

The Civil War Defenses of Washington  
Rock Creek Park  
Washington, D.C.

U.S. Department of the Interior  
National Park Service



# Fort Totten - North Michigan Park Pedestrian Access Improvement Project

ENVIRONMENTAL ASSESSMENT



January 2015

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U.S. DEPARTMENT OF THE INTERIOR



THE CIVIL WAR DEFENSES OF WASHINGTON  
ROCK CREEK PARK  
WASHINGTON, D.C.

**FORT TOTTEN – NORTH MICHIGAN PARK  
PEDESTRIAN ACCESS IMPROVEMENTS  
PROJECT  
ENVIRONMENTAL ASSESSMENT**

*Civil War Defenses of Washington*

*Rock Creek Park  
Washington, DC*

**January, 2015**



## **PROJECT SUMMARY**

### **INTRODUCTION**

The National Park Service (NPS) proposes to improve pedestrian access to the Fort Totten Metrorail Station from the North Michigan Park neighborhood in Northeast Washington, DC and address public safety concerns. Currently, a network of heavily used but unofficial social trails crosses the project area, and use of these trails has resulted in a number of environmental and safety concerns.

The proposed project area is located adjacent to Fort Totten Park and is included in the part of the Civil War Defenses of Washington (CWDW), or Fort Circle Parks, administered by Rock Creek Park. The CWDW includes remnants of a complex system of forts, batteries, and other fortifications that were constructed to deter the invasion of Washington, DC during the Civil War, as well as a greenbelt of connecting parks linking the forts and batteries.

### **PURPOSE OF THE ACTION**

The National Park Service strives to balance the often conflicting purposes of protecting the scenic, natural, and cultural resources of the Civil War Defenses of Washington while concurrently providing for safe public use of these resources. The purpose of the proposed action is to protect park resources and improve pedestrian access to the Fort Totten Metrorail Station and associated bus facilities from the North Michigan Park neighborhood in Northeast Washington, DC.

### **NEED FOR THE ACTION**

Action is needed at this time to reduce resource damage caused by the use of unofficial or "social" trails. This damage includes:

- cutting branches and removing vegetation to widen unofficial trails;
- placing various materials such as bricks, wooden planks, and pebbles to create walkable unofficial trails in areas that are muddy; and
- accumulation of trash and debris on and near the unofficial trails.

The action is also needed to address visitor safety concerns that have arisen from the use of these unofficial trails.

### **OVERVIEW OF THE ALTERNATIVES**

#### **ALTERNATIVE 1: NO ACTION**

Under this alternative, the National Park Service would continue current management practices in the project area. These practices would include occasional mowing of portions of the existing unofficial trails and removal of dumped items from the interior of the park. Temporary portable lighting towers that are currently in place along the unofficial trail closest to the Metrorail station would not remain over the long term.

### **ALTERNATIVE 2: IMPROVE STREET-SIDE PEDESTRIAN FACILITIES ACCESS**

Under this alternative, the National Park Service would construct a fence around the entire project area to protect park resources. There would be no visitor access to the project area, and the unofficial trails would be restored with native vegetation. This alternative would include an option to construct a sidewalk along the north side of Gallatin Street NE. This would facilitate pedestrian access and complement the network of existing sidewalks in the project area, including the sections of sidewalk along the south side of Galloway Street NE between 4th Street NE and the Metrorail station, as well as the short segment closest to South Dakota Avenue NE along the District Department of Transportation right-of-way; on the north side of Galloway Street NE; and along both sides of South Dakota Avenue NE. This alternative would also include the option to install low-impact pole lighting, which could incorporate the use of solar cells and LED fixtures, along sidewalks at the perimeter of the project area.

### **ALTERNATIVE 3: DIRECT TRAIL (PREFERRED ALTERNATIVE)**

Under this alternative, the National Park Service would construct a paved multi-use trail through the project area, connecting Gallatin and Galloway Streets NE. The trail design would account for existing topography to allow for sufficient sight lines and proper grade for universal accessibility. In addition, existing unofficial trails would be closed and restored with NPS-approved native vegetation. This alternative also would include the option to incorporate low impact, fully shielded pole lighting, including the use of LED fixtures and solar cells into the multi-use trail design. Lighting design would be in accordance with the 2006 NPS *Management Policies* (4.10, Lightscape Management), and the NPS *Interim Outdoor Lighting Guidelines* (NPS 2007a).

### **ALTERNATIVE 4: CONSTRUCT A TRAIL SYSTEM**

Under this alternative, the National Park Service would construct a trail system throughout the project area. This alternative would include creating a main, paved multi-use trail and permanent lighting, as described in alternative 3, as well as creating additional pedestrian trails that would be surfaced with pervious materials. This alternative would consider existing and potential trail alignments that are compatible with the topography and existing stormwater management structures, do not interfere with Metrorail access facilities on the west side of the project area, and allow for sufficient sight lines. This alternative would include the option for installing various amenities such as benches, trail lighting as described in alternative 3, and picnic tables. It would also include the option to clear invasive, non-native vegetation from the project site, resulting in an appearance similar to the grassed and forested areas of the CWDW land east of South Dakota Avenue NE.

## **SUMMARY OF IMPACTS**

Table S-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 S-1. SUMMARY OF ENVIRONMENTAL CONSEQUENCES**

<b>Resource Area</b>	<b>Alternative 1: No Action</b>	<b>Alternative 2: Improve Street-Side Pedestrian Facilities Access</b>	<b>Alternative 3: Direct Trail</b>	<b>Alternative 4: Construct a Trail System</b>
<b>Soils</b>	Long-term minor to moderate adverse impacts would result because existing compaction, rutting, ponding, and erosion would continue, and potentially worsen.	Long-term beneficial impacts on soils would result from closing existing unofficial trails and constructing a sidewalk, which would restrict pedestrian passage on unpaved surfaces through the project area. Restoration and revegetation of the unofficial trails would stabilize currently eroding soils over time, resulting in long-term beneficial impacts. There would be short-term negligible to minor adverse impacts to soils related to the sidewalk construction.	Long-term beneficial impacts on soils would result from trail repair and improvements and closure of existing unofficial trails, which would minimize the extent of pedestrian passage through the project area and stabilize currently eroding soils over time.	Long-term beneficial impacts on soils would result from trail repair and improvements, including the construction of a formalized trail system that would serve to further minimize impacts on soils by directing pedestrian use to designated pathways.
<b>Vegetation</b>	Long-term minor adverse impacts would result from continued disturbance to vegetation from the use of unofficial trails as well as the presence of invasive species.	Long-term beneficial impacts would result from revegetation of the existing unofficial trails and prevention of further vegetation disturbance because the area would be closed.	Short-term minor adverse impacts would result from ground-disturbing activities during construction and the removal of a minimal number of trees to construct the trail.  Long-term beneficial impacts would result from the closure and revegetation of certain existing unofficial trails and the removal of invasive species by the park.	Short-term minor adverse impacts would result from ground-disturbing activities during construction and the removal of a minimal number of trees to construct the trail.  Long-term beneficial impacts would result from the revegetation of disturbed areas and the removal of invasive species by the park.

Resource Area	Alternative 1: No Action	Alternative 2: Improve Street-Side Pedestrian Facilities Access	Alternative 3: Direct Trail	Alternative 4: Construct a Trail System
<b>Wildlife and Wildlife Habitat</b>	Long-term minor adverse impacts would result from continued disturbance to wildlife and wildlife habitat from habitat fragmentation because of the use and expansion of unofficial trails.	Short-term negligible adverse impacts would result from ground-disturbing activities during construction. Long-term beneficial impacts would result from the prevention of further disturbance to wildlife and wildlife habitat because the area would be closed. Long-term minor adverse impacts would result from new infrastructure hindering the movement of ground-dwelling wildlife species.	Short-term minor adverse impacts would result from ground-disturbing activities during construction. Long-term beneficial impacts would result from the closure and revegetation of certain existing unofficial trails.	Short-term minor adverse impacts would result from ground-disturbing activities during construction. Long-term beneficial impacts would result from the revegetation of disturbed wildlife habitat areas.
<b>Cultural Resources—Historic Structures and Districts</b>	Long-term minor adverse impacts resulting from continued use of the unofficial trails.	Short-term minor adverse impacts would result from construction activities. Long-term minor adverse impacts would result from the construction of sidewalks, lighting, and fences.	Short-term minor adverse impacts would result from construction activities. Long-term minor adverse impacts would result from the construction of a trail and lighting.	Short-term minor adverse impacts would result from construction activities. Long-term minor adverse impacts would result from the construction of a trail system, benches, lighting, and picnic tables.
<b>Public Health and Safety</b>	Long-term minor to moderate adverse impacts on public health and safety would result because no accessibility or public safety improvements would take place; temporary lighting would also be removed, thus opportunities for crime would not be mitigated.	Long-term beneficial impacts on public health and safety would result from permanent closure of the project area to public access because opportunities for crime on the existing trails would be eliminated.	The construction of access and safety improvements would mitigate opportunities for crime and would have long-term beneficial impacts on public health and safety.	The construction of access and safety improvements would mitigate opportunities for crime and would have long-term beneficial impacts on public health and safety.

Resource Area	Alternative 1: No Action	Alternative 2: Improve Street-Side Pedestrian Facilities Access	Alternative 3: Direct Trail	Alternative 4: Construct a Trail System
<b>Park Operations and Management</b>	Negligible to no adverse short-term impacts would result because management conditions would remain essentially unchanged. Minor to moderate long-term adverse impacts on park operations and management would be due to potential need for cleanup and restoration activities as well as the potential increase in opportunities for crime from removal of temporary lighting.	Long term beneficial impacts on park operations and maintenance would result because visitor safety issues would be reduced by excluding public use, and by redirecting park management and maintenance resources to other issues.	Long-term minor adverse impacts on park operations and management would result because additional NPS personnel and resources may need to be allocated for management of the area.	Long-term minor adverse impacts on park operations and management would result because additional NPS personnel and resources may need to be allocated for management of the area.
<b>Visitor Use and Experience</b>	Long-term minor to moderate adverse impacts on visitor use and experience would result because no improvements to visitor access would be made and unsafe conditions would not be addressed.	Short-term, minor adverse impacts on visitor use and experience would result from area closure during construction, as well as from noise, dust, and emissions from construction activities and equipment. Long-term minor to moderate adverse impacts would result because the project area would be permanently closed to visitor use.	Short-term, minor adverse impacts on visitor use and experience would result from area closure during construction, as well as from noise, dust, and emissions from construction activities and equipment. Long-term beneficial impacts would result from improved visitor facilities and enhanced access for individuals with mobility-related disabilities, improved safety, and improved maintenance.	Short-term, minor adverse impacts on visitor use and experience would result from area closure during construction, as well as from noise, dust, and emissions from construction activities and equipment. Long-term beneficial impacts would result from improved visitor facilities and enhanced access for individuals with mobility-related disabilities, improved safety, and improved maintenance.

## HOW TO COMMENT

Agencies and the public are encouraged to review and comment on the contents of this environmental assessment during the 45-day public review and comment period online or in writing. The preferred method of providing comments is through the National Park Service Planning, Environment, and Public Comment (PEPC) website for the park at: <http://parkplanning.nps.gov/ROCR>.

You may also submit written comments to the following address:

Superintendent  
Rock Creek Park  
Attn: Fort Totten-North Michigan Park Pedestrian Access Improvements Project EA  
3545 Williamsburg Lane NW  
Washington, DC 20008-1207

Please include your full name and address with your comments so we may add you to our mailing list for future notices about this process. However, please be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

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# CHAPTER 1: PURPOSE AND NEED

## INTRODUCTION

Rock Creek Park, an administrative unit of the National Park Service (NPS), proposes to improve pedestrian access from the North Michigan Park neighborhood to the Fort Totten Metrorail Station and associated bus facilities. The proposed project area is located adjacent to the Fort Totten Metrorail Station and associated bus facilities, in northeast Washington, DC. It is part of the Civil War Defenses of Washington (CWDW) and is administered by Rock Creek Park. The CWDW includes remnants of a complex system of Civil War fortifications and connecting lands envisioned in the 1902 MacMillan Plan as Fort Circle Drive or Fort Drive, and also known as Fort Circle Parks. The project area is located in a "Connecting Corridor Zone" as defined in the Fort Circle Parks Final Management Plan (see figure 1) (NPS 2004a).

This environmental assessment (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 12 and the handbook, *Conservation Planning, Environmental Impact Analysis, and Decision-making*. An 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, as amended, has occurred in coordination with the NEPA process as allowed under 36 CFR 800.8.

## PURPOSE FOR THE ACTION

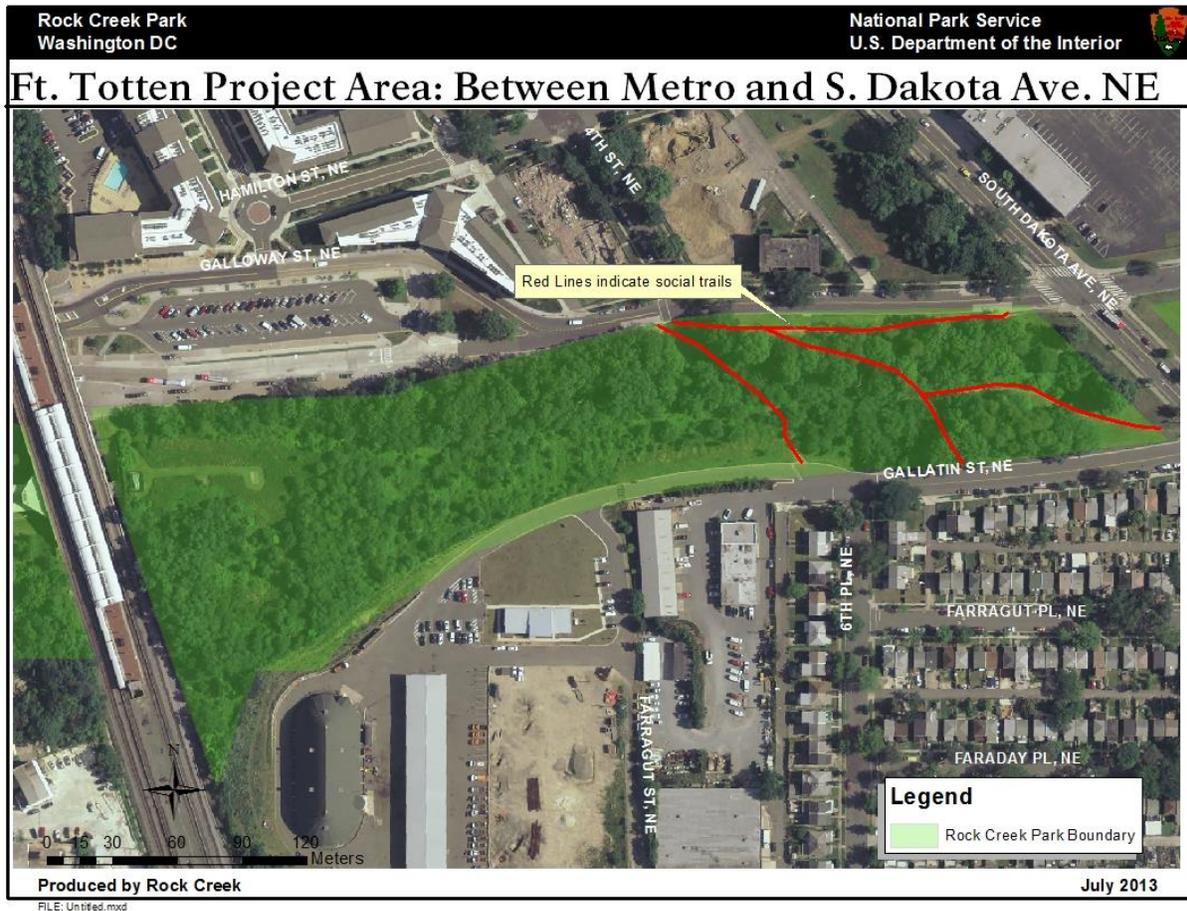
The National Park Service strives to balance the often conflicting purposes of protecting the scenic, natural, and cultural resources of the Civil War Defenses of Washington while concurrently providing for safe public use of these resources. The purpose of the proposed action is to protect park resources and improve pedestrian access to the Fort Totten Metrorail Station and associated bus facilities from the North Michigan Park neighborhood in Northeast Washington, DC.

## NEED FOR THE ACTION

Action is needed at this time to reduce resource damage caused by the use of unofficial or "social" trails. This damage includes:

- cutting branches and removing vegetation to widen unofficial trails;
- placing various materials such as bricks, wooden planks, and pebbles to create walkable unofficial trails in areas that are muddy; and
- accumulation of trash and debris on and near the unofficial trails.

The action is also needed to address visitor safety concerns that have arisen from the use of these unofficial trails.



**FIGURE 1. VICINITY MAP**

## BACKGROUND

The proposed action would take place on a parcel of NPS land located between Galloway and Gallatin Streets NE and South Dakota Avenue NE and the Washington Metropolitan Area Transit Authority (WMATA) Fort Totten Metrorail Station and associated bus facilities in the North Michigan Park neighborhood in Washington, DC.

Currently, the only official public pathways to access the Fort Totten Metrorail Station from the North Michigan Park neighborhood exist around the perimeter of the project area. Instead of walking around the park along the streets, pedestrians have created an unofficial, or social, trail by cutting through the vegetated project area, resulting in a 10-minute shorter walk to access the Metrorail station. Pedestrian activity after dark on the previously unlit unofficial trail has resulted in increased opportunities for crime. Consequently, temporary lighting was added by the National Park Service and the Washington Metropolitan Area Transit Authority along the unofficial trail to deter crime, even though the park is closed after dark.

Increased pedestrian activity on the unofficial trail has also resulted in damage to resources such as dumping of random objects in the woods (e.g., mattresses and trash), vandalism (e.g., branches cut to

widen the trail), and the placement of various materials in muddy areas, including bricks and wooden planks to create a passable trail.

The CWDW and the Fort Circle Parks include a series of protected park lands within Washington, DC in adjacent Prince George's County, Maryland and in Fairfax County and Arlington County, Virginia. The park holdings encompass 18 Civil War forts and batteries, including Fort Totten, as well as connecting corridors between the defense sites, located in Washington, DC and adjacent Prince George's County, Maryland. The project area is within one of the connecting corridors immediately east of the Fort Totten Metrorail Station. The connecting corridor containing the project area is adjacent to, but not part of, Fort Totten Park, which is west of the station.

Along with a link to the country's early history, these defense sites contain green spaces that were the focus of some of the earliest urban planning efforts related to public recreation in the United States, specifically in the 1902 Improvement of the Park System of the District of Columbia (Moore [ed.] 1902). These areas were initially envisioned as part of Fort Drive, a planned roadway between Civil War sites, and later corroborated in the 1960s recommendations of the National Capital Planning Commission (NCPC) to create a "fort park system" that emphasized recreation with a continuous "bicycle and pedestrian way." The importance of the historic earthworks associated with the defense sites 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 CWDW is managed by Rock Creek Park, National Capital Parks East, and George Washington Memorial Parkway, depending on location. Fort Totten and the Fort Circle connecting corridor at Gallatin and Galloway Streets NE, which includes the project area, are managed and administered by Rock Creek Park. Rock Creek Park and National Capital Region staff initiated this planning project after recognizing the need to protect park resources in the area, as well as improve the pedestrian connectivity of the North Michigan Park neighborhood and the Fort Totten Metrorail Station and associated bus facilities.

## **PURPOSE AND SIGNIFICANCE OF THE PARK**

The CWDW is administered by Rock Creek Park, National Capital Parks East, and George Washington Memorial Parkway. Although it is not a specifically legislated unit of the national park system and was acquired under broad legislative authorities, the CWDW need to be protected and preserved. The National Park Service has developed the following purpose statements 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 CWDW;
- to conserve this linkage of urban green spaces that contribute to the character and scenic values of the Nation's Capital; and
- to provide recreational opportunities compatible with historic and natural resource values.

Significance statements define the most important aspects of a park for determining 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 US president has come under enemy fire in warfare.
- The pattern (greenbelt) of public space of the 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.

The National Park Service initiated public scoping for the EA by issuing a scoping letter on March 7, 2014. The letter was posted to the park’s Planning, Environment, and Public Comment (PEPC) website. The public scoping meeting for the Fort Totten-North Michigan Park Pedestrian Improvements Project was held on March 19, 2014, at the Community College of the District of Columbia in Washington, DC from 6 pm to 8 pm. There were 16 attendees at the meeting.

The meeting began with an open house to provide attendees with an opportunity to meet informally with park staff and review informational displays that described the purpose and need for the proposed action, proposed alternatives, existing conditions, project tasks, and the overarching schedule. A supplementary presentation was given on the project background, purpose and need, NEPA and NHPA section 106 compliance processes, existing conditions, and key planning considerations.

The public scoping comment period was open from March 7, 2014, to May 2, 2014. During this time, the National Park Service provided several methods for the community to provide input on the proposed project. At the public meeting, comment sheets were distributed, and these comment sheets included information on directing comments to the NPS PEPC website at <http://parkplanning.nps.gov/ROCR>. The public comments received informed the discussion of alternatives and their impacts in the following sections of this report.

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

The National Park Service is governed by laws, regulations, and management plans before, during, and following any management action considered under any NEPA analysis. The following laws, executive orders, policies, and other plans 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 provides 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 requires that each agency make that information an integral part of its decisions. 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 National Park Service has in turn adopted procedures to comply with the act and the CEQ regulations, as found in Director's Order 12 (NPS 2001), and its accompanying handbook.

### ***National Park Service Organic Act of 1916***

By enacting the NPS Organic Act of 1916, Congress directed the US Department of the Interior and the National Park Service 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 National Park Service latitude when making resource decisions that balance resource preservation and visitor recreation.

Because conservation remains predominant, the National Park Service seeks to avoid or to minimize adverse impacts on park resources and values. However, the National Park Service 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 National Park Service 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 1a1). 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 National Park Service 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 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 the Advisory Council on Historic Preservation. 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.

### ***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 National Park Service to obtain scientific and technical information for analysis. The NPS handbook for Director's Order 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 National Park Service 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 US Army Corps of Engineers 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 US Army Corps of Engineers must weigh the need to protect aquatic resources against the benefits of the proposed development. The US Army Corps of Engineers policy requires applicants to avoid impacts on 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 (DC Laws 10-166)***

The District of Columbia's Soil Erosion and Sediment Control Handbook, which lays out standards and specifications for sediment and erosion control requires that an erosion and sediment control plan be prepared and implemented (District Department of the Environment [DDOE] 2003). 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 District Department of the Environment for approval.

### ***2013 Rule on Stormwater Management Soil Erosion and Sediment Control***

In 2013, the District Department of the Environment released the new stormwater and erosion control rule and the 2013 Stormwater Management Guidebook for new stormwater management performance requirements in the District (DDOE 2013). The rule and guidebook are designed to significantly reduce stormwater pollution flowing into the Anacostia and Potomac Rivers, Rock Creek, and other District

waterbodies by better capturing rainwater in the soil. The rule and guidebook 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), 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, and porous pavements. Section 438 compliance will be completed by NPS staff if alternative 3 is selected.

### ***National Capital Planning Act (66 Stat. 781)***

In 1952, the National Capital Planning Act established the National Capital Planning Commission, which functions as the federal government's central planning and development agency in the National Capital Region. The Commission 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.

### ***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 National Park Service, can expand public access to the Chesapeake 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 National Park Service 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."

### ***Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-making and Handbook***

NPS Director's Order 12 and its accompanying handbook (NPS 2001) lay the groundwork for how the National Park Service complies with NEPA. Director's Order 12 and the handbook set forth a planning

process for incorporating scientific and technical information and establishing a solid administrative record for NPS projects.

NPS Director's Order 12 requires that impacts on park resources be analyzed in terms of their context, duration, and intensity. It is crucial for the public and decision makers to understand the implications of those impacts in the short and long term, cumulatively, and within context, based on understanding and interpretation by resource professionals and specialists. Director's Order 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***

Director's Order 28 (NPS 1998a) calls for the National Park Service 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 National Park Service 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 National Park Service would comply with the 2008 NPS Programmatic Agreement with the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers (NPS 2008). The accompanying handbook to this order addresses 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: Natural Resources Management***

The purpose of this document and its accompanying reference manual 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 the National Capital Planning Commission 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 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 National Park Service 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 8.2.4, Accessibility for Persons with Disabilities*

All reasonable efforts will be undertaken to make NPS facilities, programs, and services accessible to and usable by all people, including those with disabilities. This policy reflects the commitment to provide access to the widest cross section of the public, and to ensure compliance with the intent of the Architectural Barriers Act of 1968 and the Rehabilitation Act of 1973. The National Park Service will also comply with section 507 of the Americans with Disabilities Act (ADA) (42 USC 12207), which relates specifically to the operation and management of federal wilderness areas. Specific guidance for implementing these laws is found in the Secretary of the Interior's regulations regarding enforcement of nondiscrimination on the basis of disability in Department of the Interior programs (43 CFR Part 17, Subpart E), and General Service Administration regulations adopting accessibility standards for the Architectural Barriers Act (41 CFR Part 102-76, Subpart C).

#### *Section 8.2.5.1, Visitor Safety*

The National Park Service strives to protect human life and provide for injury-free visits. As a result, the National Park Service 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 and Environmental Assessment*

The purpose of the Management Plan for the Fort Circle Parks of Washington, DC (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.

## IMPACT TOPICS ANALYZED IN THIS ENVIRONMENTAL ASSESSMENT

NPS staff identified potential issues associated with the installation of trails during internal scoping. 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. 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.”

### SOILS

The proposed trail construction could have direct impacts on soils from ground-disturbing activities during construction and the placement of impervious pavement; however, unauthorized visitor use of park resources has already resulted in impacts on soils because of erosion, destabilization, and compaction. Because potential impacts on soils could occur from both the no action alternative and action alternatives, soils are addressed as an impact topic in this EA.

### VEGETATION

The trail construction alternatives outline a recommendation for removal of invasive non-native species in the forest understory near the proposed trail locations. Construction of a barrier-free, ADA-accessible paved trail could involve removal and disturbance of vegetation; therefore, vegetation is addressed as an impact topic in this EA.

### WILDLIFE AND WILDLIFE HABITAT

The project area is located in an urban setting, adjacent to heavily used roads, infrastructure maintenance facilities, mass transit lines, and associated infrastructure. As a result, much of the wildlife in the project area are adapted urban species. However, the project area is part of a corridor of green space joining the nearby Fort Totten Park with other Civil War Defenses, and provides for the movement of wildlife. Fort Totten Park, a grassy, wooded ridge located approximately 0.5 mile west of the project area on the west side of the Metrorail station, is known to attract a variety of migrant Neotropical bird species. During migration, Fort Totten Park serves as an important refuge for these Neotropical birds within the urban landscape. Clearing and construction activities may affect how these species use the area in the short term, and possibly over the long term. As a result, wildlife and wildlife habitat have been retained as impact topics in this EA.

### CULTURAL RESOURCES

NHPA (16 USC 470 et seq.), NEPA, Organic Act, the NPS’ Management Policies 2006 (NPS 2006), Director’s Order 12: *Conservation Planning, Environmental Impact Analysis and Decision-making*, and Director’s Order 28: *Cultural Resources Management Guidelines* require that impacts on any cultural resources that might be affected be considered. 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). As discussed below, archeological resources and cultural landscapes are not analyzed in this EA. While the project area does not contain any historic structures, it is eligible as part of a historic district that would potentially be impacted by trail construction; therefore, historic structures and districts is the cultural resource topic carried forward for analysis in this EA.

### **PUBLIC HEALTH AND SAFETY**

The current unpaved unofficial trail that runs through the park has varying grades, short lines of sight, and no permanent lighting. Accessibility is limited due to the lack of pavement and varied grades, and a lack of lighting has contributed to an increase in opportunities for crime along the path, reducing public safety. Fencing around the project area under Alternative 2 would completely restrict access but could improve safety by redirecting visitors to existing lit public sidewalks. Regrading and paving under the trail construction alternatives would improve accessibility, and permanent lighting would help improve public safety. Therefore, public safety is included as an impact topic in this EA.

### **PARK OPERATIONS AND MANAGEMENT**

Implementation of the proposed action would require the construction of a paved pathway and installation of permanent lighting in the park, and increased maintenance of park amenities. The path and the lights would require maintenance by park staff and park resources to operate. Improvements to the line of sight, accessibility, and lighting under the action alternatives would have impacts on park operations and management. A lack of improvements under the no action alternative could also affect park operations and management with continued maintenance of the light tower for a period of time, then possible increased need for patrols or a larger number of calls requiring response by US Park Police once the temporary light towers are removed. Therefore, this impact topic is included in this EA.

### **VISITOR USE AND EXPERIENCE**

Short lines of sight and a lack of nighttime lighting can make the existing unofficial trail hazardous for visitors to navigate. These conditions would continue under the no action alternative. Fencing around the project area under Alternative 2 would permanently restrict visitor access. Trail construction and improvements under the trail construction alternatives would be expected to improve access, increase use, and change the visitor experience in certain areas of the park. Therefore, this impact topic is analyzed in this 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 on these resources would be none or negligible, localized, and most likely immeasurable.

### **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 implementation of the action alternatives, dust and vehicle/equipment emissions related to construction activities, asphalt surfacing, 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 site. Overall, there would be a slight and temporary degradation of local air quality due to dust and emissions generated by 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 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.

### **WATER RESOURCES**

There are no water resources within the project area; however, there are streams nearby, and there has been concern about runoff from the exposed areas on the unofficial trails currently in the project area. There would likely be more than 5,000 square feet of disturbance associated with the action alternatives; therefore, the project design would require the use of erosion and sediment control practices per District of Columbia regulations, which would in turn ensure compliance with stormwater management requirements for federal facilities under Section 438 of the Energy Independence and Security Act. The project may also incorporate the use of stormwater management principles such as construction of grassed swales or vegetated filter strips downgradient of the trail, and soil restoration and revegetation of currently exposed areas. These measures would reduce or stop the runoff that is currently occurring. Because the action alternatives would address concerns related to the impacts of runoff on nearby water bodies, water resources has been dismissed from further analysis.

### **FLOODPLAINS AND WETLANDS**

The project area is not within the 100-year floodplain, as defined by the Federal Emergency Management Agency. Impacts on floodplains would not occur. A wetlands survey was conducted by NPS Northeast Region in September 2013. The area surveyed is not a wetland, but rather a stormwater outfall structure constructed in association with the Fort Totten Metrorail Station consisting of a series of ridges and troughs to slow runoff down the slope in the park. Over the years this structure has not been maintained and some seasonal wetland vegetation has become established. The construction of a paved trail would not interfere with any floodplain functions or wetlands; as a result, these impact topics were 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.

### **CULTURAL RESOURCES**

#### ***Archeological Resources***

The project area was the site of Metrorail tunnel construction in the late 1980s. It is wholly located on fill material from the construction of the train lines into the Fort Totten Metrorail Station, and therefore has no potential for archeological resources to occur (LeeDecker and Friedlander 1983). Archeological resources have therefore been dismissed as a topic in this EA.

#### ***Cultural Landscapes***

According to Director's Order 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.

Although there are cultural landscapes identified in the CWDW, there are no inventoried cultural landscapes in the project area, which is designated as a connecting corridor between Civil War defense sites, and there are no inventoried sites nearby. Fort Totten Park, located west of the project area, is physically separated by the Fort Totten Metro Station. Fort Totten Park is considered a cultural landscape, but has not been inventoried to date. The project area is not visible from Fort Totten Park because of the Fort Totten Metro Station. Therefore, potential effects on cultural landscapes are dismissed from further analysis.

### ***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 not analyzed as a topic in this EA.

### ***Ethnographic Resources***

The National Park Service 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,” 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 Traditional Cultural Properties 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 Traditional Cultural Property; therefore, this impact topic was dismissed from further consideration.

## **TRANSPORTATION**

Under both the proposed action and no action alternatives, streets surrounding the project area would remain open during trail construction. Some short-term negligible impacts on 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.

## **LAND USE**

The existing land use within the project area would not change as a result of implementation of the action or no action alternatives; therefore, the impact topic was dismissed from further analysis.

## **SOCIOECONOMICS**

NEPA requires an analysis of impacts on the human environment, which includes economic, social, and demographic elements in the affected area. Fence installation, sidewalk installation, trail repairs, and improvements associated with the proposed action alternatives 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. Implementing any of the proposed alternatives would not appreciably impact local businesses or other agencies. Implementation of the

action alternatives may 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 adversely by activities associated with the action alternatives; and would very likely be affected beneficially by trail construction. 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 US 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. Climate change is a far-reaching, long-term issue that could affect the park and its resources, visitors, and management.

While climate change is a global phenomenon, it manifests differently depending on regional and local factors. Analyses of the Washington, DC area using climate projections for various Intergovernmental Panel on Climate Change emissions scenarios, suggest that mean annual temperature could increase between 3.3 and 5.1 degrees Celsius (5.9 and 9.2 degrees Fahrenheit) by 2100. Climate change could shift the ranges of numerous native tree species northward, while invasive species such as kudzu (*Pueraria lobata*) would potentially increase in the Washington, DC area. Climate change could also increase the growth and toxicity of poison ivy (*Toxicodendron radicans*), a species common in the project area. In addition, modeling of damage to infrastructure throughout Washington, DC from a projected sea level rise of 10 centimeters (3.9 inches) by 2100 produces estimates of up to \$2 billion in damage from flooding of buildings, roads, and Metrorail lines (Gonzalez 2013).

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 alternatives would contribute to increased greenhouse gases emissions, but such emissions would be short term and would not be noticeable, ending when construction is completed. 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.

## 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 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 of and need for 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 National Park Service explored and objectively evaluated four alternatives in this EA:

- Alternative 1: No action
- Alternative 2: Improve street-side pedestrian facilities access
- Alternative 3: Direct trail
- Alternative 4: Construct a trail system

### ALTERNATIVE 1: NO ACTION

Under this alternative, current management would continue. Activities would include occasional mowing of the unofficial trails from South Dakota Avenue NE to Galloway Street NE, and removing dumped items from the interior of the park (figure 2). There would be no maintenance of the unofficial trail between Galloway Street NE and the intersection of Gallatin Street NE and 6th Place NE. The portable lighting towers currently in place from the National Park Service and the Washington Metropolitan Area Transit Authority are temporary and would not remain over the long term.



**FIGURE 2. NO ACTION ALTERNATIVE**

**ALTERNATIVE 2: IMPROVE STREET-SIDE PEDESTRIAN FACILITIES ACCESS**

Under alternative 2, a fence would be placed around the entire project area to protect park resources (figure 3), and unofficial trails would be revegetated. The fence would follow the project area along Galloway Street NE, South Dakota Avenue NE, and Gallatin Street NE, and stop at the existing fence around the stormwater management facility west of the project area. This alternative could also include installing a sidewalk along the north side of Gallatin Street NE. There is an existing sidewalk along the south side of Gallatin Street NE in the District Department of Transportation right-of-way, on the north side of Galloway Street NE, and along both sides of South Dakota Avenue NE. Alternative 2 could also include the installation of lighting along sidewalks at the perimeter of the project area. Lighting would be energy efficient and low maintenance, such as LED lighting. In addition, as part of a separate project, the District Department of Transportation is planning to install a sidewalk/multi-purpose trail on the south side of Galloway Street NE (see cumulative projects in Chapter 4).



**FIGURE 3. ALTERNATIVE 2—IMPROVE STREET-SIDE PEDESTRIAN FACILITIES ACCESS**

**ALTERNATIVE 3: DIRECT TRAIL (PREFERRED ALTERNATIVE)**

Under alternative 3, a paved multi-use trail that connects Gallatin and Galloway Streets NE would be constructed through the project area. The trail alignment would allow for an unobstructed line-of-sight and the most gradual grade possible from the beginning to the end of the trail (figure 4) to ensure universal accessibility. Depending on the design needed to achieve these goals, the trail may or may not follow a current trail alignment. This alternative may include formalizing one of the short existing unofficial trails. The trail would be configured to account for existing topography to allow for sufficient sight lines and proper grade for universal accessibility. It would be constructed to American Association of State Highway and Transportation Officials standards for multipurpose trails, and would be ten feet wide. The trail would likely be paved with an impervious recycled concrete aggregate, similar to and consistent with the width and surface to be used for the adjacent Metropolitan Branch Trail.

In addition, existing unofficial trails would be closed and restored with NPS-approved native vegetation. The National Park Service would also manage and reduce the amount of non-native invasive vegetation in the understory of the project area and increase visibility. The National Park Service could work with local

volunteer groups to manage and reduce the amount of non-native invasive vegetation in the understory of the project area to increase visibility and protect native species. Non-native invasive plants do not occur naturally in the park, and without control, they pose a serious threat to the stability of the park’s environment. They compete with native species for water, nutrients, and sunlight, and threaten native plants as well as the insects, birds, and other animals that depend on them. Under this alternative, there would be an option to light the trail. This would incorporate fully shielded low impact pole lighting, including the use of LED fixtures and solar cells. These lights would likely be similar in type and spacing as those that will be placed on the adjacent District Department of Transportation’s Metropolitan Branch Trail, which is currently under design (fall 2014). Lighting design would be in accordance with the 2006 NPS *Management Policies* (4.10, Lightscape Management), and the NPS *Interim Outdoor Lighting Guidelines* (NPS 2007a).

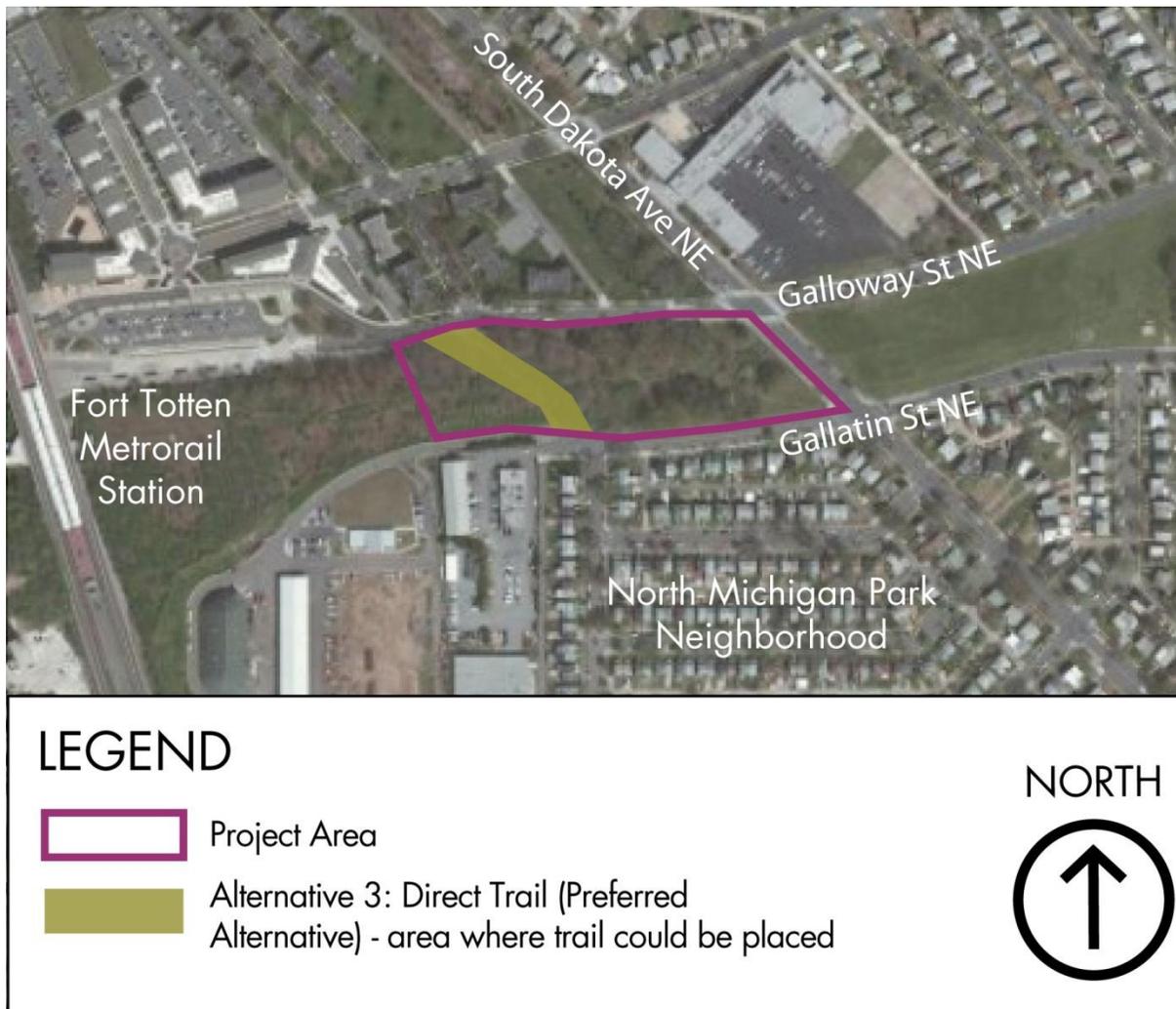


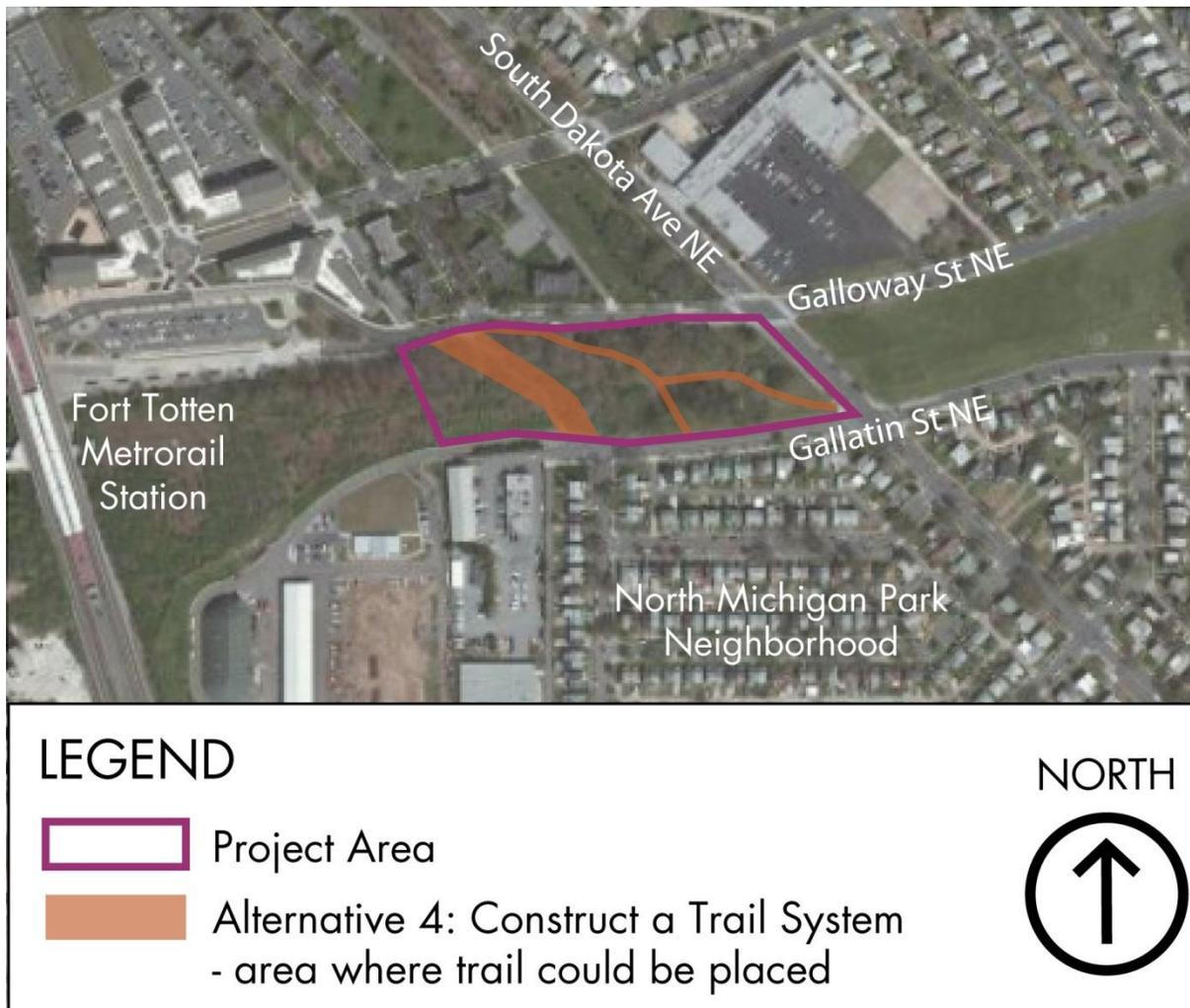
FIGURE 4. ALTERNATIVE 3—DIRECT TRAIL

### ALTERNATIVE 4: CONSTRUCT A TRAIL SYSTEM

Under this alternative, the National Park Service would construct a trail system consisting of a main, paved trail as described in alternative 3, as well as additional trails that would be surfaced with pervious

materials such as wood chips or rubber mulch (figure 5). This alternative would consider existing and potential trail alignments compatible with the topography and existing stormwater management structures, do not interfere with Metrorail access facilities on the west side of the project area, and allow for sufficient sight lines. This alternative would include the option for installing various amenities such as benches, trail lighting as described in alternative 3, and picnic tables. It would also include the option to clear invasive, non-native vegetation from the project site, resulting in an appearance similar to the grassed and forested areas of the CWDW land east of South Dakota Avenue NE.

Similar to alternative 3, the National Park Service could work with local volunteer groups to manage and reduce the amount of non-native invasive vegetation in the understory of the project area to increase visibility and protect native species.



**FIGURE 5. ALTERNATIVE 4—TRAIL SYSTEM**

### **MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES FOR THE PROPOSED ACTION**

The National Park Service 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 National Park Service 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 would utilize existing paved areas, as feasible.
- New concrete and asphalt would be produced at locations outside of the project area. No overnight storage of these materials would be permitted within park boundaries.
- 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**

- The amount of disturbed earth area and soil exposure to rainfall would be minimized through the use of best management practices (BMPs). Erosion and sediment control plans would be prepared in accordance with the current District of Columbia Standards and Specifications for Soil Erosion and Sediment Control and implemented during construction (District Department of Health 2003). These plans would include project-specific measures to avoid and/or minimize soil erosion and transport from ground-disturbing activities, such as vegetation clearing and grading. Specific BMPs, such as the use of stabilized construction entrances and silt fences, could be used and would be detailed in the approved erosion and sediment control plans.
- Any soil excavated during construction would be stockpiled and reused as fill, if needed.
- 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 BMPs would be inspected on a regular basis and after each measurable rainfall to ensure that they are functioning properly. In addition, BMPs would be maintained (repaired and cleaned) as necessary to ensure that they continue to function properly.
- Prior to clearing and grading, the area would be clearly marked to minimize the amount of cleared that occurs.
- Immediately following completion of construction activities or during temporary cessation of the earth-disturbing activities, exposed soils would be stabilized and replanted with vegetation identified by the park as appropriate for the vegetation zone where construction occurs.

## VEGETATION

- Protection measures and BMPs would be implemented to avoid impacts on park vegetation to the extent possible. Vegetation protection measures would be detailed in the design phase of the project and may include, but would not be limited to, evaluation of large trees and development of a tree save plan by an arborist or licensed tree expert; installation of tree protection fencing; root pruning for trees whose critical root zones are within the existing trail alignment or proposed construction area; and staging construction equipment to avoid damage to park vegetation. All revegetation would fulfill NPS functional and aesthetic requirements. Landscape plans would be developed, and areas replanted following construction would be monitored to ensure successful establishment.
- Any trees removed would be replaced at a 1:1 ratio, based on diameter at breast height of trees removed, with species native to the Washington, DC area; these may include small- to medium-sized trees such as flowering dogwood and species that become large when mature such as white oak and American elm.
- Cutting native trees would be minimized, and as much native tree cover as possible would be retained..
- Clearing of native vegetation would be kept to the minimum necessary to improve line-of-sight..
- During trail construction, crews would be trained to minimize soil and vegetation disturbance, compaction, and displacement, which can allow establishment of invasive plants.
- Restoration of cleared areas and revegetated unofficial trails would be with species native to the Washington, DC area and could include a variety of native perennial wildflowers (e.g., milkweed, cardinal flower, and black-eyed Susan), shrubs (e.g., spicebush and chokeberry), and vines (e.g., coral honeysuckle, trumpet creeper, passionflower, and American wisteria) if appropriate. Initial stabilization with native seed mixes would be followed with direct installation of native plants in the spring if watering as needed can be ensured through summer months.

To manage invasive, non-native plants in the proposed project area and throughout Rock Creek Park, park staff follow the National Park Service Management Policies 2006 (NPS 2006). These policies direct that non-native, invasive plants—termed “exotic species” in the Management Policies—“will be managed—up to and including eradication—if (1) control is prudent and feasible, and (2) the exotic species:

- Interferes with natural processes and the perpetuation of natural features, native species or natural habitats, or
- Disrupts the genetic integrity of native species, or
- Disrupts the accurate presentation of a cultural landscape, or
- Damages cultural resources, or
- Significantly hampers the management of park or adjacent lands, or
- Poses a public health hazard as advised by the U.S. Public Health Service (which includes the Centers for Disease Control and the NPS public health program), or
- Creates a hazard to public safety.”

To implement these policies, Rock Creek Park uses an Integrated Pest Management approach, as mandated by the Federal Insecticide, Fungicide, and Rodenticide Act. Integrated Pest Management is a science-based decision-making process that guides park managers when investigating a pest situation,

including non-native, invasive plants (NPS 2009). An Integrated Pest Management approach determines the most appropriate and cost effective management solution for the specific pest situation. It includes identifying the pest, understanding the use and significance of a site or the importance of protecting a historic item, and educating the people involved. Integrated Pest Management also establishes pest tolerance levels and monitoring protocols. Then, with the help of technical experts and on a case-by-case basis, an effective, site-specific and low risk strategy to manage the pest is developed. This includes altering conditions that attracted pests to the site in the first place. Integrated Pest Management often involves changing human behavior as well.

- As part of its existing Integrated Pest Management approach, Rock Creek Park uses volunteers to remove non-native invasive species that can be managed manually by cutting or hand pulling. The park also uses herbicides to manage non-native, invasive plant species. It selects herbicides to treat certain species based on the size of the infestation or because the plant's extensive root systems do not allow successful management by manual methods. Park staff select the most effective, lowest-risk strategy for managing a particular plant species. Herbicide application is done by park staff, park contractors, or the NPS National Capital Region's Exotic Plant Management Team.

#### **WILDLIFE AND WILDLIFE HABITAT**

- Protection measures and BMPs would be implemented to avoid impacts on wildlife and wildlife habitat to the extent possible. Protection measures would be detailed in the design phase of the project and may include, but would not be limited to, measures described to protect vegetation that would result in the protection of wildlife habitat. Construction activities would be conducted in a manner or at appropriate times so that impacts on migratory bird species would be minimized.

#### **CULTURAL RESOURCES**

- 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 SHPO), the National Park Service, 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.

#### **PUBLIC HEALTH AND SAFETY**

- Barriers, safety fencing, and/or signs would be installed, as appropriate, prior to initiating construction activities on NPS property. The objective of these measures would be to protect visitors and allow safe passage around the area of construction.

#### **PARK OPERATIONS AND MANAGEMENT**

- No mitigation measures have been identified.

#### **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.

Dismissed alternatives were evaluated based on the following factors outlined in Director's Order 12:

- technical, legal, 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; and/or
- too great an impact to the environment.

The park considered the use of pervious paving on the trail(s) in alternatives 3 and 4, but dismissed it from further consideration because the use of pervious pavement requires specialized equipment and maintenance procedures, and the park does not have the necessary equipment to properly maintain these surfaces.

In addition, design and construction options suggested by the public during public scoping for the proposed project were ultimately dismissed from further consideration. These included the use of pavers or placement of flagstones on the existing unofficial trail. Using pavers on the existing unofficial trail would not improve sight lines or result in a universally accessible trail, and would therefore not meet the purpose of and need for the proposed project. These options were therefore deemed unreasonable or not feasible, and were not carried forward for analysis in this EA.

## **THE NPS PREFERRED ALTERNATIVE**

CEQ Section 5.4 (d) requires the National Park Service to identify a preferred alternative in the EA if one has been identified. The preferred alternative is the alternative the National Park Service believes would best accomplish its goals, objectives, and purpose and need. In selecting a preferred alternative, the National Park Service must consider the associated impacts on natural and cultural resources. To identify the preferred alternative for the EA, each alternative was evaluated based on ability to meet the purpose and need and their potential impacts on the environment (see chapter 4 of this document). The project team developed the initial range of alternatives based on internal scoping and refined them based on comments received during the public scoping process. The project team reviewed the merits of all the alternatives following the public scoping process to determine which ones were most viable. The National Park Service selected alternative 3—direct trail as the preferred alternative. This alternative would improve pedestrian access; protect or enhance park resources by restoring vegetation and reducing exposed soils on existing unofficial trails; provide a planned trail that would discourage the use and creation of unofficial trails; and would also provide good sight lines and lighting to improve safety. Alternative 2 would also protect or enhance park resources by restoring vegetation and reducing exposed soils on existing unofficial trails; discourage the use and creation of unofficial trails; and improve visitor safety. However, this alternative would also have adverse impacts because fencing would restrict use of the area by visitors and wildlife. Alternative 4 would improve pedestrian access; protect or enhance park

resources by restoring vegetation and reducing exposed soils on existing unofficial trails; provide a planned trail system that would discourage the use and creation of unofficial trails; and would also provide good sight lines and lighting to improve safety. However, this alternative would restore less vegetated habitat than the preferred alternative.

## THE ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The National Park Service is required to identify the environmentally preferable alternative in its NEPA documents for public review and comment. In accordance with the Department of the Interior NEPA Regulations (43 CFR Part 46) and CEQ’s Forty Questions, the National Park Service 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). 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 National Park Service identified alternative 3—direct trail as the environmentally preferable alternative. The construction of a direct trail would have the fewest impacts on natural, cultural, and physical resources within the park. This alternative would require ground disturbance similar to the other action alternatives, but would result in more habitat and vegetation restoration than alternative 4—construct a trail system, and would have fewer long-term restrictions to wildlife than alternative 2—improve streetside access, because of the fence. The fence would have more adverse effects on cultural resources than either of the alternatives that include a trail through the project area, and would restrict wildlife passage through the area. Alternative 3 would also result in the largest amount of beneficial impacts on public safety.

## 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: Improve Street-Side Pedestrian Facilities Access	Alternative 3: Direct Trail	Alternative 4: Construct a Trail System
Soils	Long-term minor to moderate adverse impacts would result because existing compaction, rutting, ponding, and erosion would continue, and potentially worsen	Long-term beneficial impacts on soils would result from closing existing unofficial trails and constructing a sidewalk, which would restrict pedestrian passage on unpaved surfaces through the project area. Restoration and revegetation of the unofficial trails would	Long-term beneficial impacts on soils would result from trail repair and improvements and closure of existing unofficial trails, which would minimize the extent of pedestrian passage through the project area and stabilize currently eroding soils over time.	Long-term beneficial impacts on soils would result from trail repair and improvements, including the construction of a formalized trail system that would serve to further minimize impacts on soils by directing pedestrian use to designated pathways.

Resource Area	Alternative 1: No Action	Alternative 2: Improve Street-Side Pedestrian Facilities Access	Alternative 3: Direct Trail	Alternative 4: Construct a Trail System
		<p>stabilize currently eroding soils over time, resulting in long-term beneficial impacts. There would be short-term negligible to minor adverse impacts to soils related to the sidewalk construction.</p>		
<b>Vegetation</b>	<p>Long-term minor adverse impacts would result from continued disturbance to vegetation from the use of unofficial trails as well as the presence of invasive species..</p>	<p>Long-term beneficial impacts would result from the prevention of further vegetation disturbance because the area would be closed.</p>	<p>Short-term minor adverse impacts would result from ground-disturbing activities during construction and the removal of a minimal number of trees to construct the trail.</p> <p>Long-term beneficial impacts would result from the closure and revegetation of certain existing unofficial trails and the removal of invasive species by the park.</p>	<p>Short-term minor adverse impacts would result from ground-disturbing activities during construction and the removal of a minimal number of trees to construct the trail.</p> <p>Long-term beneficial impacts would result from the revegetation of disturbed areas and the removal of invasive species by the park.</p>
<b>Wildlife and Wildlife Habitat</b>	<p>Long-term minor adverse impacts would result from continued disturbance to wildlife and wildlife habitat from habitat fragmentation because of the use and expansion of unofficial trails.</p>	<p>Short-term negligible adverse impacts would result from ground-disturbing activities during construction.</p> <p>Long-term beneficial impacts would result from the prevention of further disturbance to wildlife and wildlife habitat because the area would be closed.</p> <p>Long-term minor adverse impacts would result from new infrastructure hindering the movement of ground-dwelling wildlife species.</p>	<p>Short-term minor adverse impacts would result from ground-disturbing activities during construction.</p> <p>Long-term beneficial impacts would result from the closure and revegetation of certain existing unofficial trails.</p>	<p>Short-term minor adverse impacts would result from ground-disturbing activities during construction.</p> <p>Long-term beneficial impacts would result from the revegetation of disturbed wildlife habitat areas.</p>

Resource Area	Alternative 1: No Action	Alternative 2: Improve Street-Side Pedestrian Facilities Access	Alternative 3: Direct Trail	Alternative 4: Construct a Trail System
<b>Cultural Resources— Historic Structures and Districts</b>	Long-term minor adverse impacts resulting from continued use of the unofficial trails.	Short-term minor adverse impacts would result from construction activities.  Long-term minor adverse impacts would result from the construction of sidewalks, lighting, and fences.	Short-term minor adverse impacts would result from construction activities.  Long-term minor adverse impacts would result from the construction of a trail and lighting.	Short-term minor adverse impacts would result from construction activities.  Long-term minor adverse impacts would result from the construction of a trail system, benches, lighting, and picnic tables.
<b>Public Health and Safety</b>	Long-term minor to moderate adverse impacts on public health and safety would result because no accessibility or public safety improvements would take place; temporary lighting would also be removed, thus opportunities for crime would not be mitigated.	Long-term beneficial impacts on public health and safety would result from permanent closure of the project area to public access because opportunities for crime on the existing trails would be eliminated.	The construction of access and safety improvements would mitigate opportunities for crime and would have long-term beneficial impacts on public health and safety.	The construction of access and safety improvements would mitigate opportunities for crime and would have long-term beneficial impacts on public health and safety.
<b>Park Operations and Management</b>	Negligible to no adverse short-term impacts would result because management conditions would remain essentially unchanged. Minor to moderate long-term adverse impacts on park operations and management would be due to potential need for cleanup and restoration activities as well as the potential increase in opportunities for	Long term beneficial impacts on park operations and maintenance would result because visitor safety issues would be reduced by excluding public use, and by redirecting park management and maintenance resources to other issues.	Long-term minor adverse impacts on park operations and management would result because additional NPS personnel and resources may need to be allocated for management of the area.	Long-term minor adverse impacts on park operations and management would result because additional NPS personnel and resources may need to be allocated for management of the area.

Resource Area	Alternative 1: No Action	Alternative 2: Improve Street-Side Pedestrian Facilities Access	Alternative 3: Direct Trail	Alternative 4: Construct a Trail System
	crime from removal of temporary lighting.			
<b>Visitor Use and Experience</b>	Long-term minor to moderate adverse impacts on visitor use and experience would result because no improvements to visitor access would be made and unsafe conditions would not be addressed.	Short-term, minor adverse impacts on visitor use and experience would result from area closure during construction, as well as from noise, dust, and emissions from construction activities and equipment. Long-term minor to moderate adverse impacts would result because the project area would be permanently closed to visitor use.	Short-term, minor adverse impacts on visitor use and experience would result from area closure during construction, as well as from noise, dust, and emissions from construction activities and equipment. Long-term beneficial impacts would result from improved visitor facilities and enhanced access for individuals with mobility-related disabilities, improved safety, and improved maintenance.	Short-term, minor adverse impacts on visitor use and experience would result from area closure during construction, as well as from noise, dust, and emissions from construction activities and equipment. Long-term beneficial impacts would result from improved visitor facilities and enhanced access for individuals with mobility-related disabilities, improved safety, and improved maintenance.

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## CHAPTER 3: AFFECTED ENVIRONMENT

This chapter of the EA describes existing environmental conditions in the areas potentially affected by the alternatives evaluated. This section describes the following resource areas: soils, water resources, vegetation, wildlife and wildlife habitat, cultural resources, public safety and accessibility, park operations and management, and visitor use and experience. Potential impacts are discussed in “Chapter 4: Environmental Consequences” following the same order.

### SOILS

Soils along the numerous unofficial trails within the project area have become compacted and exposed, and are actively eroding as the result of a combination of human activity and natural events, particularly where there is exposed soil on or adjacent to slopes. 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 primary functions of soil, which is to receive and treat surface water, is greatly diminished. Additionally, water that would have percolated through the soil runs off of the surface and enters storm sewers and streams, carrying pollutants with it. Increased surface runoff over compacted soils also may increase soil erosion where runoff flows over exposed soil; the sediment load in runoff thus increases, further polluting receiving waters. Furthermore, soil erosion decreases soil quality because it removes fertile surface soil from the system.

Within the project area, repeated use of the unofficial trails has contributed to soil compaction. Soil erosion is also present within the areas where soils are exposed, and is worse on the slopes. Areas of frequent use along the same path of travel in non-paved areas have created exposed soil that continues to erode as it is walked over and exposed to runoff.

### VEGETATION

The forested area that the project site encompasses contains moderate to dense vegetative cover. The majority of the understory is composed of non-native invasive vines and shrubs. The majority of vegetation in the area is upland species.

Tree species identified in the project area during a recent survey (NPS 2014c) include native American elm (*Ulmus americana*); American elm hybrid (*Ulmus* spp.); Black cherry (*Prunus serotina*), Black locust (*Robinia pseudoacacia*), Pin oak (*Quercus palustris*); Southern red oak (*Quercus falcata*); Swamp oak (*Quercus bicolor*); Willow oak (*Quercus phellos*); and Willow oak hybrid (*Quercus* spp.); and non-native White mulberry (*Morus alba*). Diameters at breast height range from 2.5 to 65.5 inches, and heights range from 9 to 60 feet. Of the 18 trees present along the existing unofficial trail that represents the central focus of the proposed action, 11 were described as “injured or diseased.” Injuries included broken branches, insect damage, disease, dead tops, and the presence of vines.

Non-native English ivy (*Hedera helix*) and native poison ivy (*Toxicodendron radicans*) are present and well-established within the project area. These species have encroached on tree trunks. In open areas, the unofficial trail is lined with grass or small shrubs. Soil compaction is so severe in some areas that vegetation has been eliminated by trampling.

## WILDLIFE AND WILDLIFE HABITAT

The project area is located in an urban setting, adjacent to heavily used roads, infrastructure maintenance facilities, mass transit lines, and associated infrastructure. As a result, much of the wildlife in the project area is adapted urban species. However, the project area is part of a corridor and green space joining the nearby Fort Totten Park with other Civil War Defenses, and provides for the movement of wildlife. Fort Totten Park, a grassy, wooded ridge located approximately 0.5 mile west of the project area to the west of the Metrorail station, is known to attract a variety of migrant Neotropical bird species. During migration, Fort Totten Park serves as an important refuge for these Neotropical birds within the urban landscape.

Birders commonly identify approximately 30 bird species in a given day at Fort Totten Park. Some Neotropical migratory species identified (Berry 2014) include: blackburnian warbler (*Setophaga fusca*), Wilson's warbler (*Cardellina pusilla*), hooded warbler (*Setophaga citrina*), yellow-rumped warbler (*Setophaga coronata*), blackpoll warbler (*Setophaga striata*), eastern kingbird (*Tyrannus tyrannus*), ovenbird (*Sieurus aurocapilla*), wood thrush (*Hylocichla mustelina*), olive-sided flycatcher (*Contopus cooperi*), summer tanager (*Piranga rubra*), and eastern wood peewee (*Contopus virens*), and common nighthawk (*Chordeiles minor*). Different species use different parts of the forest. Some, such as blackburnian warbler, use the canopy, while others, including the wood thrush, are found on the forest floor or in the understory. Many Neotropical migratory species use the forest edges and scrub by areas facing eastward along South Dakota Avenue NE, and on the western edge of the existing, primarily unofficial, trail where the early morning sun first hits so that they can refuel after night migration (Berry 2014).

Bird species commonly observed in the area (eBird 2014) include: mourning dove (*Zenaida macroura*), chimney swift (*Chaetura pelagica*), red-bellied woodpecker (*Melanerpes carolinus*), downy woodpecker (*Picoides pubescens*), northern flicker (*Colaptes auratus*), blue jay (*Cyanocitta cristata*), Carolina chickadee (*Poecile carolinensis*), tufted titmouse (*Baeolophus bicolor*), Carolina wren (*Thryothorus ludovicianus*), American robin (*Turdus migratorius*), gray catbird (*Dumetella carolinensis*), European starling (*Sturnus vulgaris*), eastern towhee (*Pipilo erythrophthalmus*), northern cardinal (*Cardinalis cardinalis*), common grackle (*Quiscalus quiscula*), house sparrow (*Passer domesticus*), and red-tailed hawk (*Buteo jamaicensis*).

Two species of snake were also observed in the area (Rohrbaugh 2013), including the northern brown snake (*Storeria dekayi*) and eastern garter snake (*Thamnophis sirtalis*). These species have been identified as DC species in need of conservation by the District Department of the Environment (DDOE 2006).

## 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 Advisory Council on Historic Preservation the opportunity to comment in the event that an undertaking will have an adverse effect on a cultural resource that is eligible for or listed in the national register. For the purposes of this report, cultural resources (historic properties) are defined as historic structures and districts. The consideration of these resources by the National Park Service meets pertinent requirements of the NHPA, as amended, and related legislation and implementing regulations.

## HISTORIC DISTRICTS AND STRUCTURES

As the Civil War began in 1861, Washington, DC was in a precarious position: virtually defenseless and precariously close to the Confederacy. Before the Union defeat at the First Battle of Manassas, the

northern states believed that the Confederacy would be summarily defeated; following the battle the Union began preparing for the reality of a longer war. Defenses around Washington began to be constructed immediately following Manassas and ultimately 68 enclosed forts and batteries were constructed in a 13-mile perimeter around the capital city. There were emplacements for 1,120 guns, on which 807 cannon and 98 mortars were mounted. Additionally, 20 miles of rifle trenches connected the main works. The earthworks, located on the heights of the city, were never taken by the Confederate army and prevented Confederate attacks on Washington (Dillon 1977).

These roads and the remnants of the defensive positions that surrounded the city became a focal point for two groups, the supporters of the preservation and memorialization of Civil War sites and the proponents for improving the park system in Washington, DC. The efforts to preserve the forts began with some focus during the last years of the 19th century. Although these efforts were not specifically directed at the entire ring of remaining forts, this preservation crusade would lay the foundation for efforts successfully carried out in the 20th century.

The “fort-capped hills” around the city provided an unparalleled opportunity for the development of a unique experience within the Nation’s Capital. The views afforded from these strategic positions were celebrated by numerous guidebooks and articles throughout the closing decades of the 19th century. An early proponent of the establishment of a road system around the city, Francis Blair stated in his testimony before the House of Representatives in 1872 that,

The improvement of greatest value, as most comprehensive, is that which proposes to finish the military road which unites the forts around the city. It is to become a grand avenue...making the most romantic, picturesque drive to be found anywhere (US Congress 1872).

Frank L. Averill’s 1892 guide for Washington, DC states that “the views from the forts are usually the finest which can be found...the...glistening white Capitol and Monument, can be seen on one side, and on the other a magnificent stretch of country with hills and streams, farms and forests, stretched out as far as the eye can reach” (Averill 1892). It is these views that were a main focus for the park proponents and for their suggestions of the establishment of a “Fort Drive.” The support for this road system would be carried forward throughout the 1890s by the City Engineer’s office and the City Commissioners. As a result of the March 1893 act that directed the City Commissioners to establish a permanent highway plan for the city, Fort Drive appeared on the 1898 District of Columbia Highway map (CEHP Incorporated 1998a)

The CWDW parks system was a major element of the 1902 McMillan Commission Plan for the improvement of the park system in Washington, DC. Touching all corners of the city, the McMillan Commission officially identified Fort Drive and the Civil War-era forts as a component of the planning effort for Washington, DC.

The views from these points are impressive in proportion to their commanding military positions, and they are well worth acquirement as future local parks, in addition to their historical and military interest may afford...To connect the series advantage is taken of the street laid out for the purpose in highway plans...With the forts indicated on the map-Stevens, Totten, Slemmer, Bunker Hill, and Thayer-and with such other small parks and viewpoints...a northern park circuit of great interests would thus be formed, having views off into the country...presenting views chiefly south toward the city (Moore [ed.] 1902).

The first appropriation for land acquisition associated with the CWDW was provided to the National Capital Parks Commission in 1925 and followed in 1926 after they were re-organized as the National Capital Park and Planning Commission (NCPPC). As this entity, the agency’s duties were expanded and

the work initially started by its predecessor began to pick up pace. National Capital Park and Planning Commission advocated for Fort Drive to be established as a separate parkway, rather than solely utilizing the city streets, with a recommended 200 to 230 feet in width and the road given “a special treatment...to give it as much parkway character as possible” (CEHP Incorporated 1998b). This recommendation was generally accepted as the approved plan until after World War II. Between 1927 and the spring of 1930, 407 acres of land for Fort Drive was acquired at a cost of \$1,535,211. The parcels stretched from the Fort Greble area in the Southeast quadrant of the city to Fort Reno in the Northwest quadrant.

In 1930, the efforts for the development of a Fort Drive and the protection for a number of fortification sites received a major boost with the passing of the Capper-Cramton Act of 1930. This act would be the main legislative force behind large sections of the land acquisition associated with the CWDW and Fort Drive. The Capper-Cramton Act (H.R. 26, Public No. 284, Chapter 354), stated that it was to “provide for the acquisition of lands in the District of Columbia...requisite to the comprehensive parks, parkway, and playground system of the National Capital.” The act called for \$16,000,000 of the funds to be used to acquire land identified as part of the June 1924 legislation that had created the original National Capital Parks Commission. During this effort, the land for Fort Drive, which covered 22.5 of the 23.5 miles required to complete the road, was acquired by the National Capital Park and Planning Commission (Sadler 1937).

As a result of projects undertaken by the Conservation Civilian Corps and the Works Progress Administration, two sections of Fort Drive were actually constructed within the lands acquired for this purpose. At Fort Dupont and Fort Davis, the Conservation Civilian Corps graded between seven and ten miles of Fort Drive by October 1937. At Fort Reno, private homes were demolished in the vicinity of Nebraska Avenue and Chesapeake Street, NW to accommodate the sections of Fort Drive that were constructed by the Works Progress Administration. As additional studies and reports were developed during the late 1940s and 1950s, the view pertaining to Fort Drive and the valuable open space of the fortification sites began to move further and further away from the meandering scenic drive concept. By the mid-1960s, in one of the final major planning efforts by the National Capital Planning Commission (NCPC, the former NCPPC) for Fort Drive, the National Capital Planning Commission had retained planning consultant Fred Tuemmler to re-evaluate the Fort Drive concept. Tuemmler’s revised concept abandoned the Fort Drive idea by focusing on the valuable contribution that the ring of Defenses of Washington sites could offer to the city and visitors. His vision of recreation spaces, hiking paths, and bicycling opportunities would be echoed in the *Fort Circle Parks Master Plan* published by the National Park Service in 1968. Rather than tying the circle of forts together through the Fort Drive concept, “the thread that is to tie the circle of forts together will be a contiguous bikeway and foot trail” (NPS 1968). The plan stated that the purpose of the parks would be a program of historic and cultural interpretation, outdoor recreations, and “to conserve this invaluable green belt of open space as an integral part of the esthetic [sic] structure of the Nation’s Capital” (NPS 1968).

The project area is located in US Reservation 451, one of several parcels associated with this reservation number that was purchased as part of the Fort Drive acquisition effort. The project area is considered eligible for listing as contributing to the Fort Circle Parks/CWDW Historic District. The district was listed in the NRHP in September 1978, originally consisting of 19 NPS properties in the Washington, DC area that were part of the hastily-constructed forts and batteries constructed between 1861–1865 to protect Washington from Confederate attack. Although the resource was defined as a historic district, its boundaries were discontinuous, comprising the boundaries of individual fort or battery sites (Dillon 1977). The National Park Service is currently amending the nomination to include parcels that were acquired for Fort Drive. The expanded historic district includes the project area.

## **PUBLIC HEALTH AND SAFETY**

The project area consists of undeveloped forested NPS-administered land that lies between the North Michigan Park neighborhood and the Fort Totten Metrorail Station and associated bus facilities in Northeast Washington, DC. Walking around this section of land using the available network of sidewalks and pedestrian improvements can take a typical pedestrian approximately 20 minutes. As a result, a network of informal unofficial trails has developed, which allows users to reach transit facilities in approximately 10 minutes. Pedestrians use the trails after dark, even though the park is closed after dusk. Because the trails were not created in an organized fashion, the topography and grade in some areas make access difficult for individuals with mobility impairments. Instances of crime have been attributed to increased opportunities for crime due to the lack of lighting and poor lines of sight on the trails, and have raised concerns about public safety. In response to these concerns, the Washington Metropolitan Area Transit Authority and the National Park Service have cooperated to place temporary lighting on the trails to reduce opportunities for crime and improve safety for trail users.

## **PARK OPERATIONS AND MANAGEMENT**

The project area is managed by Rock Creek Park. The project area is also part of the CWDW and is considered a connecting corridor zone. Connecting corridor zones are areas acquired by the National Park Service to create a contiguous “parkway” (or greenway) connecting fort resources; the project area does not contain any remnants of historic earthworks or other similar cultural and historic resources present at the fort sites, and therefore management within the project area is not focused on these resources.

NPS management activity at the project area is limited because the area is undeveloped. Current management includes occasional mowing of parts of the project site containing the unofficial trails and removal of dumped items from the project area. There is currently no maintenance of the unofficial trails between Galloway Street NE and the intersection of Gallatin Street NE and 6th Place NE. Temporary lighting is provided by the National Park Service in cooperation with the Washington Metropolitan Area Transit Authority and is serviced and maintained by NPS staff as necessary. Trash receptacles along Galloway Street NE are maintained by the city. The US Park Police are responsible for public safety, and they coordinate with other law enforcement agencies in the area, namely the Metropolitan Police Department, and the Metro Transit Police.

## **VISITOR USE AND EXPERIENCE**

The NPS properties included in the CWDW make up important portions of the open green spaces of the Nation’s Capital. Rock Creek Park, which manages this portion of the CWDW, has supported an average of approximately 2.1 million recreational visitors per year over the past 20 years (NPS 2014d). Visitors to CWDW and Fort Totten Park are primarily local residents of the Washington, DC metropolitan area (NPS 2007b). No formal counts of visitor use for the CWDW have been conducted and accurate counts of visitation are not possible due to the nature of use. The CWDW are used mostly by members of the local community who use the parks on a regular basis for passive recreational activities, including walking, jogging, bird watching, bicycling, and picnicking. (Federal Highway Administration 2011)

The CWDW parks operate year-round during daylight hours. There are no entrance fees, although fees are charged for some activities, such as reservations for sports field rentals, picnic areas, and community garden plots (NPS 2014b).

As discussed above, the project area is located within a connecting corridor zone for the CWDW. The project area does not contain historic sites or related resources and also does not contain any developed

recreational or interpretive facilities. The project area is adjacent to but separated from Fort Totten Park by the Metrorail station and other facilities. The primary visitor use of the project area is pedestrian movement through the area into and out of the North Michigan Park neighborhood.

## CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

This “Environmental Consequences” chapter analyzes both beneficial and adverse impacts that would result from implementing any 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 Director’s Order 12 (NPS 2001) procedures and incorporates the best available information applicable to the region and setting, the resources being evaluated, and the actions being considered in the alternatives. For each impact topic addressed in this chapter, the applicable analysis methods are discussed, including assumptions and impact intensity thresholds.

**Geographic Area Evaluated for Impacts (Area of Analysis).** Unless otherwise noted, the geographic study area (or area of analysis) for this assessment is the project area outlined in figure 1 in Chapter 1, consisting of a parcel of NPS land roughly bounded to the east by South Dakota Avenue NE; to the south by parcels facing Gallatin Street NE; WMATA property to the west; and buildings facing Galloway Street NE to the north. The area of analysis may extend beyond these 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 Director’s Order 12 and associated handbook (NPS 2001; NPS 2011). 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, park-wide, 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**

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 all 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 Rock Creek Park and, if applicable, the surrounding area. Table 2, 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 any 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 approximately 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 2 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 in the project area or in the surrounding area have been identified as having the potential to affect the resources evaluated in this EA:

- **Fort Totten Metro Access Trail**—The District Department of Transportation is engaged in an effort to construct a multi-use trail in the right-of-way along the south side of Galloway Street NE from 4th Street NE to South Dakota Avenue NE. This project would involve the construction of approximately 600 linear feet of trail or sidewalk, including retaining walls and drainage structures. The Fort Totten Metro Access Trail would provide a connection between the proposed NPS direct trail alternative and the Metropolitan Branch Trail.
- **Metropolitan Branch Trail**—In cooperation with the Federal Highway Administration and the National Park Service, the District Department of Transportation plans to construct three segments of the proposed 8-mile Metropolitan Branch Trail, which is intended to provide a connection from Prince George’s County, Maryland, to the National Mall. Two of the three segments cross NPS land near Fort Totten. The Metropolitan Branch Trail will link to other regional and national trails, and provide recreational and commuting alternatives to surrounding communities. On NPS land, the trail will be 10 feet wide and paved, with signage, call boxes, and lighting installed as needed.
- **Existing, Ongoing, and Planned Development in the Surrounding Area**—The project area is in a developed, urbanized area of Washington, DC that continues to experience additional development. Existing development in the vicinity of the project area includes single- and multi-family residential and commercial development in the North Michigan Park neighborhood to the south and east of the project area, the Fort Totten Metrorail Station to the west of the project area, and multi-family residential development to the north of the project area along Galloway Street NE. Currently planned development within the vicinity of the project area includes the Art Place at Fort Totten mixed use development, which will be located in the area south of Riggs Road NE and bounded by Galloway Street NE, South Dakota Avenue NE, and the Metrorail right-of-way. The project will consist of 305,000 square feet of retail, 929 multifamily residential units, a 47,000 square foot children’s museum and 170,000 square feet of cultural and art spaces on a 16.5 acre site.

**TABLE 2. CUMULATIVE IMPACTS ANALYSIS SUMMARY**

<b>Impact Topic</b>	<b>Study Area</b>	<b>Past Actions</b>	<b>Present Actions</b>	<b>Future Actions</b>
<b>Soils</b>	Project area and adjacent areas used for staging equipment	Existing development in the surrounding area	Ongoing development in the surrounding area	Fort Totten Metro Access Trail; Metropolitan Branch Trail; planned development in the surrounding area
<b>Vegetation</b>	Project area and adjacent areas used for staging equipment	Existing development in the surrounding area	Ongoing development in the surrounding area	Fort Totten Metro Access Trail; Metropolitan Branch Trail; planned development in the surrounding area
<b>Wildlife and Wildlife Habitat</b>	Project area and adjacent areas used for staging equipment	Existing development in the surrounding area	Ongoing development in the surrounding area	Fort Totten Metro Access Trail; Metropolitan Branch Trail; planned development in the surrounding area
<b>Cultural Resources—Historic Districts and Structures</b>	Fort Circle Parks/CWDW Historic District boundary	Existing development in the surrounding area	Ongoing development in the surrounding area	Fort Totten Metro Access Trail; Metropolitan Branch Trail; planned development in the surrounding area
<b>Public Safety and Accessibility</b>	Project area	Existing development in the surrounding area	Ongoing development in the surrounding area	Fort Totten Metro Access Trail; Metropolitan Branch Trail; planned development in the surrounding area
<b>Park Operations and Management</b>	CWDW	None	None	Fort Totten Metro Access Trail; Metropolitan Branch Trail;
<b>Visitor Use and Experience</b>	Project area	None	None	Fort Totten Metro Access Trail; Metropolitan Branch Trail

## 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 National Park Service 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 project 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 trail area and landscape in the immediate vicinity of the project area described above.

### IMPACT THRESHOLDS

The following definitions were used to assess the intensity of adverse impacts on soils that may result from project alternatives and their duration, at which point impacts would be either short or long term.

**Beneficial:** Beneficial impacts are those resulting in a positive change to soil conditions. No levels of intensity for beneficial impacts are defined.

**Adverse:** An adverse impact is one that declines, degrades, and/or moves the resource away from a desired condition. Adverse impacts are further qualified in this analysis according to their intensity and defined in the following four categories.

*Negligible:* The impact is at the lowest levels of detection and causes very little or no physical disturbance/removal, compaction, or unnatural erosion, when compared with current conditions. Mitigation would likely not be necessary.

*Minor:* The impact is slight but detectable in some areas, with few perceptible effects of physical disturbance/removal, compaction, or unnatural erosion of soils. Mitigation to offset adverse effects could be required and would likely be effective.

*Moderate:* The impact is readily apparent in some areas and has measurable effects of physical disturbance/removal, compaction, or unnatural erosion of soils. Mitigation to offset adverse effects would be required and could be extensive, but would likely be successful.

*Major:* The impact is readily apparent in several areas and has severe effects of physical disturbance/removal, compaction, or unnatural erosion of soils. Mitigation measures to offset the adverse effects would be required, extensive, and success of the mitigation measures would not be guaranteed.

**Duration.** Short-term impacts of the proposed project would be limited to the duration of construction activities associated with any of the alternatives. Long-term impacts would result once the improvements are complete and in operation.

## **IMPACTS OF ALTERNATIVE 1: NO ACTION**

### *Analysis*

Under the no action alternative, no connectivity improvements would be made within the project area, and the existing network of unofficial trails within the project area would remain in place. Current management of the connecting corridor would remain in effect, and current factors affecting soil conditions in the project area would continue. There would be no maintenance of the unofficial trail between Galloway Street NE and the intersection of Gallatin Street NE and 6th Place NE.

Damage to soils is evident along the unofficial trails, including numerous areas where soil compaction, erosion, rutting, and ponding have occurred. These conditions would not be corrected under the no action alternative, resulting in continued long-term minor adverse impacts. Compaction reduces the capacity of the soil to hold water and limits water infiltration into the soil, causing increased runoff, and, in some areas, increased erosion. Compacted trails can concentrate runoff, which in turn can create rills or gullies, especially on steep slopes (Natural Resources Conservation Service 2013). Therefore, continued use of areas with exposed soils would exacerbate existing erosion in these areas and would lead to long-term, moderate, adverse impacts on soils. Soil compaction from the use of unofficial trails would continue. If the existing unofficial trails become eroded or otherwise damaged, it is likely that users would create new unofficial trails to avoid going through the damaged areas (for example, when the existing unofficial trails are muddy), and adverse impacts would widen beyond their current extent. Thus, the continuation of current management without improvements would foster the further deterioration of soil conditions, leading to long-term, minor to moderate, adverse impacts.

### *Cumulative Impacts*

Past, present and reasonably foreseeable projects with the potential to impact soils in the project area and immediate vicinity include existing and ongoing development in the surrounding area; the Metropolitan Branch Trail; the Fort Totten Metro Access Trail; and the Art Place at Fort Totten mixed use development. These projects have the potential to adversely affect soils through construction-related disturbance, permanent removal of vegetated areas, compaction, and placement of impervious surfaces. Therefore, it is anticipated that these projects would have long-term, minor, adverse cumulative impacts on soils. The no action alternative would contribute long-term, minor to moderate, adverse impacts on soils. Overall, long-term, minor to moderate, adverse cumulative impacts would result from the no action alternative.

### *Conclusion*

Under the no action alternative, continued unofficial trail use would result in localized, long-term, minor to moderate, adverse impacts on soils. Given the cumulative contribution to adverse impacts from past, present, and reasonable foreseeable projects that could affect soils, overall cumulative impacts on soils under the no action alternative would be long-term, minor to moderate, and adverse.

## **IMPACTS OF ALTERNATIVE 2: IMPROVED STREET-SIDE PEDESTRIAN FACILITIES ACCESS**

### ***Analysis***

Under alternative 2, a fence would be placed around the entire project area to protect park resources, which would follow the project area along Galloway Street NE, South Dakota Avenue NE, and Gallatin Street NE. This alternative would include the option of installing a sidewalk along the north side of Gallatin Street NE. The sidewalk would be approximately 600 feet long and 4 feet wide, resulting in approximately 2,400 square feet of new impervious surface. The existing unofficial trails would be rehabilitated and revegetated with NPS-approved native vegetation.

The placement of a fence along Galloway Street NE, South Dakota Avenue NE, and Gallatin Street NE under alternative 2 would result in short-term, negligible to minor, adverse impacts on soils due to construction-related ground disturbance during the installation of the fencing and construction of the sidewalks. A DDOE-approved erosion and sedimentation control plan would be implemented during construction to mitigate these impacts. In the long term, alternative 2 would restrict passage through the project area, thereby limiting the extent of continued damage to soils and greatly reducing the primary factors contributing to soil erosion along the trails. This would result in long-term, beneficial impacts on soils. Removing the potential for new unofficial trails from developing by providing connections along sidewalks would minimize the amount of future soil compaction and soil erosion within the project area because pedestrians would not be permitted to enter the project area. Vegetation would become reestablished where the existing unofficial trails are rehabilitated, mitigating the impacts associated with currently exposed soils. Therefore, alternative 2 would result in overall long-term, beneficial impacts on soils in the project area.

The use of concrete or asphalt for the creation of sidewalks would not be expected to result in measurable additional contributions to stormwater runoff and subsequent erosion from the use of impervious surfaces. Proper placement of stormwater drains and incorporation of engineered grades into construction would mitigate these issues. Similarly, construction activities such as grading and excavating for sidewalks associated with the planned connectivity improvements would not substantially disturb or modify soils within the project area. Thus, the installation of sidewalks would contribute to short- and long-term, negligible to minor, adverse impacts on soils.

### ***Cumulative Impacts***

Past, present, and reasonably foreseeable projects that could affect soils are the same as described under the no action alternative. These projects would result in minor to moderate, adverse impacts on soils. When combined with the long-term, beneficial impacts of alternative 2, cumulative impacts on soils would be long-term, minor to moderate, and adverse.

### ***Conclusion***

Under alternative 2, long-term, beneficial impacts on soils would result from the placement of a fence, which would restrict pedestrian passage through the project area. However, long-term, negligible to minor impacts on soils in the project area would occur because exposed soils would remain in place, and further erosion would occur through natural processes, such as during storm events. No substantial soil disturbances are expected from construction activities associated with sidewalks, although there would be a small amount of new impervious surface, resulting in negligible to minor, adverse impacts. Given the cumulative contribution to adverse impacts from past, present, and reasonable foreseeable projects that could affect soils, overall cumulative impacts on soils under alternative 2 would be long-term, minor to moderate, and adverse.

### **IMPACTS OF ALTERNATIVE 3: DIRECT TRAIL**

#### ***Analysis***

Under alternative 3, existing unofficial trails would be closed and restored with NPS-approved native vegetation. A formal trail would be constructed through the project area connecting Gallatin and Galloway Streets NE, which may involve formalizing one of the short existing unofficial trails, resulting in between approximately 3,000 and 5,000 new square feet of impervious surface and grading activities that disturb the soil during construction. The closure and restoration of unofficial trails would result in the addition of approximately 6,500 square feet of vegetated area.

Trail repair and connectivity improvements would effectively stabilize eroding soils over time, resulting in long-term, beneficial impacts on soils. Short-term, minor, adverse impacts on soils from ground-disturbing activities would occur during construction and placement of impervious paving. The presence of impervious paving would result in permanent loss of soil productivity beneath the pavement; however, the small area to be paved would not be expected to result in long-term, adverse impacts on soils. The eventual stabilization of soils represents an improvement over baseline conditions. Moreover, BMPs would be incorporated into the design and construction of the formal trail, including preparation and implementation of a DDOE-approved erosion and sedimentation control plan. The amount of disturbed area and soil exposure to rainfall would be minimized, and 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. Exposed soils would be stabilized and replanted with NPS-approved vegetation immediately following completion of construction activities or during temporary cessation of the earth-disturbing activities. The implementation of these protective measures would ensure that previously disturbed soils within the project area would be more quickly restored to a natural pre-disturbance state. As a result, over the long-term, impacts on soils in the project area would be beneficial.

#### ***Cumulative Impacts***

Past, present, and reasonably foreseeable projects that could affect soils are the same as described under the no action alternative. These projects would result in long-term, minor, adverse impacts on soils. When combined with the short-term, adverse, and long-term, beneficial impacts of alternative 3, cumulative impacts on soils would be long-term, minor, and adverse.

#### ***Conclusion***

Under alternative 3, long-term, beneficial impacts on soils would result from trail repair and connectivity improvements and the closure of existing unofficial trails, which would minimize the extent of pedestrian passage through the project area and effectively stabilize currently eroding soils over time. While minor, short-term, adverse impacts on soils from ground-disturbing activities would occur during construction and placement of impervious paving, the implementation of protective measures would ensure that previously disturbed soils within the project area would be more quickly restored to a natural pre-disturbance state. Given the cumulative contribution to adverse impacts from past, present, and reasonably foreseeable projects that could affect soils, overall cumulative impacts on soils under alternative 3 would be long term, minor, and adverse.

### **IMPACTS OF ALTERNATIVE 4: CONSTRUCT A TRAIL SYSTEM**

#### ***Analysis***

Under alternative 4, a trail system would be constructed throughout the project area, with amenities such as benches, lighting, and picnic tables located in the eastern section of the project area, including the same

disturbance from the construction of the direct trail and limited soil disturbance with the formalization of other existing unofficial trails to form a trail system

Impacts under alternative 4 would be similar to those described for alternative 3. Short-term, minor, adverse impacts on soils would occur as a result of ground-disturbing activities during construction and placement of pervious and impervious paving; however, these impacts would be mitigated through the incorporation of a DDOE-approved erosion and sedimentation control plan. The presence of impervious paving would result in permanent loss of soil productivity beneath the pavement; however, the existing lack of maintenance has already resulted in impacts on soils from erosion, destabilization, and heavy pedestrian use. Therefore, impervious paving would have long-term, negligible, adverse impacts on soils. Trail repair and connectivity improvements would effectively stabilize currently eroding soils over time, resulting in long-term, beneficial impacts on soils. The construction of a formalized trail system would serve to further minimize impacts on soils by directing pedestrian use to designated pathways. The incorporation of BMPs into the design and construction of the formal trail system would ensure that previously disturbed soils within the project area would be more quickly restored to a natural pre-disturbance state. As a result, over the long-term, impacts on soils in the project area would be beneficial.

### ***Cumulative Impacts***

Past, present, and reasonably foreseeable projects that could affect soils are the same as described under the no action alternative. These projects would result in long-term, minor to moderate, adverse impacts on soils. When combined with the short-term, minor, adverse and long-term, beneficial impacts of alternative 4, cumulative impacts on soils would be long-term, minor, and adverse.

### ***Conclusion***

Under alternative 4, long-term, beneficial impacts on soils would result from trail repair and connectivity improvements, including the construction of a formalized trail system that would serve to further minimize impacts on soils by directing pedestrian use to designated pathways. While minor, short-term, adverse impacts on soils from ground-disturbing activities would occur during construction and placement of pervious and impervious paving, the implementation of protective measures would ensure that previously disturbed soils within the project area would be more quickly restored to a natural pre-disturbance state. As a result, over the long-term, impacts on soils in the project area would be beneficial. Given the cumulative contribution to adverse impacts from past, present, and reasonably foreseeable projects that could affect soils, overall cumulative impacts on soils under alternative 4 would be long-term, minor, and adverse.

## **VEGETATION**

### **METHODOLOGY AND ASSUMPTIONS**

Available information on vegetation and vegetative communities occurring in the project area was compiled and reviewed. Predictions about short- and long-term project impacts on vegetation were based on general characteristics and proposed actions affecting vegetated areas associated with the alternatives.

### **STUDY AREA**

The geographic study area for impacts on vegetation is contained within the boundaries of the proposed project 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 trail area and landscape in the immediate vicinity of the project area described above.

## IMPACT DEFINITIONS

The following definitions were used to assess the intensity of adverse impacts on vegetation that may result from project alternatives and their duration, at which point impacts would be either short or long term.

**Beneficial:** Beneficial impacts are those resulting in a positive change to vegetation conditions. No levels of intensity for beneficial impacts are defined.

**Adverse:** An adverse impact is one that declines, degrades, and/or moves the resource away from a desired condition. Adverse impacts are further qualified in this analysis according to their intensity and defined in the following four categories.

<i>Negligible:</i>	No native vegetation would be affected or some individual native plants could be affected as a result of the alternative, but there would be no effect on native species populations. The effects would be on a small scale and no species of special concern would be affected.
<i>Minor:</i>	The alternative would affect some individual native plants and would also affect a relatively minor portion of that species' population. Mitigation to offset adverse effects, including special measures to avoid affecting species of special concern, could be required and would be effective.
<i>Moderate:</i>	The alternative would affect some individual native plants and would also affect a sizeable segment of the species' population and over a relatively large area. Mitigation to offset adverse effects could be extensive, but would likely be successful. Some species of special concern could also be affected.
<i>Major:</i>	The alternative would have a considerable effect on native plant populations, including species of special concern, and affect a relatively large area. Mitigation measures to offset the adverse effects would be required, extensive, and success of the mitigation measures would not be guaranteed.

**Duration.** Short-term impacts of the proposed project would be limited to the duration of construction activities associated with any of the alternatives. Long-term impacts would result once the improvements are complete and in operation.

## IMPACTS OF ALTERNATIVE 1: NO ACTION

### *Analysis*

Under the no action alternative, no connectivity improvements would be made within the project area, and the existing network of unofficial trails would remain in place and would continue to be used. Current management would remain in effect, and current factors affecting vegetation conditions in the project area would continue. There would be no maintenance of the unofficial trail between Galloway Street NE and the intersection of Gallatin Street NE and 6th Place NE. Ongoing maintenance activities would consist of mowing portions of the edges along the other unofficial trails that are used less frequently.

Damage to vegetation occurring along the unofficial trail would not be corrected and, as users create new unofficial trails to avoid going through the eroded areas (for example, when the existing unofficial trails are muddy), adverse impacts on vegetation could widen beyond their current extent. Thus, the continuation of current management without improvements would foster the further deterioration of vegetation, leading to localized, long-term, minor, adverse impacts. Moreover, the continued presence of non-native species would exacerbate existing impacts occurring to various tree species, resulting in continued long-term, minor, adverse impacts.

### ***Cumulative Impacts***

Past, present, and reasonably foreseeable projects with the potential to impact vegetation in the project area include existing, ongoing, and planned development in the surrounding area, including the Art Place at Fort Totten mixed use development, the Metropolitan Branch Trail, and the Fort Totten Metro Access Trail. All of these projects have the potential to adversely affect vegetation through permanent removal of vegetated areas, changes to vegetation community composition, and the potential introduction of invasive species in localized areas. Therefore, it is anticipated that these projects would have long-term, minor, adverse cumulative impacts on vegetation. The no action alternative would contribute long-term, minor, adverse impacts on vegetation. Overall, long-term, minor, adverse cumulative impacts would result from the no action alternative.

### ***Conclusion***

Under the no action alternative, continued unofficial trail use would result in localized, long-term, minor adverse impacts on vegetation. Given the cumulative contribution to adverse impacts from past, present, and reasonable foreseeable projects that could affect vegetation, overall impacts on vegetation under the no action alternative would be long-term, minor, and adverse.

## **IMPACTS OF ALTERNATIVE 2: IMPROVED STREET-SIDE PEDESTRIAN FACILITIES ACCESS**

### ***Analysis***

Under alternative 2, a fence would be placed around the entire project area to protect park resources. The fence would follow the project area along Galloway Street NE, South Dakota Avenue NE, and Gallatin Street NE. This project includes the option to install a sidewalk along the north side of Gallatin Street NE.

The placement of a fence along Galloway Street NE, South Dakota Avenue NE, and Gallatin Street NE would result in short-term, negligible, adverse impacts from the disturbance and removal of vegetation resulting from construction activities. In the long term, alternative 2 would restrict passage through the project area except by NPS employees, thereby limiting the extent of damage to vegetation by reducing the primary factors contributing to vegetative disturbances along the trails. This would result in long-term, beneficial impacts on vegetation.

### ***Cumulative Impacts***

Past, present, and reasonably foreseeable projects that could affect vegetation are the same as those described under the no action alternative. These projects would result in long-term, minor, adverse impacts on vegetation. When combined with the short-term, negligible, adverse and long-term, beneficial impacts of alternative 2, cumulative impacts on vegetation would be long-term, minor, and adverse.

### ***Conclusion***

Under alternative 2, short-term, negligible, adverse impacts on vegetation would result from construction-related disturbance. Long-term, beneficial impacts would result from the placement of a fence which would restrict pedestrian passage through the project area. Given the cumulative contribution to adverse

impacts from past, present, and reasonable foreseeable projects that could affect vegetation, overall cumulative impacts on vegetation under alternative 2 would be long-term, minor, and adverse.

### **IMPACTS OF ALTERNATIVE 3: DIRECT TRAIL**

#### ***Analysis***

Under alternative 3, existing unofficial trails would be closed and restored with native vegetation. A formal, paved, multi-use trail would be constructed through the project area connecting Gallatin and Galloway Streets NE, which may involve formalizing one of the short existing unofficial trails with adjustments to alignment to ensure universal accessibility. The new alignment could result in clearing of vegetation. Additionally, the National Park Service would manage and reduce the amount of non-native invasive vegetation in the understory of the project area.

Short-term, minor, adverse impacts on vegetation from ground-disturbing activities would occur during construction and placement of impervious paving. Standard BMPs would be incorporated into the design and construction of the formal trail. For instance, vegetation clearing and tree cutting would be minimized whenever possible for the retention of tree cover and existing native vegetation, and the implementation of these protective measures would ensure that previously disturbed native vegetation within the project area would be more quickly restored to a natural pre-disturbance state. Trees removed to construct the new trail would be replaced at a 1:1 ratio (based on the diameter at breast height of the trees removed) with trees native to the Washington, DC area.

Creation of a new, formalized, paved, multi-use trail, along with the closure and revegetation of existing unofficial trails, would reduce impacts on vegetation over time, resulting in long-term, beneficial impacts.

#### ***Cumulative Impacts***

Past, present, and reasonably foreseeable projects that could affect vegetation are the same as those described under the no action alternative. These projects would result in long-term, minor, adverse impacts on vegetation. When combined with the short-term, adverse and long-term, beneficial impacts of alternative 3, cumulative impacts on vegetation would be long-term, minor, and adverse.

#### ***Conclusion***

Under alternative 3, long-term, beneficial impacts on vegetation would result from creation of a new, formalized, paved, multi-use trail and the closure of existing unofficial trails, which would restrict pedestrian passage through the project area. While minor, short-term, adverse impacts on vegetation from ground-disturbing activities would occur during construction and placement of pervious paving, the implementation of protective measures would ensure that previously disturbed native vegetation within the project area would be more quickly restored to a natural pre-disturbance state. As a result, over the long-term, impacts on vegetation in the project area would be beneficial. Given the cumulative contribution to adverse impacts from past, present, and reasonable foreseeable projects that could affect vegetation, overall impacts on vegetation under alternative 3 would be long-term, minor, and adverse.

### **IMPACTS OF ALTERNATIVE 4: CONSTRUCT A TRAIL SYSTEM**

#### ***Analysis***

Under alternative 4, a trail system would be constructed throughout the project area, with amenities such as benches, lighting, and picnic tables located in the eastern section of the project area. The National Park Service would manage non-native invasive vegetation in the understory of the project area.

Impacts under alternative 4 would be similar to those described for alternative 3, with the construction of a new, formalized, paved multi-use trail resulting in long-term, beneficial impacts on vegetation. The construction of a formalized pedestrian trail system in addition to the paved multi-use trail would minimize impacts on vegetation by directing pedestrian use to designated pathways. Short-term, minor, adverse impacts on vegetation from ground-disturbing activities would occur during construction and placement of pervious and impervious paving. However, the incorporation of BMPs into the design and construction of the formal trail system would ensure that previously disturbed native vegetation within the project area would be more quickly restored to a natural pre-disturbance state. As a result, over the long-term, impacts on vegetation in the project area would be beneficial.

### ***Cumulative Impacts***

Past, present, and reasonably foreseeable projects that could affect vegetation are the same as those described under alternative 1. These projects would result in long-term, minor, adverse impacts on vegetation. When combined with the short-term, adverse and long-term, beneficial impacts of alternative 4, cumulative impacts on vegetation would be long-term, minor, and adverse.

### ***Conclusion***

Under alternative 4, long-term, beneficial impacts on vegetation would result from the construction of a new, formalized trail system that would serve to minimize impacts on vegetation by directing pedestrian use to designated pathways. While minor, short-term, adverse impacts on vegetation from ground-disturbing activities would occur during construction and placement of pervious and impervious paving, the implementation of protective measures would ensure that previously disturbed native vegetation within the project area would be more quickly restored to a natural pre-disturbance state. As a result, over the long-term, impacts on vegetation in the project area would be beneficial. Given the cumulative contribution to adverse impacts from past, present, and reasonable foreseeable projects that could affect vegetation, overall impacts on vegetation under alternative 4 would be long-term, minor, and adverse.

## **WILDLIFE AND WILDLIFE HABITAT**

### **METHODOLOGY AND ASSUMPTIONS**

Available information on wildlife and wildlife habitat occurring in the project area was compiled and reviewed. Predictions about short- and long-term project impacts on wildlife and wildlife habitat were based on general characteristics and proposed actions affecting wildlife habitat areas associated with the alternatives.

### **STUDY AREA**

The geographic study area for impacts on wildlife and wildlife habitat is contained within the boundaries of the proposed project 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 trail area and landscape in the immediate vicinity of the project area described above.

### **IMPACT DEFINITIONS**

The following definitions were used to assess the intensity of adverse impacts on wildlife and wildlife habitat that may result from project alternatives and their duration, at which point impacts would be either short or long term.

**Beneficial:** Beneficial impacts are those resulting in a positive change to wildlife and wildlife habitat conditions. No levels of intensity for beneficial impacts are defined.

**Adverse:** An adverse impact is one that declines, degrades, and/or moves the resource away from a desired condition. Adverse impacts are further qualified in this analysis according to their intensity and defined in the following four categories.

- Negligible:* No wildlife or wildlife habitat would be affected or minimal wildlife and wildlife habitat could be affected as a result of the alternative, but there would be no effect on wildlife populations. The effects would be on a small scale and no species of special concern would be affected.
- Minor:* The alternative would affect minimal wildlife and wildlife habitat and would also affect a relatively minor portion of that wildlife population. Mitigation to offset adverse effects, including special measures to avoid affecting species of special concern, could be required and would be effective.
- Moderate:* The alternative would affect some wildlife and wildlife habitat and would also affect a sizeable segment of the wildlife population and over a relatively large area. Mitigation to offset adverse effects could be extensive, but would likely be successful. Some species of special concern could also be affected.
- Major:* The alternative would have a considerable effect on wildlife habitat and populations, including species of special concern, and affect a relatively large area. Mitigation measures to offset the adverse effects would be required, extensive, and success of the mitigation measures would not be guaranteed.

**Duration:** Short-term impacts of the proposed project would be limited to the duration of construction activities associated with any of the alternatives. Long-term impacts would result once the improvements are complete and in operation.

## IMPACTS OF ALTERNATIVE 1: NO ACTION

### *Analysis*

Under the no action alternative, no connectivity improvements would be made within the project area, and the existing network of unofficial trails would remain in place and would continue to be used. Current management would remain in effect, and current factors affecting wildlife and wildlife habitat in the project area would continue. There would be no maintenance of the unofficial trail between Galloway Street NE and the intersection of Gallatin Street NE and 6th Place NE. Ongoing maintenance activities would consist of mowing along the edges of portions of the other unofficial trails that are used less frequently.

Damage to wildlife habitat occurring along the unofficial trail would not be corrected and, as users create new unofficial trails to avoid going through the eroded areas (for example, when the existing unofficial trails are muddy), adverse impacts on wildlife habitat could widen beyond the current extent and result in further damage and depletion of wildlife habitat. Additional fragmentation of this already degraded piece of forest would further diminish the quality of the habitat and would lead to potential impacts on both urban wildlife species and migrating bird species, particularly ground-dwelling Neotropical migrant bird

species. Thus, the continuation of current management without improvements would foster the further deterioration of wildlife habitat, leading to localized, long-term, minor, adverse impacts.

### ***Cumulative Impacts***

Past, present, and reasonably foreseeable projects with the potential to impact wildlife and wildlife habitat in the project area include existing, ongoing, and planned development in the surrounding area, including the Art Place at Fort Totten mixed use development, the Metropolitan Branch Trail, and the Fort Totten Metro Access Trail. All of these projects have the potential to adversely affect wildlife and wildlife habitat through permanent removal of wildlife habitat and changes to community composition. Therefore, it is anticipated that these projects would have long-term minor adverse cumulative impacts on wildlife and wildlife habitat. The no action alternative would contribute long-term, minor, adverse impacts on wildlife and wildlife habitat. Overall, long-term, minor, adverse cumulative impacts would result from the no action alternative.

### ***Conclusion***

Under the no action alternative, continued unofficial trail use would result in localized, long-term, minor to moderate, adverse impacts on wildlife and wildlife habitat. Given the cumulative contribution to adverse impacts from past, present, and reasonable foreseeable projects that could affect wildlife and wildlife habitat, overall impacts on wildlife and wildlife habitat under the no action alternative would be long-term, minor, and adverse.

## **IMPACTS OF ALTERNATIVE 2: IMPROVED STREET-SIDE PEDESTRIAN FACILITIES ACCESS**

### ***Analysis***

Under alternative 2, a fence would be placed around the entire project area to protect park resources. The fence would follow the project area along Galloway Street NE, South Dakota Avenue NE, and Gallatin Street NE. This project includes the option to install a sidewalk along the north side of Gallatin Street NE.

The placement of a fence along Galloway Street NE, South Dakota Avenue NE, and Gallatin Street NE would result in short-term, negligible, adverse impacts from disturbance of wildlife habitat resulting from clearing and construction activities related to the installation of the fence and sidewalk. In the long term, alternative 2 would restrict passage through the project area except by NPS employees, and would also restrict wildlife passage through the area for many species, depending on the type of fence chosen. However, fewer people in the area would limit the extent of damage to wildlife habitat by reducing the primary factors contributing to habitat disturbances along the trails. This would result in long-term, beneficial impacts on wildlife habitat. The installation of a fence and sidewalk under alternative 2 would also have the potential to create overall, long-term, minor adverse impacts by hindering the movement of wildlife species, particularly ground-dwelling species.

### ***Cumulative Impacts***

Past, present, and reasonably foreseeable projects that could affect wildlife and wildlife habitat are the same as those described for the no action alternative. These projects would result in long-term, minor, adverse impacts on wildlife and wildlife habitat. When combined with the short-term, negligible, adverse impacts; long-term, beneficial impacts; and long-term, minor, adverse impacts of alternative 2, cumulative impacts on wildlife and wildlife habitat would be long-term, minor, and adverse.

### ***Conclusion***

Under alternative 2, short-term, negligible, adverse impacts on wildlife and wildlife habitat would result from construction-related disturbance. Long-term, beneficial impacts would result from the placement of

a fence that would restrict pedestrian passage through the project area. Long-term, minor, adverse impacts would result from the placement of a fence and sidewalk that would restrict the movement of ground-dwelling species. Given the cumulative contribution to adverse impacts from past, present, and reasonable foreseeable projects that could affect wildlife and wildlife habitat, overall cumulative impacts on wildlife and wildlife habitat under alternative 2 would be long-term, minor, and adverse.

### **IMPACTS OF ALTERNATIVE 3: DIRECT TRAIL**

#### ***Analysis***

Under alternative 3, existing unofficial trails would be closed and restored with native vegetation. A formal trail would be constructed through the project area connecting Gallatin and Galloway Streets NE, which may involve formalizing one of the short existing unofficial trails with adjustments to alignment to ensure universal accessibility and maximized sight lines. The new alignment could result in clearing of vegetation. Additionally, the National Park Service would manage and reduce the amount of non-native invasive vegetation in the understory of the project area, which would be beneficial to wildlife in the project area.

Short-term, minor, adverse impacts on wildlife and wildlife habitat from ground-disturbing activities would occur during construction and placement of impervious paving, which would include clearing and grading activities and associated construction noise. Standard BMPs would be incorporated into the design and construction of the formal trail. For instance, vegetation clearing and tree cutting would be minimized whenever possible to retain existing wildlife habitat, and the implementation of these protective measures would ensure that previously disturbed habitat within the project area would be more quickly restored to a natural pre-disturbance state.

The restoration of vegetation to the secondary unofficial trails would decrease the fragmentation of the forest in the project area, improving habitat quality and reducing the potential for disturbance of wildlife species. Therefore, the creation of a new, formalized, paved, multi-use trail, along with the closure and revegetation of existing unofficial trails, would reduce impacts on wildlife and wildlife habitat over time, resulting in long-term, beneficial impacts on wildlife and wildlife habitat.

#### ***Cumulative Impacts***

Past, present, and reasonably foreseeable projects that could affect vegetation are the same as those described for the no action alternative. These projects would result in long-term, minor, adverse impacts on wildlife and wildlife habitat. When combined with the short-term, adverse and long-term, beneficial impacts of alternative 3, cumulative impacts on wildlife and wildlife habitat would be long-term, minor, and adverse.

#### ***Conclusion***

Under alternative 3, long-term, beneficial impacts on wildlife and wildlife habitat would result from creation of a new, formalized, paved, multi-use trail and the closure of existing unofficial trails. This would restrict pedestrian passage through the project area and improve wildlife habitat quality. While minor, short-term, adverse impacts on wildlife and wildlife habitat from ground-disturbing activities would occur during construction and placement of pervious paving, the implementation of protective measures would ensure that previously disturbed wildlife habitat within the project area would be more quickly restored to a natural pre-disturbance state. As a result, over the long-term, impacts on wildlife and wildlife habitat in the project area would be beneficial. Given the cumulative contribution to adverse impacts from past, present, and reasonable foreseeable projects that could affect wildlife and wildlife habitat, overall impacts on wildlife and wildlife habitat under alternative 3 would be long-term, minor, and adverse.

## **IMPACTS OF ALTERNATIVE 4: CONSTRUCT A TRAIL SYSTEM**

### *Analysis*

Under alternative 4, a trail system would be constructed throughout the project area, with amenities such as benches, lighting, and picnic tables located in the eastern section of the project area. The National Park Service would manage non-native invasive vegetation in the understory of the project area.

Impacts under alternative 4 would be similar to those described for alternative 3, with the construction of a new, formalized, paved, multi-use trail effectively resulting in long-term, beneficial impacts on wildlife and wildlife habitat. The construction of a formalized pedestrian trail system in addition to the paved multi-use trail would minimize impacts on wildlife and wildlife habitat by directing pedestrian use to designated pathways. Short-term, minor, adverse impacts on wildlife and wildlife habitat from ground-disturbing activities would occur during construction and placement of pervious and impervious paving.

As described for alternative 3, the restoration of vegetation to the secondary unofficial trails would decrease the fragmentation of the forest in the project areas, improving habitat quality and reducing the potential for disturbance of wildlife species. Therefore, the creation of a new, formalized trail system, along with the closure and revegetation of existing unofficial trails, would reduce impacts on wildlife and wildlife habitat over time, resulting in long-term, beneficial impacts on wildlife and wildlife habitat.

### *Cumulative Impacts*

Past, present, and reasonably foreseeable projects that could affect wildlife and wildlife habitat are the same as those described for alternative 1. These projects would result in long-term, minor, adverse impacts on wildlife and wildlife habitat. When combined with the short-term adverse and long-term, beneficial impacts of alternative 4, cumulative impacts on wildlife and wildlife habitat would be long-term, minor, and adverse.

### *Conclusion*

Under alternative 4, long-term, beneficial impacts on wildlife and wildlife habitat would result from the construction of a new, formalized trail system that would serve to minimize impacts on wildlife and wildlife habitat by directing pedestrian use to designated pathways. While minor, short-term, adverse impacts on wildlife and wildlife habitat from ground-disturbing activities would occur during construction and placement of pervious and impervious paving, the implementation of protective measures would ensure that previously disturbed wildlife habitat within the project area would be more quickly restored to a natural pre-disturbance state. As a result, over the long-term, impacts on wildlife and wildlife habitat in the project area would be beneficial. Given the cumulative contribution to adverse impacts from past, present, and reasonable foreseeable projects that could affect wildlife and wildlife habitat, overall impacts on wildlife and wildlife habitat under alternative 4 would be long-term, minor, and adverse.

## **CULTURAL RESOURCES**

### **GENERAL METHODOLOGY AND ASSUMPTIONS**

The National Park Service 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 and historic structures and districts are of potential concern for this project. Because ethnographic resources, museum objects, cultural landscapes, and archeological resources 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 Director's Order 12 (NPS 2001) also call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, e.g., reducing the intensity of an impact from major to moderate or minor. Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under NEPA only. Cultural resources are nonrenewable resources, and adverse effects generally consume, diminish, or destroy the original historic materials or form, resulting in a loss in the integrity of the resource that can never be recovered. Therefore, although actions determined to have an adverse effect under section 106 may be mitigated, the impact remains adverse.

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

## **HISTORIC DISTRICTS AND STRUCTURES**

### ***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 Rock Creek Park section of the CWDW is home to a series of protected open spaces along the hilltops northwest of the Anacostia River in the District of Columbia. The park holdings encompass the CWDW. Along with a link to the country's early history, these defense sites contain green space that was the focus of 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"). These areas were initially envisioned as part of Fort Drive, a planned roadway between Civil War sites and later corroborated in the 1960s recommendations by the National Capital Planning Commission to create 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 located adjacent to Fort Totten Park, in a "Connecting Corridor Zone." Connecting Corridor Zones are defined as those areas purchased for construction of the parkway connecting the forts, comprising small parcels with manicured lawn and trees maintained as green space. The 2004 Final Management Plan, Fort Circle Parks states that these zones "will constitute a pleasant corridor through a mix of trees and open spaces with limited views of the surrounding city. Landscapes will be maintained in a sustainable fashion, and the defining features of this zone will be preserved" (NPS 2004a). Furthermore, these areas are planned to be modified from natural conditions, with a mix of exotic and native planting materials and roads, trails, and sidewalks to be used for driving, bicycling, or walking. The study area is located within the proposed expanded boundaries of the Fort Circle/CWDW Historic District.

### ***Impact Definitions***

The following definitions were used to assess the intensity of adverse impacts on cultural resources that may result from project alternatives and their duration, at which point impacts would be either short or long term.

**Beneficial:** Beneficial impacts are those resulting in a positive change relative to current conditions. No levels of intensity for beneficial impacts are defined.

**Adverse:** An adverse impact is one that declines, degrades, and/or moves the resource away from a desired condition. Adverse impacts are further qualified in this analysis according to their intensity and defined in the following four categories.

<i>Negligible:</i>	The impact is at the lowest level of detection, with neither adverse nor beneficial.
<i>Minor:</i>	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.
<i>Moderate:</i>	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.
<i>Major:</i>	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.

**Duration.** Short-term impacts of the proposed project would be limited to the duration of construction activities associated with any of the alternatives. Long-term impacts would result once the improvements are complete and in operation.

### ***Impacts of Alternative 1: No Action***

#### *Analysis*

Under the no action alternative, no improvements would be made within the project area, and the existing network of unofficial trails would remain in place. As a connecting corridor, green space is the most important character-defining feature of the project area. The 1968 Master Plan identified these areas for use as recreational areas, with pedestrian and bicycle paths planned to connect the parks. As such, planned pedestrian paths would be compatible with the planned use of the area during the period of significance and would result in a negligible impact on the historic district, although unplanned and unofficial trails can adversely affect the character of the area. Continued use of these unofficial trails could be expected to result in an increase in the size of the unofficial trails and deterioration of the vegetation in surrounding areas, but would result in minor long-term adverse effects.

#### *Cumulative Impacts*

Past, present, and future projects with the potential to impact cultural resources in the study area include existing and ongoing development in the surrounding area, the Metropolitan Branch Trail, the Fort Totten Metro Access Trail, and the Art Place at Fort Totten mixed use development. Although existing and planned projects would not affect the study area, existing and planned development in the area would lead to potentially increased use of the unofficial trails in the study area, potentially increasing their size, which would have negligible to minor, adverse impacts. New trails would have minor, adverse impacts on the project area. The no action alternative would contribute long-term, minor, adverse impacts. Increased

pedestrian use of trails within the area would lead to minor, long-term, adverse effects to the historic district.

### *Conclusion*

Under the no action alternative, long-term, minor, adverse impacts on the historic district would result from continued use of unofficial trails. Given the cumulative contributions to adverse impacts from past, present, and reasonably foreseeable projects that could affect the historic district, cumulative impacts under the no action alternative would be long-term, minor, and adverse.

### ***Impacts of Alternative 2: Improved Street-Side Pedestrian Facilities Access***

#### *Analysis*

This alternative would involve construction of a fence around the entire project area to protect park resources. This alternative has an option to install a sidewalk along the north side of Gallatin Street NE, and an option to install lighting along sidewalks at the perimeter of the project area. This alternative would have short-term, minor impacts during the construction of sidewalks and fence enclosing the project area because of visual impacts of the construction activities. As noted in the no action alternative discussion, pedestrian paths are compatible with the planned historic use of the area and would have a negligible impact on the historic district and the character-defining feature of this area, its green space. The fence would slightly change the character of the area, but would also protect the green space from deterioration caused by foot traffic, resulting in long-term, negligible impacts. The option to incorporate low-impact pole lighting would have minor impacts. The alternative would have long-term, minor impacts.

#### *Cumulative Impacts*

Past, present, and future projects with the potential to impact the historic district in the project area would be the same as those described for the no action alternative. Alternative 2 would contribute short-term minor adverse and long-term, minor impacts on the historic district. Overall, cumulative impacts under alternative 2 would be long-term and minor.

### *Conclusion*

Under alternative 2, short-term, minor, adverse impacts on the historic district would result from construction of a fence, and the options to construct a sidewalk along Gallatin Street NE and incorporate lighting. Given the cumulative contributions of negligible to minor impacts from past, present, and reasonably foreseeable projects that could affect the historic district, cumulative impacts under alternative 2 would be long-term, minor, and adverse.

### ***Impacts of Alternative 3: Direct Trail***

#### *Analysis*

Under alternative 3, a paved multi-use trail would be constructed through the project area connecting Gallatin and Galloway Streets NE, which may involve formalizing and adjusting the alignment of one of the short existing unofficial trails. Other existing unofficial trails would be closed and restored with native vegetation. The construction of the trail would create visual disturbances, such as construction staging areas and equipment within the project area, and would result in short-term, minor adverse effects on the historic district. As noted in the discussion of the previous alternative, construction of a trail would result in minor, adverse impacts on the historic district. The option to install low-impact pole lighting would also have a minor, adverse impact. The alternative would have long-term, minor impacts.

### *Cumulative Impacts*

Past, present, and future projects with the potential to impact the historic district in the project area would be the same as those described for the no action alternative. Alternative 3 would contribute short-term, minor, adverse and long-term, minor, adverse impacts on the historic district. Overall, cumulative impacts under alternative 3 would be long-term, minor, and adverse.

### *Conclusion*

Under alternative 3, short-term, minor and long-term, minor, adverse impacts on the historic district would result from construction of a formalized path through the project area and the introduction of low-impact lighting. Given the cumulative contributions of minor impacts from past, present, and reasonably foreseeable projects that could affect the historic district, cumulative impacts under alternative 3 would be long-term, minor, and adverse.

### ***Impacts of Alternative 4: Construct a Trail System***

#### *Analysis*

Under alternative 4, a direct formal trail paved with impervious surface would be constructed through the project area connecting Gallatin and Galloway Streets NE. In addition, a trail system with pervious surface would be constructed throughout the project area, with amenities such as benches, lighting, and picnic tables located in the eastern section of the project area.

The introduction of trails, as discussed in previous alternatives, would result in minor, adverse impacts. The construction of the trail would create temporary visual disturbances, such as construction staging areas and equipment within the project area, and would result in short-term, minor, adverse impacts on the historic district. Amenities such as benches, lighting, and picnic tables would introduce new features to the landscape. These features, similar to the trails, are compatible with the intended recreational use of the project area in the 1968 Master Plan and, as such, the introduction of new amenities would have a minor impact on the historic district. Overall, the impact of alternative 4 would be long-term, minor, and adverse.

### *Cumulative Impacts*

Past, present, and future projects with the potential to impact the historic district in the project area would be the same as those described for the no action alternative. Alternative 4 would contribute short-term, minor, adverse, and long-term, minor, adverse impacts on the historic district. Overall, cumulative impacts under alternative 4 would be long-term, minor, and adverse.

### *Conclusion*

Under alternative 4, short-term, minor, adverse impacts on the historic district would result from construction of a formalized path through the project area and long-term, minor, adverse impacts from the construction of a trail system, lighting, benches, and picnic tables. Given the cumulative contributions of minor impacts from past, present, and reasonably foreseeable projects that could affect the historic district, cumulative impacts under alternative 4 would be long-term, minor, and adverse.

## **PUBLIC HEALTH AND SAFETY**

### **METHODOLOGY AND ASSUMPTIONS**

The analysis of public health and safety considers risks to NPS staff and the general public that are associated with health and safety hazards in the project area as well as the proposed trail improvements.

Impacts for this resource area were analyzed qualitatively, using information provided by NPS staff familiar with current operational, maintenance, access, and public safety considerations within the project area.

## STUDY AREA

The geographic study area for impacts on public health and safety includes the project area and areas immediately surrounding the project area such as pedestrian improvements on adjacent streets. The study area for cumulative impacts analysis is contiguous with the project area.

## IMPACT DEFINITIONS

The following definitions were used to assess the intensity of adverse impacts on public health and safety that may result from project alternatives and their duration, at which point impacts would be either short or long term.

**Beneficial:** Beneficial impacts are those resulting in a positive change to public safety and accessibility. No levels of intensity for beneficial impacts are defined.

**Adverse:** An adverse impact is one that declines, degrades, and/or moves the resource away from a desired condition. Adverse impacts are further qualified in this analysis according to their intensity and defined in the following four categories.

<i>Negligible:</i>	Visitors would likely be unaware of health and safety impacts associated with implementation of the alternative. Public health and safety conditions would not noticeably change.
<i>Minor:</i>	Changes in public health and safety would be slight and detectable but would not appreciably degrade critical health and safety features and characteristics. If mitigation were needed, it would be relatively simple and likely be successful.
<i>Moderate:</i>	The action would have perceptible effects on a few critical components of public health and safety on a localized level. Noticeable increases in difficulty of access and possible increases in crime and injury would result. Public perceptions of health and safety would decline. Mitigation measures would be necessary and would likely be successful.
<i>Major:</i>	The action would have substantial, noticeable effects on multiple critical components of public health and safety. Visitors who desire continued use of the area would face considerable difficulty in accessing the area and a markedly heightened risk of crime, including potentially serious injuries or loss of life. Visitors would be deterred from using the area and visitor satisfaction would substantially decline. Extensive mitigation measures would be needed, and success would not be guaranteed.

**Duration.** Short-term impacts of the proposed project would be limited to the duration of construction activities associated with any of the alternatives. Long-term impacts would result once the improvements are complete and in operation.

## **IMPACTS OF ALTERNATIVE 1: NO ACTION**

### ***Analysis***

Under the no action alternative, no trail improvements would take place. Current maintenance, which includes mowing of the unofficial trails from South Dakota Avenue NE to Galloway Street NE, would continue. No other maintenance would take place. Existing topography, grade, and line of sight conditions would remain unchanged, and the trails would remain inaccessible to individuals with mobility impairments. The temporary lighting towers currently in place would not remain over the long term, thus opportunities for crime would not be mitigated. Because no accessibility or public safety improvements would take place and temporary lighting would be removed, long-term, minor to moderate, adverse impacts on public health and safety would result from the no action alternative.

### ***Cumulative Impacts***

Past, present, and future projects with the potential to impact public health and safety in the project area include existing and ongoing development in the surrounding area, including the Metropolitan Branch Trail, the Fort Totten Metro Access Trail, and the Art Place at Fort Totten mixed use development. All of these projects have the potential for beneficial impacts on public health and safety, because they would increase area population and neighborhood activity, improve connectivity, and provide safer access for residents throughout the vicinity of the project area. The no action alternative would contribute long-term, moderate, adverse impacts on public health and safety. Overall, cumulative impacts under the no action alternative would be long-term and beneficial.

### ***Conclusion***

Under the no action alternative, long-term, minor to moderate, adverse impacts on public health and safety would result from a lack of improvements to topography and line of sight, and the removal of temporary lighting on the existing unofficial trails. Given the cumulative beneficial impacts of past, present, and reasonably foreseeable projects that could affect public health and safety, cumulative impacts on public health and safety under the no action alternative would be long-term and beneficial.

## **IMPACTS OF ALTERNATIVE 2: IMPROVED STREET-SIDE PEDESTRIAN FACILITIES ACCESS**

### ***Analysis***

Under alternative 2, the perimeter of the project area would be fenced and the existing unofficial trails would be removed and rehabilitated. There are options under this alternative to improve pedestrian infrastructure around the perimeter of the project, including the installation of sidewalks and lighting. These actions would restrict pedestrian access through the area currently traversed by the unofficial trails and alleviate crime and public safety risks that are associated with current use of the unofficial trails. While issues of grade and topography would be solved, pedestrian travel time from the North Michigan Park neighborhood around the perimeter of the project area to the Fort Totten Metrorail Station and associated bus facilities would remain at approximately 20 minutes, which could become an accessibility concern for individuals with mobility impairments. Improved sidewalks and nighttime lighting would be expected to mitigate this. Overall, alternative 2 would have long-term, beneficial impacts on public health and safety.

### ***Cumulative Impacts***

Past, present, and future projects with the potential to impact public health and safety in the project area would be the same as those discussed for the no action alternative. Alternative 2 would contribute long-term, beneficial impacts on public health and safety. Overall, cumulative impacts under alternative 2 would be long-term and beneficial.

### ***Conclusion***

Under alternative 2, long-term, beneficial impacts on public health and safety would result, because closure of the project area would limit opportunities for crime and associated safety risks and improve pedestrian infrastructure around the perimeter of the project area. Given the cumulative beneficial impacts of past, present, and reasonably foreseeable projects that could affect public health and safety, cumulative impacts on public health and safety under alternative 2 would be long-term and beneficial.

### **IMPACTS OF ALTERNATIVE 3: DIRECT TRAIL**

#### ***Analysis***

Under alternative 3, barriers and/or fencing, signage, and other measures would be used to close the project area during construction, resulting in short-term, beneficial impacts on public health and safety since closure of the area would help prevent visitor injuries. In the long term, improvements to grade, topography, and the addition of a barrier-free, ADA-accessible paved trail surface would improve accessibility and reduce opportunities for crime and other safety concerns within the park. Line of sight improvements and the option to add permanent lighting would help alleviate crime concerns and improve public safety. Alternative 3 would therefore have long-term, beneficial impacts on public health and safety.

#### ***Cumulative Impacts***

Past, present, and future projects with the potential to impact public health and safety in the project area would be the same as those discussed for the no action alternative. Alternative 3 would contribute long-term, beneficial impacts on public health and safety. Overall, cumulative impacts under alternative 3 would be long-term and beneficial.

#### ***Conclusion***

Under alternative 3, long-term, beneficial impacts on public health and safety would result from construction of a formalized, barrier-free, ADA-accessible trail to improve accessibility and lighting and other safety improvements to reduce opportunities for crime. Given the cumulative beneficial impacts of past, present, and reasonably foreseeable projects that could affect public health and safety, cumulative impacts on public health and safety under alternative 3 would be long-term and beneficial.

### **IMPACTS OF ALTERNATIVE 4: CONSTRUCT A TRAIL SYSTEM**

#### ***Analysis***

Under alternative 4, impacts on public health and safety would be similar to those described for alternative 3, although the unpaved trail network would not improve accessibility to the same degree as the main paved trail. Alternative 4 would be expected to have short-term minor adverse and long-term beneficial impacts on public health and safety.

#### ***Cumulative Impacts***

Past, present, and future projects with the potential to impact public health and safety in the project area would be the same as those discussed for the no action alternative. Alternative 4 would contribute long-term, beneficial impacts on public health and safety. Overall, cumulative impacts under alternative 4 would be long-term and beneficial.

### ***Conclusion***

Under alternative 4, long-term, beneficial impacts on public health and safety would result from trail improvements that would improve accessibility and safety improvements that would reduce opportunities for crime. Given the cumulative beneficial impacts of past, present, and reasonably foreseeable projects that could affect public health and safety, cumulative impacts on public health and safety under alternative 4 would be long-term and beneficial.

## **PARK OPERATIONS AND MANAGEMENT**

### **METHODOLOGY AND ASSUMPTIONS**

Park management and operations for the purpose of this analysis refer to the quality and effectiveness of the park staff to maintain and administer park resources and facilities and to provide for an effective visitor experience. Park resources for this project include the project area as defined above under “Geographic Area Evaluated for Impacts.” Park staff who are knowledgeable about operations and management issues were members of the planning team that evaluated the impacts of each alternative.

### **STUDY AREA**

The study area for impacts on park operations and management includes the project area and immediately surrounding land. The study area for cumulative impacts analysis includes Rock Creek Park and the CWDW.

### **IMPACT DEFINITIONS**

The following definitions were used to assess the intensity of adverse impacts on park operations and management that may result from project alternatives and their duration, at which point impacts would be either short or long term.

**Beneficial:** Beneficial impacts are those resulting in a positive change to public safety and accessibility. No levels of intensity for beneficial impacts are defined.

**Adverse:** An adverse impact is one that declines, degrades, and/or moves the resource away from a desired condition. Adverse impacts are further qualified in this analysis according to their intensity and defined in the following four categories.

- |                    |  |
|--------------------|--|
| <i>Negligible:</i> | Park operations would not be impacted or the impact would not have a noticeable or appreciable effect on park operations.  |
| <i>Minor:</i>      | Impacts would be detectable and noticeable, but would be of a magnitude that would not result in an appreciable or measurable change to park operations. If mitigation was needed to offset adverse effects, it would be simple and likely successful. |
| <i>Moderate:</i>   | Impacts would be readily apparent and result in a substantial change in park operations that would be noticeable to staff and the public. Mitigation measures could be necessary to offset adverse effects and would likely be successful.             |

*Major:* Impacts would be readily apparent and would result in a substantial change in park operations that would be noticeable to staff and the public and would require the park to readdress its ability to sustain current park operations. Mitigation measures to offset adverse effects would be needed and extensive, and success could not be guaranteed.

**Duration.** Short-term impacts of the proposed project would be limited to the duration of construction activities associated with any of the alternatives. Long-term impacts would result once the improvements are complete and in operation.

## **IMPACTS OF ALTERNATIVE 1: NO ACTION**

### *Analysis*

Under the no action alternative, existing management conditions would remain unchanged, meaning that no active management of the area other than occasional mowing, trash removal, and law enforcement response would take place. This would result in negligible, adverse, short-term impacts. In the long term, additional park resources and personnel may be required for cleanup of illegally dumped trash and rehabilitation of deteriorated environmental conditions on the trails from continued heavy pedestrian use. Because temporary nighttime lighting would be removed eventually under this alternative, increased opportunities for crime or accidents could result once they are removed, which could place additional demands on NPS law enforcement personnel. Overall, the no action alternative would have minor to moderate, adverse impacts on park operations and management.

### *Cumulative Impacts*

Past, present, and reasonably foreseeable actions with the potential to impact park operations and management include the Fort Totten Metro Access Trail and the Metropolitan Branch Trail. These actions would result in short-term, negligible, adverse impacts on park operations and management because park service personnel could potentially be reassigned for duties outside of their typical job assignments during construction. Long-term, negligible to no, adverse impacts would result from periodic trail maintenance and cleanup. The no action alternative would contribute long-term, minor to moderate, adverse impacts. Overall, cumulative impacts on park operations and management under the no action alternative would be long-term, minor, and adverse.

### *Conclusion*

Under the no action alternative, long-term, minor to moderate, adverse impacts would result from continued illegal dumping and crime concerns. Given the cumulative adverse impacts of past, present, and reasonably foreseeable projects that could affect public health and safety, cumulative impacts on park operations and management under the no action alternative would be long-term, minor, and adverse.

## **IMPACTS OF ALTERNATIVE 2: IMPROVED STREET-SIDE PEDESTRIAN FACILITIES ACCESS**

### *Analysis*

Under alternative 2, short-term, negligible, adverse impacts on park operations and maintenance could result from potential reassignment of park personnel to duties outside of their typical job assignments during construction. In the long term, some NPS resources would be required to enforce closure of the fenced area and periodically maintain the fence; however, fewer resources are expected to be needed to provide trash cleanup and law enforcement response by the US Park Police. Park management and

maintenance resources could therefore be re-focused on other park areas and issues. Closure of the project area would furthermore reduce opportunities for crime, and visitor safety issues would thus be mitigated. Alternative 2 would therefore result in long-term, beneficial impacts on park operations and management.

### ***Cumulative Impacts***

Past, present, and reasonably foreseeable actions with the potential to impact park operations and management would be the same as those described for the no action alternative, resulting in short-term, negligible, adverse and long-term, negligible to no, adverse impacts. Alternative 2 would contribute long-term, beneficial impacts on park operations and management. Overall, alternative 2 would result in beneficial to no, long-term cumulative impacts.

### ***Conclusion***

Under alternative 2, long-term, beneficial impacts would result from the improvement of visitor safety issues and reallocation of park resources to other areas. Given the cumulative adverse impacts of past, present, and reasonably foreseeable projects that could affect park operations and management, alternative 2 would result in beneficial to no, long-term cumulative impacts.

## **IMPACTS OF ALTERNATIVE 3: DIRECT TRAIL**

### ***Analysis***

Under alternative 3, short-term, negligible, adverse impacts on park operations and maintenance could result from potential reassignment of National Park Service personnel to duties outside of their typical job assignments during construction. In the long term, alternative 3 would require more park resources and personnel to be devoted to management of the newly improved trail. Since Rock Creek Park policy requires most park areas to be closed after dark, demand for NPS law enforcement personnel and resources would continue. NPS resources would also be needed to manage the area's resources, including non-native invasive plants. Overall, long-term, minor, adverse impacts on park operations and management would be expected as a result of alternative 3.

### ***Cumulative Impacts***

Past, present, and reasonably foreseeable actions with the potential to impact park operations and management would be the same as those described for the no action alternative, resulting in short-term, negligible, adverse and long-term, negligible to no, adverse impacts. Alternative 3 would contribute long-term, minor, adverse impacts on park operations and management. Overall, alternative 3 would result in long-term, negligible to minor cumulative impacts.

### ***Conclusion***

Under alternative 3, long-term, minor, adverse impacts on park operations and management would result from some additional commitments of park resources to maintaining and patrolling the improved trail. Given the cumulative adverse impacts of past, present, and reasonably foreseeable projects that could affect park operations and management, alternative 3 would result in long-term, negligible to minor, adverse cumulative impacts.

## **IMPACTS OF ALTERNATIVE 4: CONSTRUCT A TRAIL SYSTEM**

### ***Analysis***

Impacts on park operations and management from the construction of a trail network would consist of additional demand for resources to maintain trails and other amenities such as picnic tables and benches.

It is expected that the impacts would be similar to those associated with alternative 3. Alternative 4 would therefore have short-term, negligible, adverse and long-term, minor, adverse impacts on park operations and management.

### ***Cumulative Impacts***

Past, present, and reasonably foreseeable actions with the potential to impact park operations and management would be the same as those described for the no action alternative. Alternative 4 would contribute long-term, minor, adverse impacts on park operations and management. Overall, alternative 4 would result in long-term, negligible to minor, adverse cumulative impacts.

### ***Conclusion***

Under alternative 4, long-term, minor, adverse impacts on park operations and management would result from some additional commitments of park resources to maintaining and patrolling the improved trail network. Given the cumulative adverse impacts of past, present, and reasonably foreseeable projects that could affect park operations and management, alternative 4 would result in long-term, negligible to minor, adverse cumulative impacts.

## **VISITOR USE AND EXPERIENCE**

### **METHODOLOGY AND ASSUMPTIONS**

To determine potential impacts on visitor use and experience, the current uses at the project site were considered and the potential effects of the proposed project on visitor use and experience were analyzed. The types of visitor experience and use/visitation that occur within the project area and that might be affected by the proposed action, as well as public health and safety issues experienced by visitors, were considered.

### **STUDY AREA**

The study area for visitor use and experience is the project area and immediately adjacent land and pedestrian improvements. The study area for cumulative impacts analysis is contiguous with the boundaries of Rock Creek Park and the CWDW.

### **IMPACT DEFINITIONS**

The following definitions were used to assess the intensity of adverse impacts on visitor use and experience that may result from project alternatives and the duration, at which point impacts would be either short or long term.

**Beneficial:** Beneficial impacts are those resulting in a positive change to visitor use and experience. No levels of intensity for beneficial impacts are defined.

**Adverse:** An adverse impact is one that declines, degrades, and/or moves the resource away from a desired condition. Adverse impacts are further qualified in this analysis according to their intensity and defined in the following four categories.

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.

**Duration.** Short-term impacts of the proposed project would be limited to the duration of construction activities associated with any of the alternatives. Long-term impacts would result once the improvements are complete and in operation.

## IMPACTS OF ALTERNATIVE 1: NO ACTION

### *Analysis*

Under the no action alternative, no trail improvements would take place. Current maintenance, which includes mowing of the unofficial trails from South Dakota Avenue NE to Galloway Street NE, would continue. No other maintenance would take place. Existing topography, grade, and line-of-sight conditions would remain unchanged. The temporary lighting towers currently in place would not remain over the long term. Impacts on visitor use and experience from the no action alternative would be directly related to the level of visitor access and safety provided. As discussed above, the no action alternative would have adverse impacts on public safety and accessibility, and these could markedly diminish visitor satisfaction. Therefore, the no action alternative would have long-term, minor to moderate, adverse impacts on visitor use and experience in the area.

### *Cumulative Impacts*

Past, present, and reasonably foreseeable actions with the potential to impact visitor use and experience include the Fort Totten Metro Access Trail and the Metropolitan Branch Trail. These actions would result in long-term, beneficial impacts on visitor use and experience because an expanded multi-use trail network would provide greater recreational opportunities and improved neighborhood connectivity. The no action alternative would contribute long-term, minor to moderate, adverse impacts. Overall, cumulative impacts on visitor use and experience under the no action alternative would be long-term, negligible to minor, and adverse.

### ***Conclusion***

Under the no action alternative, long-term, minor to moderate, adverse impacts on visitor use and experience would result from continued limitations to accessibility and ongoing public safety concerns. Given the cumulative impacts of past, present, and reasonably foreseeable projects that could affect park operations and management, the no action alternative would result in long-term, negligible, adverse cumulative impacts.

## **IMPACTS OF ALTERNATIVE 2: IMPROVED STREET-SIDE PEDESTRIAN FACILITIES ACCESS**

### ***Analysis***

Similar to the no action alternative, impacts on visitor use and experience resulting from alternative 2 are expected to be largely related to public health and safety concerns. In the short term, minor, adverse impacts on visitor use and experience would result from closure of the area during construction, as well as noise, dust, and emissions that may result from construction activities and equipment. In the long term, closure and fencing of the project area would help address issues related to crime and improvements to pedestrian infrastructure would partially mitigate concerns related to a longer travel distance between the North Michigan Park neighborhood and the Fort Totten Metrorail Station. These actions could have some beneficial impacts on visitor use and experience. Long-term, minor to moderate, adverse impacts would also result from alternative 2, because it would preclude future visitor use of the project area. Overall, alternative 2 would have long-term, minor to moderate, adverse impacts on visitor use and experience.

### ***Cumulative Impacts***

Past, present, and reasonably foreseeable actions with the potential to impact visitor use and experience would be the same as those described for the no action alternative. Alternative 2 would contribute long-term, minor to moderate, adverse impacts on visitor use and experience. Overall, cumulative impacts on visitor use and experience under alternative 2 would be long-term, negligible to minor, and adverse.

### ***Conclusion***

Under alternative 2, long-term, minor to moderate, adverse impacts on visitor use and experience would result from closure of the project area to visitor use. Given the cumulative impacts of past, present, and reasonably foreseeable projects that could affect park operations and management, alternative 2 would result in long-term, negligible, adverse cumulative impacts.

## **IMPACTS OF ALTERNATIVE 3: DIRECT TRAIL**

### ***Analysis***

Alternative 3 would have short-term, minor, adverse impacts on visitor use and experience from area closures during construction, along with noise, dust, and emissions that may result from construction activities and equipment. In the long term, construction of a formalized, barrier-free, ADA-accessible trail under alternative 3 would facilitate greater ease of use and would enhance access for individuals with mobility-related disabilities. Line-of-sight improvements and permanent lighting would enhance visitor safety. More active management of the trail by NPS staff would mitigate issues of vandalism and illegal dumping that currently exist, improving visitors' aesthetic experience. The trail would connect to the Metropolitan Branch Trail and the Fort Totten Metro Access Trail, thereby increasing access from the North Michigan Park neighborhood to increased recreational opportunities on NPS lands in the project vicinity. Overall, alternative 3 would have beneficial impacts on visitor use and experience.

### ***Cumulative Impacts***

Past, present, and reasonably foreseeable actions with the potential to impact visitor use and experience would be the same as those described for the no action alternative. Alternative 3 would contribute long-term, beneficial impacts on visitor use and experience. Overall, cumulative impacts on visitor use and experience under alternative 3 would be long-term and beneficial.

### ***Conclusion***

Under alternative 3, long-term, beneficial impacts on visitor use and experience would result from enhanced visitor access and safety. Given the cumulative impacts of past, present, and reasonably foreseeable projects that could affect park operations and management, alternative 2 would result in long-term, beneficial cumulative impacts.

## **IMPACTS OF ALTERNATIVE 4: CONSTRUCT A TRAIL SYSTEM**

### ***Analysis***

Impacts on visitor use and experience under alternative 4 would be similar to those described for alternative 3, although beneficial impacts may be more pronounced because of the presence of additional trails and amenities such as benches and picnic tables. Alternative 4 is expected to have short-term, minor, adverse impacts and long-term, beneficial impacts.

### ***Cumulative Impacts***

Past, present, and reasonably foreseeable actions with the potential to impact visitor use and experience would be the same as those described for the no action alternative. Alternative 4 would contribute long-term, beneficial impacts on visitor use and experience. Overall, cumulative impacts on visitor use and experience under alternative 4 would be long-term and beneficial.

### ***Conclusion***

Under alternative 4, long-term beneficial impacts on visitor use and experience would result from enhanced visitor access and safety. Given the cumulative impacts of past, present, and reasonably foreseeable projects that could affect park operations and management, alternative 4 would result in long-term, beneficial cumulative impacts.

## 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 the CWDW.

All consultations with the DC SHPO, 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 several national register-listed properties within the CWDW Historic District.

The National Park Service began coordination with the DC SHPO and Advisory Council on Historic Preservation regarding improvements to pedestrian access to the Fort Totten Metrorail Station and associated bus facilities from the North Michigan Park neighborhood on August 5, 2014 (see appendix A).

In accordance with section 7 of the Endangered Species Act of 1973, on February 27, 2014, the National Park Service sent a letter to solicit comments from the United States Fish and Wildlife Service regarding the existence of threatened or endangered species in the project area. No response has been received (see appendix A).

The National Park Service also sent a letter to the District Department of Environment to request information on rare, threatened, and endangered species in the project area on February 27, 2014. No response has been received.

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## CHAPTER 7: 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 ACHP. 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 ACHP in (36 CFR Part 800) and applied to determine whether an undertaking will affect any property on the 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 National Park Service 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 ACHP 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 ACHP 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)
Americans with Disabilities Act	(ADA)
Best Management Practice(s)	(BMP[s])
Civil War Defenses of Washington	(CWDW)
Code of Federal Regulation	(CFR)
Council on Environmental Quality	(CEQ)
District Department of the Environment	(DDOE)
District of Columbia Historic Preservation Officer	(DC SHPO)
Environmental Assessment	(EA)
National Capital Planning Commission	(NCPC)
National Capital Park and Planning Commission	(NCPPC)
National Environmental Policy Act	(NEPA)
National Historic Preservation Act	(NHPA)
National Park Service	(NPS)
National Register of Historic Places	(national register)
Planning, Environment, and Public Comment website	(PEPC)
Public Law	(PL)
United States Code	(USC)
Washington Metropolitan Area Transit Authority	(WMATA)

## CHAPTER 8: REFERENCES

Averill, Frank L.

- 1892 “The Present Condition of the Defenses of Washington, Built during the Civil War, 1861-1865.” *Guide to the National Capital and Maps of Vicinity Including Fortifications*. Engineering Platoon of the Engineer Corps, DCNG, Washington, DC.

Berry, Jason

- 2014 Personal correspondences between Scott Bates, NPS and Jason Berry, International Landscape Conservation Officer, American Bird Conservancy.

Council on Environmental Quality (CEQ)

- 1978 “Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act.” *Code of Federal Regulations* 40:1500–1508. Washington DC.
- 1997 Considering Cumulative Effects under the National Environmental Policy Act. January 1997

CEHP, Incorporated

- 1998a *A Historic Resources Study: The Civil War Defenses of Washington, Part I*. Prepared for the National Park Service, Washington, DC.
- 1998b *A Historic Resources Study: The Civil War Defenses of Washington, Part II*. Prepared for the National Park Service, Washington, DC.

Dillon, James

- 1977 Defenses of Washington (Civil War) National Register of Historic Places Nomination Form.

District Department of the Environment (DDOE)

- 2003 2003 District of Columbia Standards and Specifications for Soil Erosion and Sediment Control. Washington, DC.
- 2006 District of Columbia Wildlife Action Plan.
- 2013 Stormwater Management Guidebook.

District Department of Health

- 2003 District of Columbia Standards and Specifications for Soil Erosion and Sediment Control. Department of Health, Environmental Health Administration, Bureau of Environmental Quality, Watershed Protection Division. March 2003. Available at <http://ddoe.dc.gov/soil-erosion-and-sediment-control-handbook>. Accessed August 25, 2014.

eBird

- 2014 Bird Observations – Fort Totten Park. Available online at: <http://ebird.org/ebird/GuideMe?cmd=decisionPage&getLocations=hotspots&hotspots=L751775&bYear=1900&eYear=2014&bMonth=1&eMonth=12&reportType=location&>. Accessed 9/18/2014.

Federal Highway Administration

- 2011 Final Environmental Assessment for Metropolitan Branch Trail on Park Service Land. July 5, 2011.

## Gonzalez, Patrick

- 2013 Climate Change and Impacts for the National Parks of Washington, DC, USA. National Park Service Climate Change Response Program. March 22, 2013.

## LeeDecker, Charles and Amy Friedlander

- 1983 Survey for Archaeological and Historical Resources along the WMATA E-Route from Fort Totten Drive to the District Line. Prepared for Wallace Roberts & Todd, Philadelphia, Pennsylvania.

## Moore, Charles (editor)

- 1902 *The Improvement of the Park System of the District of Columbia*. Report of the Senate Committee on the District of Columbia; Report of the Park Commission, edited by Charles Moore. Fifty-Seventh Congress, First Session, Senate Report No. 166. Government Printing Office, Washington, D.C.

## National Capital Planning Commission (NCPC)

- 2004 Comprehensive Plan for the National Capital: Federal Elements. Washington, DC.

## National Park Service (NPS)

- 1968 Fort Circle Parks, National Park Service, Master Plan.
- 1996 Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes. National Park Service, Washington, DC.
- 1998a Director's Order 28: Cultural Resources Management Guidelines. National Park Service, Washington, DC.
- 1998b National Register Bulletin 38, Guidelines for Evaluating and Documenting Traditional Cultural Properties. Available at: <http://www.nps.gov/history/nR/publications/bulletins/nrb38/>.
- 2001 Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-making and Handbook. National Park Service, Washington, DC.
- 2004a *Final Fort Circle Parks General Management Plan*. Washington, DC. September 2004.
- 2004b Natural Resource Management Reference Manual 77. Washington, DC.
- 2006 *NPS Management Policies 2006: The Guide to Managing the National Park System*. August 31, 2006. Washington, DC. Available at <http://www.nps.gov/policy/MP2006.pdf>.
- 2007a NPS Interim Outdoor Lighting Guidelines (Draft). January 30, 2007.
- 2007b Rock Creek Park and the Rock Creek and Potomac Parkway Final General Management Plan and Environmental Impact Statement June 6, 2007.
- 2008 Programmatic Agreement Among the National Park Service (US Department of the Interior), the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the National Historic Preservation Act.
- 2009 National Park Service Integrated Pest Management Program Overview. Available at <http://www.nature.nps.gov/biology/ipm>. Accessed October 15, 2014.
- 2011 Director's Order 12: Conservation Planning, Environmental Impact Analysis, and Decision Making. Effective date: October 5, 2011.

- 2014b Civil War Defenses of Washington website. Available at <http://www.nps.gov/cwdw/index.htm>. Accessed June 30, 2014.
- 2014c Fort Totten Vegetation Survey - June 2014.
- 2014d Annual Visitor Information obtained from NPS Stats. Available at [https://irma.nps.gov/Stats/SSRSReports/Park%20Specific%20Reports/Annual%20Park%20Recreation%20Visitation%20\(1904%20-%20Last%20Calendar%20Year\)?Park=ROCR](https://irma.nps.gov/Stats/SSRSReports/Park%20Specific%20Reports/Annual%20Park%20Recreation%20Visitation%20(1904%20-%20Last%20Calendar%20Year)?Park=ROCR). Accessed June 24, 2014.

#### Natural Resources Conservation Service

- 2013 Fact Sheet 4. Rangeland Soil Quality – Compaction. Available at <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/nd/soils/?cid=stelprdb1167168>. Accessed September 8, 2014.

#### Rohrbaugh, Lindsay

- 2013 Personal correspondence with Scott Bates, NPS and Lindsay Rohrbaugh, Wildlife Biologist, DDOE regarding Inventory and Monitoring of Herpetofauna in the District of Columbia. December 30, 2013.

#### Sadler, Christine

- 1937 “One More Mile and the District Will Have a Driveway Linking Forts,” The Washington Post, October 10, 1937.

#### U.S. Congress, Senate

- 1872 Investigations Into the Affairs of the District of Columbia, House Report No. 72, 42nd Congress, 2nd Session. Government Printing Office: Washington, DC.

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## **APPENDIX A: CORRESPONDENCES**





## United States Department of the Interior

NATIONAL PARK SERVICE  
National Capital Region  
Rock Creek Park  
3545 Williamsburg Lane, N.W.  
Washington, DC 20008-1207

1.A.1(NCR-ROCR)

February 27, 2014

Mr. Christophe A.G. Tulou  
Acting Director  
D.C. Department of the Environment  
1200 First Street N.E., 5th Floor  
Washington, D.C. 20002

Dear Mr. Tulou,

The National Park Service (NPS) is proposing to improve pedestrian access to the Fort Totten Metrorail and adjacent bus facilities from the North Michigan Park neighborhood. As part of this project, I am requesting information from the District of Columbia Department of the Environment regarding state listed species or habitats.

The proposed project area is administered by Rock Creek Park (ROCR) and is located within the Civil War Defenses of Washington. It includes a stretch of forested park land just east of the Fort Totten Metrorail Station and is bound by Galloway Street N.E. to the north, South Dakota Avenue N.E. to the east, Gallatin Street NE to the south, and the Washington Metropolitan Area Transit Authority property to the west. A map of the proposed project area is enclosed.

The NPS is preparing an Environmental Assessment for this project, in accordance with the National Environmental Policy Act of 1969. The project would include tasks to improve connectivity and public safety as well as to provide additional protection for park resources.

We are requesting 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 request written confirmation from your office to this request. 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 Chief of Resources Management, Nick Bartolomeo at 202-895-6010, or by email at [nick\\_bartolomeo@nps.gov](mailto:nick_bartolomeo@nps.gov).

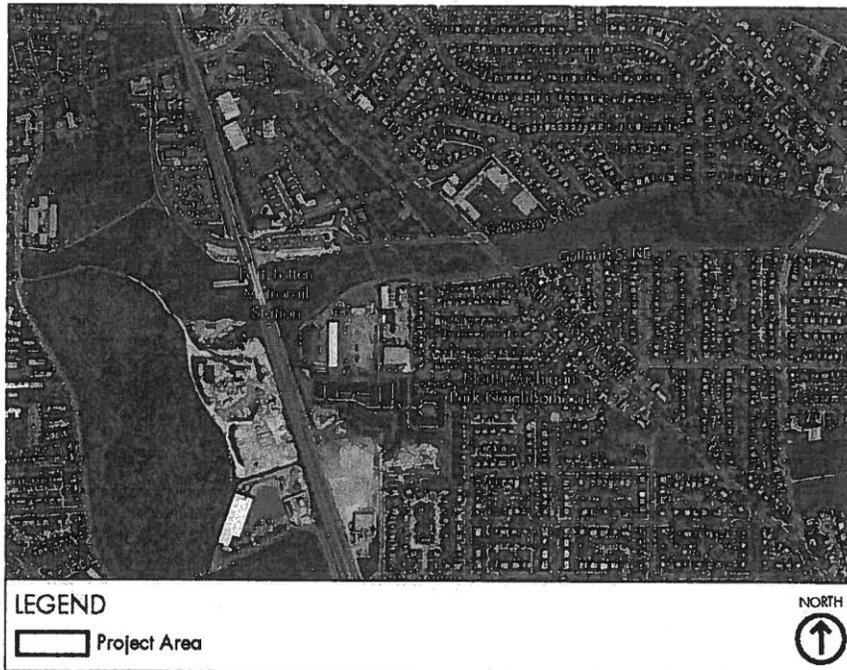
Sincerely,

A handwritten signature in black ink, appearing to read "Tara D. Morrison".

Tara D. Morrison  
Superintendent

Enclosure: Map of Proposed Project Area

Map of Proposed Project Location





## United States Department of the Interior

NATIONAL PARK SERVICE  
National Capital Region  
Rock Creek Park  
3545 Williamsburg Lane, N.W.  
Washington, DC 20008-1207

1.A.1(NCR-ROCR)

February 27, 2014

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

Dear Ms. LaRouche:

The National Park Service (NPS) is proposing to improve pedestrian access to the Fort Totten Metrorail and bus facilities in Washington, D.C. from an adjacent residential neighborhood. I am writing to request a list of federally listed species that may be impacted by this proposed project and to initiate informal Section 7 consultation.

The proposed project area is administered by Rock Creek Park (ROCR) and is located within the Civil War Defenses of Washington. It includes a stretch of forested park land just east of the Fort Totten Metrorail Station and is bound by Galloway Street N.E. to the north, South Dakota Avenue N.E. to the east, Gallatin Street N.E. to the south, and the Washington Metropolitan Area Transit Authority property to the west.

The NPS is preparing an Environmental Assessment for this project, in accordance with the National Environmental Policy Act of 1969. The project will include examining improved connectivity and public safety in the project area, as well as to providing additional protection for park resources.

We have enclosed a map of the project area with this letter. Please note that we are also sending a letter to the D.C. Department of the Environment (Fish and Wildlife Division) to solicit their input about this project. If you have questions or require further information, please contact Rock Creek Park Chief of Resources Management Nick Bartolomeo at 202-895-6010, or by email at [nick\\_bartolomeo@nps.gov](mailto:nick_bartolomeo@nps.gov).

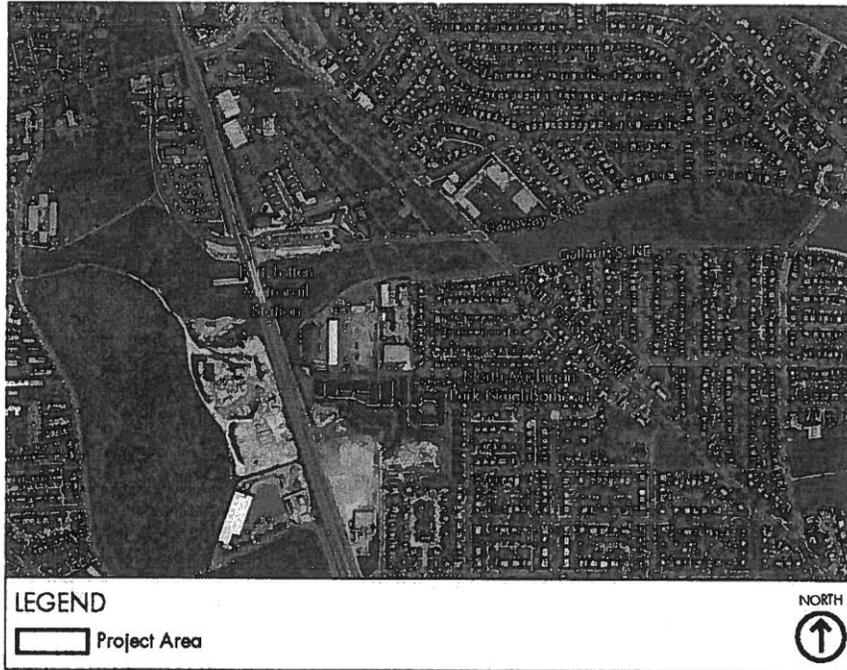
Thank you for your assistance with this project.

Sincerely,

Tara Morrison  
Superintendent

Enclosure: Map of Proposed Project Area

Map of Proposed Project Location





## United States Department of the Interior

NATIONAL PARK SERVICE  
National Capital Region  
Rock Creek Park  
3545 Williamsburg Lane, N.W.  
Washington, DC 20008-1207

1.A.2 (NCR-ROCR)

August 5, 2014

Mr. Reid Nelson, Director  
Office of Federal Agency Programs  
Advisory Council on Historic Preservation  
1100 Pennsylvania Avenue, N.W., Suite 803  
Washington, D.C. 20004

Dear Mr. Nelson:

The National Park Service is proposing to improve pedestrian access to the Fort Totten Metrorail station and adjacent bus facilities, an undertaking which could have an effect upon historic properties under Section 106 of the National Historic Preservation Act.

The proposed project area is administered by Rock Creek Park and is located within the Civil War Defenses of Washington. It includes a stretch of forested park land just east of the Fort Totten Metrorail Station and is bound by Galloway Street NE to the north, South Dakota Avenue NE to the east, Gallatin Street NE to the south, and the Washington Metropolitan Area Transit Authority property to the west. The project seeks to improve connectivity between the North Michigan Park neighborhood and the Fort Totten Metrorail Station. It also includes tasks to improve public safety and protect park resources.

Currently, the only official public pathways to access the Fort Totten Metrorail Station from the adjacent North Michigan Park neighborhood are located around the perimeter of the project area. Pedestrians have created an unofficial trail through the project area to shorten this walk. However, robberies and assaults have occurred along the unofficial trail, and park resources are being damaged by illegal dumping and by persons seeking to widen the trail. Addressing these issues by improving public access may result in improved pedestrian safety and beneficial impacts to historic and natural resources.

In 1977, Fort Totten was listed in the National Register of Historic Places as part of the Fort Circle Parks/Defenses of Washington Historic District. The National Register boundary of Fort Totten, as currently listed, is located outside of the project area. The NPS is currently updating the National Register nomination and proposing a boundary expansion for this district.

The proposed boundary expansion would include the US Reservation where the project area is located.

The National Park Service is preparing an Environmental Assessment to evaluate impacts specific to this project, in accordance with the National Environmental Policy Act of 1969 (NEPA). We intend to coordinate the Section 106 process with the NEPA per the Advisory Council on Historic Preservation's procedures found at 36 CFR 800.8. We are conducting consultation with the public per 36 CFR 800.3(e) through a public scoping meeting, held March 19, 2014, as well as through our Planning, Environment, and Public Comment website (<http://parkplanning.nps.gov/rocr>). It is anticipated that these outreach efforts will accommodate both the NEPA and the Section 106 process.

I have attached a map that illustrates the project area. If you have any questions, please contact Nick Bartolomeo, Chief of Resources Management, at 202-895-6010, or by email at [nick\\_bartolomeo@nps.gov](mailto:nick_bartolomeo@nps.gov).

Thank you for your consideration.

Sincerely,



Superintendent  
Rock Creek Park

### Proposed Project APE



#### LEGEND

-  Project Area
-  Draft Area of Potential Effect (APE)

NORTH





## United States Department of the Interior

NATIONAL PARK SERVICE  
National Capital Region  
Rock Creek Park  
3545 Williamsburg Lane, N.W.  
Washington, DC 20008-1207

1.A.2 (NCR-ROCR)

August 5, 2014

Mr. David Maloney  
State Historic Preservation Officer  
Historic Preservation Office  
1100 4th Street, SW, Suite E650  
Washington, DC 20024

Dear Mr. Maloney:

The National Park Service is proposing to improve pedestrian access to the Fort Totten Metrorail and adjacent bus facilities from the North Michigan Park neighborhood. I am writing to formally initiate consultation for this undertaking with the District of Columbia Historic Preservation Office, in accordance with 36 CFR 800.3 of Section 106 of the National Historic Preservation Act of 1966, as amended.

The proposed project area is administered by Rock Creek Park and is located within the Civil War Defenses of Washington. It includes a stretch of forested park land just east of the Fort Totten Metrorail Station and is bound by Galloway Street NE to the north, South Dakota Avenue NE to the east, Gallatin Street NE to the south, and the Washington Metropolitan Area Transit Authority property to the west. The project would include tasks to improve connectivity and public safety as well as to provide additional protection for park resources.

In 1977, Fort Totten was listed in the National Register of Historic Places as part of the Fort Circle Parks/Defenses of Washington Historic District. The National Register boundary of Fort Totten, as currently listed, is located outside of the project area. The NPS is currently updating the National Register nomination and proposing a boundary expansion for this district. The proposed boundary expansion would include the US Reservation where the project area is located.

The National Park Service is preparing an Environmental Assessment for this project, in accordance with the National Environmental Policy Act of 1969 (NEPA). We are requesting streamlining of Section 106 with the NEPA requirements in accordance with 36 CFR 800.8. We are conducting consultation with the public, which included a public scoping meeting on March 19, 2014, as well as through our Planning, Environment, and Public Comment website

([www.parkplanning.nps.gov/rocr](http://www.parkplanning.nps.gov/rocr)). We anticipate that these outreach efforts will accommodate both the National Environmental Policy Act requirements and the Section 106 process.

We have attached a map showing the proposed Area of Potential Effects (APE). The proposed APE consists of the portion of the Civil War Defenses of Washington and is roughly bounded to the east by South Dakota Avenue, NE; to the south by Gallatin St, NE; Washington Metropolitan Area Transit Authority property to the west; and Galloway St, NE to the north. Since the undertaking is limited to, at maximum, the construction of pedestrian access paths, clearing of invasive vegetation, and the addition of small-scale features such as benches or trash receptacles, the APE is limited to the project area and its immediate surroundings. While part of the larger Rock Creek Park system, this section is divided from the park to the east by South Dakota Avenue. Park land to the west, which includes historic Fort Totten, is physically and visually separated from the project area by the Washington Metropolitan Area Transit Authority's right of way. The undertaking will not have any direct or indirect effects on residential and commercial areas to its north and south. Therefore, these areas were not included in the APE.

We request concurrence with the proposed APE, and look forward to working with your office and the public as we proceed with the planning process for this project. If you have any questions or need additional information, please contact Nick Bartolomeo, Chief of Resources Management, at 202-895-6010, or by email at [nick\\_bartolomeo@nps.gov](mailto:nick_bartolomeo@nps.gov).

Thank you for your assistance with this project.

Sincerely,



Superintendent  
Rock Creek Park

Proposed Project APE



LEGEND

-  Project Area
-  Draft Area of Potential Effect (APE)

