field Office at 410-573-4573 for technical assistance. The Eagle Management Guidelines can be found at:

<http://www.fws.gov/northeast/ecologicalservices/pdf/NationalBaldEagleManagementGuidelines.pdf>

In the future, if your project can not avoid disturbance to the bald eagle by complying with the Eagle Management Guidelines, you will be able to apply for a permit that authorizes the take of bald and golden eagles under the Bald and Golden Eagle Protection Act, generally where the take to be authorized is associated with otherwise lawful activities.

An additional concern of the Service is wetlands protection. Federal and state partners of the Chesapeake Bay Program have adopted an interim goal of no overall net loss of the Basin's remaining wetlands, and the long term goal of increasing the quality and quantity of the Basin's wetlands resource base. Because of this policy and the functions and values wetlands perform, the Service recommends avoiding wetland impacts. All wetlands within the project area should be identified, and if alterations of wetlands is proposed, the U.S. Army Corps of Engineers, Baltimore District, should be contacted for permit requirements. They can be reached at (410) 962-3670.

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interests in these resources. If you have any questions or need further assistance, please contact Trevor Clark at (410) 573-4527.

Sincerely,

A handwritten signature in blue ink that reads "G. LaRouche". The signature is written in a cursive, flowing style.

Genevieve LaRouche
Supervisor

GOVERNMENT OF THE DISTRICT OF COLUMBIA
STATE HISTORIC PRESERVATION OFFICER



September 9, 2013

Mr. Gopaul Noojibail, Acting Superintendent
National Park Service
National Capital Parks-East
1900 Anacostia Drive, SE
Washington, DC 20020

RE: Initiation of Section 106 Consultation for the Proposed Repair and Connectivity Improvements
of the Civil War Defense of Washington Hiker/Mountain Bike Trail

Dear Mr. Noojibail:

Thank you for formally initiating consultation with the DC State Historic Preservation Office (SHPO) regarding the above-referenced undertaking. We are writing in accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, to provide our initial comments regarding effects on historic properties.

Based upon a review of your recent submittal, we understand that the undertaking will focus on efforts to improve the connectivity of the existing trail system. The work is to be carried out at Fort Mahan, Fort Chaplin, Fort Dupont, Fort Davis, Fort Stanton and Fort Ricketts, and will include installing twenty-eight motor vehicle prevention barriers; resurfacing asphalt pavement; installing eleven new segments of trail; removing a culvert, restoring a stream and riparian area, installing six prefabricated bridges and replacing four deteriorated bridges.

We also understand that the NPS is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA), and that NPS intends to use the NEPA process in lieu of the standard Section 106 process as provided for at 36 CFR 800.8.(c). As such, the EA will need to include a summary of the efforts that will be carried out to identify historic properties, including defining the Area of Potential Effect (APE), identifying known and any previously unevaluated historic properties and the parties with whom the NPS intends to consult. In addition, the EA will also need to evaluate the effects of the undertaking on the properties within the APE.

To that end, all of the Forts where work is proposed are listed in the National Register of Historic Places as contributing elements of the Civil War Defenses of Washington. Other historic properties may also be directly and/or indirectly affected by the undertaking depending upon the location, duration and type of work proposed. Potential resources related to Contraband camps which formed around many of the forts are of special concern. Oral history and neighborhood traditions maintain that many post-Civil War African American communities that sprung up in the vicinity of the forts formed around contraband camps. Because so little is known of them we cannot say at this time whether any are within the project area. We'd like to see documentation of these important resources where appropriate, and consideration of project effects on potential archaeological resources related to them.

Mr. Gopaul Noojibail, Acting Superintendent

Initiation of Section 106 Consultation; Repair & Connectivity Improvements the Civil War Defense of Washington Hiker/Biker Trail

September 9, 2013

Page 2

We look forward to receiving the EA as soon as it becomes available and to consulting further with the NPS and all parties to continue the Section 106 review of this undertaking. In the meantime, please contact me at andrew.lewis@dc.gov or 202-442-8841 if you should have any questions or comments regarding the historic built environment. Questions or comments relating to archaeology should be directed to Ruth Trocolli at ruth.trocolli@dc.gov or at 202-442-8836. Thank you for providing this initial opportunity to review and comment.

Sincerely,



C. Andrew Lewis

Senior Historic Preservation Specialist
DC State Historic Preservation Office

13-491

cc: Jennifer Hirsch, NCPC

