

1 PURPOSE AND NEED

The District Department of Transportation (DDOT), in conjunction with the Federal Highway Administration (FHWA), and in cooperation with the National Park Service (NPS), is proposing the rehabilitation of a 1.5-mile segment of Broad Branch Road NW, between Linnean Avenue NW and Beach Drive NW (see **Figure 1-1**). FHWA has oversight responsibility for the Federal-aid program and is participating in the funding of the project. The existing two-lane Broad Branch Road lies almost entirely within DDOT right-of-way and is maintained by DDOT. The eastern edge of the roadway between 27th Street and Beach Drive borders Rock Creek Park, which is owned by the federal government and administered by NPS.

This Revised Draft Environmental Assessment (EA) expands upon the discussions presented in the initial EA published on October 9, 2013. This revised EA further documents the analysis of a range of alternatives for improvements to the operations and safety of the roadway and the selection of the Preferred Alternative. The alternatives considered were consistent with the project setting and addressed deficiencies in the existing roadway infrastructure and stormwater management systems outside the existing DDOT right-of-way; improved the safety of motorists, pedestrians, and bicyclists; and enhanced linkages that serve pedestrian and bicycle travel. Project goals were to minimize roadway elements that occur outside the existing DDOT-owned right-of-way.

This EA and Section 4(f) Evaluation have been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA); Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508); FHWA's *Environmental Impact and Related Procedures* (23 CFR 771); FHWA's *Technical Advisory Guidance for Preparing and Processing Environmental and Section 4(f) Documents* (T6640.8A) (FHWA, 1987); DDOT's *Environmental Policy and Process Manual* (DDOT, 2012); and NPS Director's Order #12: *Conservation Planning, Environmental Impact Analysis, and Decision-making* and Director's Order #87D: *Non-NPS Roads* (NPS, 2011). The project also includes the evaluation of potential effects to cultural resources in accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966.

1.1 PURPOSE OF THE PROPOSED ACTION

The purpose of the proposed action is to rehabilitate Broad Branch Road to satisfy operational and safety needs in a manner keeping with the setting of the project area. Context sensitive solutions took into account the adjoining land uses that consist of residential, sovereign nation properties; institutional developments; and wooded areas, including Rock Creek Park. Improvements to the corridor considered all modes of transportation including motorized vehicles, bicycles, and pedestrians.

1.2 NEEDS FOR THE PROPOSED ACTION

The needs for improvements to Broad Branch Road relate primarily to deficiencies in the existing roadway infrastructure and stormwater management system; the safety of motorists, pedestrians,



Figure 1-1. Project Location

and bicyclists; and linkages to serve pedestrian and bicycle travel along the roadway itself as well as to the Rock Creek Park trail systems (i.e., Rock Creek Park Trail, Western Ridge Trail, and Soapstone Valley Trail).

1.2.1 INFRASTRUCTURE DEFICIENCIES

There are a number of deficiencies with respect to the current physical condition of Broad Branch Road, including deteriorating pavement and substandard roadway geometry, intersection geometrics, and roadway shoulders; inadequate stormwater drainage; and aging and inadequate roadway structures (e.g., culverts, bridges, and guardrails), as described further below.

1.2.1.1 Roadway Pavement and Geometry

The existing Broad Branch Road roadway pavement is deteriorated and crumbling in many locations (see **Figure 1-2**), a problem exacerbated by stormwater drainage issues. The existing roadway has an apparent failed base, inadequate pavement, and roadway width less than required by current roadway design standards. Concrete curb is provided sporadically along the roadway and has been infilled with asphalt in some sections. The pictures in Figure 1-2 illustrate the deteriorating pavement, side-slope erosion, steep roadway slopes, and the impact of ponding runoff due to inadequate stormwater management.



Figure 1-2. Deteriorated Infrastructure along Broad Branch Road

The majority of Broad Branch Road is classified as a collector roadway. Based on roadway design standards developed to provide for safe travel, the minimum design speed for a collector roadway is 25 miles per hour (mph) (DDOT Design and Engineering Manual, 2017). While Broad Branch Road is currently posted for 25 mph, the roadway geometrics at two locations require speed reductions (to either 20 mph or 15 mph). In addition, 12 of 35 vertical curves^[1] and 9 of 28 horizontal curves on Broad Branch Road do not meet the minimum requirements for this design speed and limit sight distance. The geometrics of the roadway reflect the topography within the study area, which is dominated by steep slopes and limited right-of-way.

1.2.1.2 Stormwater Drainage

The project area generally drains from north to south and the offsite areas drain from west to east. Runoff from the roadway and adjacent offsite areas, west of Broad Branch Road, is collected by

^[1] A vertical curve is a civil engineering term used to describe the smooth curve that is inserted between two sections of a road that are at different slopes in order to avoid an abrupt transition in passing from one to the other.

the existing storm drain system, where available, and discharged into Broad Branch. The roadway drainage system consists of inlets in the areas where there are existing storm sewer systems and these discharge into Broad Branch in Rock Creek Park via 21 existing outfalls, including both piped channels and low points along the roadway. A review of current conditions indicates that most of the inlets along the roadway are of inadequate capacity to capture combined runoff from the roadway and offsite areas. As a result, significant amounts of stormwater runoff bypass the inlets and sheet flow over the road and directly into Broad Branch. The lack of existing stormwater management facilities in the project area means that runoff from the roadway and offsite areas discharges into Broad Branch without any water quality treatment. This uncontrolled runoff has also contributed in large part to the deterioration of the roadway, the stream banks of Broad Branch, and retaining walls adjacent to Broad Branch Road. The current conditions are unsafe because of these drainage issues; the lack of adequate stormwater management combined with the topography results in areas along the roadway where ponding often occurs. **Figure 1-3** illustrates deteriorated conditions caused by stormwater runoff within the roadway corridor.



Figure 1-3. Examples of Drainage Issues

1.2.1.3 Roadway Structures

Broad Branch Road crosses over Soapstone Creek on a single stone masonry semicircular arch culvert that is aging and substandard in terms of condition and its ability to convey floodwaters from major periodic storms (see **Figure 1-4**).



Figure 1-4. Soapstone Creek Culvert

An inspection of the culvert conducted in 2003 found the structure to be in generally satisfactory condition; however, deficiencies included collapsed headwall capping stones, poorly placed manhole cover grates, accumulated debris at the inlet (west side), collapsed stone retaining/wing walls on the east, non-standard cable wire guardrails, channel scour in the arch barrel, need for upstream channel bank stabilization to prevent overflow, and non-standard masonry parapet for crash protection (Wilbur Smith Associates, 2003). After numerous flooding episodes, a major storm event in April 2011 resulted in sinkholes in the roadway surface and a partial collapse of the arch (see Figure 1-4). DDOT took immediate measures to prevent further damage to the structure by covering the roadway holes with steel plates, installing a temporary bridging platform to permit one lane of travel over the culvert, and implementing temporary structural repair to the culvert that included installation of a corrugated steel lining to stabilize the arch barrel.

1.2.2 SAFETY

Broad Branch Road can generally be characterized as a low-speed roadway (posted speed limit of 25 mph) with a mix of straight and curved roadway sections. Rolling topography and steep grades play a role with respect to both the vertical geometrics of the roadway itself as well as adjacent lands, resulting in areas with limited sight distances that adversely affect the safety of motorists, pedestrians, and bicyclists. Navigation of the curves in the roadway and risk of running off the road or suddenly coming upon pedestrians, bicyclists, or other vehicles using the roadway are hazards that motorists encounter. Poor lighting within the roadway corridor also reduces available reaction time for the motorists, bicyclists, and pedestrians.

Safety is a primary concern on Broad Branch Road due to the lack of separate facilities for pedestrians and bicyclists and due to speeding along the roadway, as reported by local residents. The lack of both sidewalks and dedicated areas for bicycles to travel means that the roadway is shared by motorized vehicles, bicycles, and pedestrians. Pedestrians walking within the project area (for exercise and recreation; to Rock Creek Park and other community facilities; or to visit neighbors) must walk within the roadway. The fact that users of each mode must be aware of the two other types of users within a constrained roadway corridor exacerbates safety concerns substantially.

The topography of the area also creates safety issues on Broad Branch Road with respect to drainage and the accommodation of stormwater. While pooling of water does not present a major concern for the relatively slow-moving vehicles on Broad Branch Road, it does present safety concerns to motor vehicles when the water freezes during winter months and to bicyclists year-round.

1.2.3 SYSTEM LINKAGE

As a roadway that is designated as a collector over most of its length, Broad Branch Road serves its intended function of providing access to residences along the roadway as well as to Rock Creek Park. In addition, daily commuters also use Broad Branch Road as a north-south alternative to Connecticut Avenue as well as for cross-Park movements through Rock Creek Park. Additional vehicular linkages or capacity are neither needed nor intended for this roadway. The roadway, however, does not provide needed linkages for both pedestrians and bicycles.

As noted, Broad Branch Road currently lacks safe amenities to serve pedestrians and bicycles. Two pedestrian trails are located in the southern portion of the project area. On the east, the

Western Ridge Trail provides access to Rock Creek Park and on the west, the Soapstone Valley Trail extends to Soapstone Valley. A third trail near the project area is Rock Creek Park Multi-Use Trail, a paved multi-use path within the boundaries of Rock Creek Park. To the south of the project area, the trail follows the alignment of Beach Drive and Rock Creek and Potomac Parkway. North of Broad Branch Road and Beach Drive, bicyclists must share the road with motorists, but on weekends this portion of Beach Drive is largely closed to motorized vehicles. The trails are generally for recreational use and have limited connectivity to Broad Branch Road due to lack of existing pedestrian or biking facilities in the roadway. The southern segment of Broad Branch Road, from Brandywine Street to Beach Drive, is depicted in the DC Bicycle Master Plan's Proposed Bicycle Facilities Map as an on-street bicycle route that provides for needed linkages for bicycle travel within this area of the District (DDOT, 2005c). Although only the southern segment is designated as a bicycle route, there are bicycle signs along the entire roadway in the project area. The master plan does not include any proposed improvements to the existing bicycle route or other portions of the road. Improvements to enhance its ability to safely carry bicycles are needed to support the viable use of Broad Branch Road as a key linkage in the overall bicycle system.

There are no internal linkages or crosswalks for pedestrians to the parks and residential areas adjacent to Broad Branch Road.

1.2.4 LEGISLATION

As described in FHWA Technical Advisory T6640.8a, federal, state, and local government mandates are appropriate elements of the need for a proposed action. A key piece of local legislation related to the need for improvements to Broad Branch Road is the District of Columbia's Priority Sidewalk Assurance Act of 2010 (Law #L18-0227) enacted on July 7, 2010 and effective September 24, 2010. This law requires the installation of sidewalks "to ensure a safe and accessible environment for pedestrians and persons with disabilities." The law requires that, for roadways with no sidewalks on either side of the roadway, reconstruction shall include installation of a sidewalk. It further states that, for "roadways that are missing sidewalks, but are not undergoing major construction, sidewalk installation shall be prioritized for the following areas: (1) Missing sidewalks in school areas; (2) Routes that provide access to parks and recreational facilities; (3) Transit stops; (4) Locations where the absence of a sidewalk creates substantial pedestrian safety risks; and (5) Roadway segments for which residents petitioned to have sidewalks."

1.3 PROJECT OVERVIEW

1.3.1 BACKGROUND

The rehabilitation of Broad Branch Road was originally placed on DDOT's schedule of planned improvements because of the apparent need for roadway repair and the desire for a safer facility. The roadway is unsafe because of drainage issues, as well as poor lighting and the tendency for drivers to exceed the posted speed limit.

The uncontrolled runoff from elevated parcels to the north and west of the roadway has contributed in large part to the deterioration of this two-lane roadway. The large volume of stormwater has also had detrimental effects on the adjacent streambeds in Broad Branch and

Soapstone Creek. Extensive erosion at outfalls as well as at streambeds of the receiving waterways has been attributed to the high, erosive powers of the stormwater. The need for a total solution involving improvements on National Park properties has resulted in NPS serving as a Cooperating Agency in the development of this EA. Other notable environmental issues associated with this project include Section 106 (cultural resources), Section 4(f) resources (cultural resources and parklands), habitat concerns (fish and wildlife), water quality, and residential concerns (noise and visual intrusion and bike/pedestrian safety).

Aging infrastructure has contributed to the deficiencies in the roadway corridor. The culvert carrying Broad Branch Road over Soapstone Creek has been temporarily repaired after partial collapse and requires permanent replacement. Replacement of this culvert will be addressed as a part of the upgrades planned for Broad Branch Road.

The District Department of Energy & Environment (DOEE) and NPS completed a stream restoration “daylighting” project to an unnamed tributary of Broad Branch in the northern end of the project corridor in 2014 (see Section 1.6.8 for details).

1.3.2 DESCRIPTION OF THE PROJECT AREA

Broad Branch Road is a two-lane roadway located in northwest Washington, DC. The portion of Broad Branch Road in the identified project area extends south from Linnean Avenue to just north of Beach Drive, a distance of approximately 1.5 miles. For much of its length, the roadway parallels the channel of Broad Branch. The approximately 170-acre Broad Branch watershed is a highly urbanized sub-watershed of Rock Creek. As shown in Figure 1-1, Rock Creek Park (owned by the federal government and administered by NPS) is located immediately east of Broad Branch Road south of 27th Street, which creates a wooded, rural-like setting for much of the project corridor, as shown in **Figure 1-5**. Rock Creek Park is one of the largest forested urban parks in the United States, nearly a mile wide in some places, and contains a wide variety of natural, historical, and recreational features in the midst of Washington, DC. It is this rural-like context within an otherwise urbanized area that residents suggest make this roadway unique.



Figure 1-5. Existing Roadway

Areas north of 27th Street include institutional properties, single- and multi-family residences, and additional parkland. The Carnegie Institution of Washington, Department of Terrestrial Magnetism (DTM), a scientific research facility, and Ingleside at Rock Creek, a retirement facility, occur on the north side of the roadway in this segment. Residences, including those for the

ambassadors of Tunisia, Ivory Coast, and Peru, also occur in this same area. Parkland on the north end of the Broad Branch Road corridor comprises portions of the Civil War Defenses of Washington (Fort Circle Parks) system, another management unit of NPS.

South of 27th Street, areas to the west of Broad Branch Road include the residential neighborhood of Forest Hills, embassy residences for Italy and Malaysia, a trailhead for Soapstone Valley Trail, and Hillwood Museum and Gardens. A small triangle park is located in the traffic island at the intersection of Broad Branch Road and Brandywine Street.

At its southernmost point, Broad Branch Road crosses into NPS property before intersecting with Beach Drive. The road alignment becomes Blagden Avenue after it crosses Rock Creek.

1.4 PROJECT GOALS

Project goals were established by the DDOT study team to aid in the development of improvement concepts for Broad Branch Road. These goals were developed by considering the purpose and need, agency/public comments, and project area constraints.

The goals for the Broad Branch Road project are listed below:

- Create a safe facility for all users of the roadway (motorists, pedestrians, bicyclists)
- Effectively manage stormwater runoff
- Avoid/minimize use of parklands and lands owned by sovereign nations to the extent possible
- Preserve and protect environmental resources – both man-made and natural – and retain the current context of the corridor (i.e., visual aesthetic, using context-sensitive solutions in the planning and design phases of the project)
- Provide improved access to Rock Creek Park
- Utilize environmentally sensitive materials and practices

In addition to the project goals, the proposed improvements for Broad Branch Road consider design criteria outlined in the American Association of State and Highway Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities* (AASHTO, 2012); DDOT *Design and Engineering Manual* (DDOT, 2017); DDOT *Standard Specifications for Highways and Structures* (DDOT, 2013); DDOT *Bicycle Master Plan* (DDOT, 2005b); DDOT *Bicycle Facility Design Guide* (DDOT, 2005a); DDOT *Environmental Policy and Process Manual* (DDOT, 2012); the *Manual on Uniform Traffic Control Devices (MUTCD) Traffic Controls for Bicycle Facilities, Part 9* (FHWA, 2009 Edition with Revision Numbers 1 and 2 incorporated, May 2012); *District of Columbia Pedestrian Master Plan* (DDOT, 2009d); AASHTO *Guide for the Planning, Design, and Operation of Pedestrian Facilities* and 2010 Update of the AASHTO Guide (AASHTO, 2004; Toole, 2010); and other design guidance.

1.5 DESIGN CONSIDERATIONS

Based on data collection, field observation, and input from the project's stakeholders, the DDOT study team formulated an array of considerations to help with the development of alternatives for the proposed improvements to Broad Branch Road. Field reviews were conducted with

DDOT and NPS staff to gain first-hand knowledge about issues in the roadway corridor. Stakeholder input was gathered at agency and public scoping meetings. Finally, data collection and research, as documented by the environmental conditions and considerations presented in Chapter 3, were used to best address necessary Broad Branch Road improvements while incorporating community needs and resource preservation.

The following considerations led to the formation of alternatives and options that were carried forward for detailed study or dismissed.

1.5.1 ROADWAY CONSIDERATIONS

Roadway improvements considered consisted of rehabilitating the roadway subgrade, repaving, and realigning to improve sight distances, as necessary. Various widths of the roadway's travel surface were developed depending on the inclusion of different elements. These widths and elements include:

- Varying lane widths – 10, 11, and 12 feet
- Travel lanes with and without shoulders, curbs and gutter
- Shared travel lanes that include bike lanes

1.5.2 BICYCLE AND PEDESTRIAN CONSIDERATIONS

To accommodate other modes of transportation, consideration was given to bicyclist and pedestrian facilities that included:

- Bike lanes – on and off the travel lanes
- Sidewalks and walking trails
- Shared-use paths for walking and biking

1.5.3 STORMWATER MANAGEMENT CONSIDERATIONS

Stormwater runoff can be controlled by a series of improvements that are located on or adjacent to the roadway. Within the roadway, curb and gutter can be incorporated to convey waters to catch basins and into storm sewer systems. Adjacent to the roadway, the project may implement Low Impact Development (LID) principles and practices so that water can be managed in a way that reduces the impact of built areas and promotes the natural movement of water within the ecosystem and watershed. There are many practices that can be used to adhere to these principles and include, but are not limited to, the following:

- Vegetated grass swales
- Planting strips
- Bioretention cells or swales
- Rain gardens

1.6 RELATIONSHIP TO OTHER PLANS AND STUDIES

The project is consistent with the District's planning documents and projects, including the following.

1.6.1 DISTRICT OF COLUMBIA BICYCLE MASTER PLAN

The DDOT 2005 *Bicycle Master Plan* (DDOT, 2005b) includes several core goals and recommendations to establish a world-class bicycle transportation system in the District of Columbia. Several strategies are named to increase bicyclist safety and security while improving the connectivity and accessibility of destinations and activity centers within the District of Columbia. The proposed improvements to Broad Branch Road, which can enhance pedestrian and bicycle facilities along the roadway, is consistent with the first goal of the plan: to provide “more and better facilities.”

1.6.2 DISTRICT OF COLUMBIA PEDESTRIAN MASTER PLAN

The proposed improvements to Broad Branch Road are consistent with the *District of Columbia Pedestrian Master Plan* (DDOT, 2009d), which seeks to reduce the number of pedestrian/motor vehicle crashes and increase pedestrian activity by making walking a comfortable and accessible mode of travel throughout all parts of the District. The Plan also encourages improved facilities and policies to promote the benefits of walking for transportation, recreation, and health. Proposed improvements include the addition of pedestrian facilities along the entire length of the roadway to ensure a safe and accessible environment for pedestrians and persons with disabilities.

1.6.3 ROCK CREEK PARK TRAIL PROJECT

DDOT and NPS are implementing plans to rehabilitate the Rock Creek Park Trail and Rose Park Trail in Rock Creek Park from M Street on the south end to Broad Branch Road/Beach Drive on the north end, including a spur trail along the Piney Branch Parkway. The design plan will address several key elements, including development of new trail connections. The proposed improvements to Broad Branch Road would provide improved access to and from the multi-use trail system in Rock Creek Park. NPS conducted a NEPA study for the project and a Finding of No Significant Impact was signed on April 29, 2015.

1.6.4 ROCK CREEK WATERSHED IMPLEMENTATION PLAN

The DOEE Watershed Protection Division (WPD) operates under a mission to conserve the soil and water resources of the District of Columbia and to protect its watersheds from nonpoint source pollution. Consistent with that mission, WPD has prepared a *Rock Creek Watershed Implementation Plan* (DOEE, 2010). The plan states that “(t)he Watershed Implementation Plan is an effort to create a watershed-based non-point source pollution control plan that meets EPA’s requirements for acceptance while providing a realistic and adaptable guide for agencies responsible for the restoration of Rock Creek at the local level.”

The proposed improvements to Broad Branch Road are consistent with the District’s goals of improving water quality and managing nonpoint source pollution. An important component in addressing these issues is managing the large quantities of uncontrolled and untreated stormwater runoff flowing into Rock Creek and its tributaries from impervious surfaces. Stormwater management for this project would support the goals set forth in the *Rock Creek Watershed Implementation Plan* by following its recommendations, including implementation of LID projects, bioretention measures, erosion and sediment control, restoration of eroded stream banks, and tree plantings.

1.6.5 COMPREHENSIVE PLAN OF THE NATIONAL CAPITAL

The *Comprehensive Plan of the National Capital* (DC Government, 2007c), which was first adopted in 1984 and 1985 and is updated periodically, is a general policy document that provides overall guidance for future planning and development of the city. The plan was last amended in 2011, and the DC Office of Planning has launched an effort to amend the Comprehensive Plan a second time to ensure that it remains responsive to the needs of the community. The plan comprises two parts, the District Elements and the Federal Elements, which are adopted by the DC Council and the National Capital Planning Commission (NCPC), respectively.

The proposed improvements to Broad Branch Road support the *Comprehensive Plan of the National Capital: District Elements* -- 13 citywide elements that provide goals, objectives, and policies for land use issues that impact the whole city, e.g., transportation, environment, parks and open space, historic resources, cultural resources, arts, and culture. The plan contains recommendations for maintaining these goals including:

- Increasing investment in bus and rail transit, pedestrian and bicycle facilities, and other modes of travel to solve the region's traffic problems and sustain economic growth;
- Promoting natural resource conservation and environmental sustainability by protecting, restoring, and enhancing earth, water, air, and biotic resources of the District;
- Protecting, maintaining, and improving social, economic, historic, and physical qualities of residential neighborhoods;
- Improving the connections between different transportation modes, improving traveler safety and security, and increasing system efficiency;
- Improving connections to the city's celebrated spaces, such as Rock Creek Park;
- Retaining historic and unique qualities of Washington's streetscapes; and,
- Encouraging land use patterns and land uses that reduce air pollution and facilitate pedestrian and bicycle travel.

The proposed improvements to Broad Branch Road are consistent with each of these plan goals.

1.6.6 ROCK CREEK PARK GENERAL MANAGEMENT PLAN

The *Rock Creek Park General Management Plan* (NPS, 2006) is a comprehensive and integrated plan that guides the management of Rock Creek Park and the Rock Creek and Potomac Parkway in a way that best meets diverse demands on park resources. The Plan's approved alternative, "Improved Management of Established Park Uses," retains the current scope of visitor uses while improving visitor safety, better controlling traffic volumes and speeds through the Park, enhancing interpretation and education opportunities, and improving the use of park resources, especially cultural resources. The proposed improvements to Broad Branch Road are consistent with the goals of the *General Management Plan* in that they would improve the safety of pedestrian, bicycle, and roadway linkages to the Park while not detracting from the use of park resources.

1.6.7 FORT CIRCLE PARKS GENERAL MANAGEMENT PLAN

During the Civil War, the federal government built fortifications surrounding Washington, DC to protect the city and vital supply routes. The remains of these fortifications are managed as an administrative unit of NPS designated as the Fort Circle Parks (Civil War Defenses of Washington).

In 2004, NPS completed a General Management Plan (GMP) for the Fort Circle Parks (NPS, 2004). The GMP allows for these resources to be preserved for future generations and to be interpreted in an easily understandable manner. Rock Creek Park, one of three NPS units that manage the Fort Circle Parks, administers a semicircle of these Civil War sites. The northern portion of the project area for the Broad Branch Road rehabilitation project is immediately adjacent to the Rock Creek Park portion of the Fort Circle Parks.

1.6.8 RESTORATION OF UNNAMED TRIBUTARY TO BROAD BRANCH ENVIRONMENTAL ASSESSMENT

Since the publication of the initial EA, the DOEE and NPS have completed all stream restoration activities included in the environmental document (DOEE and NPS, 2012). The project restored approximately 1,600 linear feet of the stream, located upstream of 36th Street to just upstream of the crossing on Broad Branch Road, across the street from the entrance to the Embassy of Ivory Coast. This “daylighting” project treats and removes pollutants by exposing stream water to sunlight, air, soil, and vegetation, and reduce nutrient and sediment pollution from erosion. DOEE, in partnership with NPS, DDOT, the District of Columbia Water and Sewer Authority (DC Water), and the Embassy of Peru, completed the daylighting of the piped stream in the spring of 2014. Three regenerative stormwater conveyance systems were installed in the daylighted stream and 10 LID systems installed throughout the project area to treat stormwater runoff from a nearby road and alley.

1.6.9 REPLACEMENT OF THE 27TH STREET NW BRIDGE

This project has also been completed since the publication for the initial EA. DDOT replaced the one-lane roadway bridge (District of Columbia Bridge #0017) carrying 27th Street NW over Broad Branch stream with a two-lane bridge. The project included complete replacement of the bridge’s substructure and superstructure, and reconstruction of the roadway approaches. The original bridge was built in circa 1925 and had been identified as in need of replacement as it was severely deteriorated and posed a safety risk to travelers. DDOT prepared a Categorical Exclusion document to accompany the Preliminary Engineering Report (AECOM, 2012) and completed design and construction of the new bridge in 2015.

1.6.10 SEWER REHABILITATION PROJECT – SOAPSTONE VALLEY PARK

DC Water has completed NEPA documentation to examine potential impacts from rehabilitating the existing sanitary sewer system in Soapstone Valley. Benefits of this project would include the rehabilitation of an aging sewer system, improved structural integrity while maintaining adequate hydraulic capacity, and the reduction of stream and groundwater infiltration and potential sanitary sewer overflows. Soapstone Valley surrounds Soapstone Creek, a tributary of Broad Branch, and includes an unpaved hiking trail near the southern end of the Broad Branch Road project area. The proposed sewer project begins at the trailhead at Albemarle Street and extends east through the valley, to the end of the trail at Broad Branch Road. It is anticipated that

two Municipal Separate Storm Sewer System (MS4) outfalls will be repaired. One of the MS4 outfalls is south of the Albemarle Street NW and 32nd Street NW intersection and the second is south of the Albemarle Street NW and Linnean Avenue NW intersection.

NPS manages the majority of the project area as Soapstone Valley Park, but the western and eastern ends of the project area occur within DDOT right-of-way. The main sewer line occurs under the Soapstone Valley Trail in many locations and erosion along the banks of the stream has exposed segments of the line and narrowed the width of the trail path. The east end of the DC Water project area overlaps the DDOT Broad Branch Road project area where Soapstone Creek Culvert conveys Soapstone Creek under Broad Branch Road. The proposed project will affect the mainline and all laterals in the valley and all access manholes.

In the Broad Branch Road project area, an 18-inch diameter sanitary sewer line parallels the south side of Soapstone Creek ending about 20 feet from Broad Branch Road where a manhole marks the location of a split in the lines. A 21-inch diameter pipe extends southeast under Broad Branch Road, accessible from another manhole in the roadway, and an 18-inch pipe extends northeast under the Soapstone Creek streambed, the existing west headwall of the Soapstone Creek Culvert, and to another manhole along the eastern edge of Broad Branch Road.

DC Water prepared a Draft EA and Statement of Findings (SOF) and submitted both to NPS in 2015, followed by a Revised Draft EA in August 2016. A Revised Draft SOF was resubmitted to NPS for review in June 2018. The draft EA was released for public review on June 4, 2019; the public review comment period ended on August 2, 2019; and a Finding of No Significant Impact (FONSI) was issued by the National Park Service on April 14, 2020. DDOT will continue to coordinate with DC Water on the replacement structure for Soapstone Creek Culvert to verify that the new culvert and headwalls would not conflict with repairs to or replacement of the existing sewer line.