



FINDING OF NO SIGNIFICANT IMPACT

Restoration of Unnamed Tributary to Broad Branch

Rock Creek Park Washington, DC

The District Department of the Environment (DDOE) and the National Park Service (NPS), as co-lead agencies, propose to restore approximately 1,600 linear feet of an unnamed tributary to Broad Branch. The project area, located just upstream of 36th Street to just upstream of the crossing on Broad Branch Road, NW, across from the entrance to the Embassy of the Ivory Coast, is characterized by three features:

- Unnamed tributary – Section A is an above-ground, free-flowing stream fed by overland surface runoff and groundwater upstream of the 36th Street Bridge that, since 1937, has been captured near the 36th Street Bridge and piped underneath forested and grassy landscapes to a reinforced concrete box outfall on Broad Branch Road, NW near 27th Street, NW;
- Unnamed tributary – Section B is a free-flowing stream that begins approximately 500 feet upstream of Broad Branch Road, NW (just east of Linnaean Avenue, NW), where groundwater seeps provide base flow to the stream channel, and is collected by a reinforced concrete box culvert, where it combines with the flow from unnamed tributary – Section A en route to the previously mentioned outfall on Broad Branch Road; and
- Two steep, incised gullies located on land owned by the Peruvian Embassy that convey flashy stormwater flows into unnamed tributary – Section B, causing sedimentation that is responsible for the shallow and sluggish flow in unnamed tributary – Section B during dry conditions.

The unnamed tributary drains into the approximately 170-acre Broad Branch watershed, a highly urbanized sub-watershed of Rock Creek located in Washington, DC. The project is needed because a large stretch of the unnamed tributary to Broad Branch is piped. Piped water is not exposed to natural processes -- including sunlight, air, soil, and vegetation -- that help remove pollutants, and does not provide habitat for wildlife. Stormwater mitigation is needed on the property of the Peruvian Embassy because stormwater flowing through incised gullies located on that property deposit eroded material in unnamed tributary – Section B, causing it to fill with sediment. These uncontrolled stormwater flows have destabilized the surrounding environment, reduced infiltration of water into underlying aquifers, and compromised wildlife habitat. Without intervention, this degradation will continue.

DDOE and the NPS have completed an environmental assessment (EA) that provides an analysis of the environmental consequences of the alternatives considered for the restoration of the unnamed tributary to Broad Branch. This EA was prepared in accordance with National Environmental Policy Act of 1969, as amended (NEPA), its implementing regulations by the Council on Environmental Quality (40 CFR 1500-1508), and Director's Order 12, Conservation Planning, Environmental Impact Analysis and Decision-Making, and accompanying Handbook.

SELECTED ALTERNATIVE

NPS concurs with DDOE's Preferred Alternative and has selected Alternative 2, Full Restoration Alternative for implementation. The selected alternative is described on pages 19-21 of the EA. Under the selected alternative, approximately 1,600 linear feet of stream currently piped beneath property owned by NPS and the District of Columbia (District) will be restored. The stream restoration will use stormwater infiltration best management practices (BMPs) and streambed protection to simulate a natural watercourse. The restored watercourse will slow stormwater flows, allowing for more groundwater recharge and restoring the natural stream flow.

The design for this alternative will be a low-energy meandering stream characterized by natural channel and floodplain geometry. This alternative will use the existing stream valley and historic stream channel to the maximum extent possible. Structural features will include low-gradient riffles and deep pools with low-velocity flow in the surface water, as well as an active but low-velocity subsurface flow through the substrate between the bed features. Seepage wetlands and lateral wetland project structural components will be incorporated into the design to complement the flow and habitat features of the project area and to re-establish the stream's base flow.

Specifically, the selected alternative will:

1. Stabilize the bank along the slope west of 36th Street, NW near the 36th Street Bridge on property owned by the NPS. This will be done with grouted riprap from the edge of pavement along 36th Street, NW down to the toe of the embankment in the severely eroded area approximately 10 feet south of the 36th Street Bridge.
2. Install curb and gutter, inlet, and pipe to capture and divert flows stormwater from 36th Street, NW before it reaches the bridge on 36th Street, NW. The pipe outlet will be in the area of 36th Street, NW on property owned by NPS. All other work will be completed within District Department of Transportation (DDOT) right-of-way.
3. Construct three stormwater recharge facilities (SWRF¹):
 - SWRF 1 and 2 will be located along the alley upstream of Linnean Avenue, NW. Inlets within the alley will collect and divert alley runoff to the SWRFs, which will be on property owned by the NPS.
 - SWRF 3 will be located at the corner of Broad Branch Road, NW and Linnean Avenue, NW. Stormwater runoff from the existing inlet along Broad Branch will be diverted to the SWRF via a new pipe. The existing 12-inch corrugated metal pipe will be removed. This facility will be constructed within the DDOT right-of-way.
4. Daylight a portion of the stream just east of 36th Street, NW. The piped stream will be daylighted into a series of shallow ponds and seepage wetlands. The new streambed will be routed under Linnean Avenue, NW to another series of ponds and seepage wetlands just east of Linnean Avenue, NW. A portion of this facility will be located on NPS property, and the remainder will be on property owned by the District.
5. Construct regenerative step pools along the steep eroded gullies adjacent to the Peruvian Ambassador's residence and along the unnamed tributary down to the storm drain inlet under Broad Branch. This work will occur on Peruvian Embassy property.
6. Restore approximately 1,600 linear feet of piped stream and temporarily disturb approximately 11 acres of NPS, DDOT, and private lands.

OTHER ALTERNATIVES CONSIDERED

In addition to the NPS selected alternative described above, the EA analyzed a No Action alternative and one other action alternative, Alternative 3. Under the No Action alternative, a portion of the unnamed tributary to Broad Branch, unnamed tributary A, would continue to flow freely until the 36th Street Bridge, where it is intercepted by storm drains and conveyed to the reinforced concrete box culvert within the Broad Branch Road, NW right-of-way. Discharge collected at this point would continue to be

¹ A stormwater recharge facility is a vegetated depression underlain by permeable substrate like mulch, planting soil, and sand that encourages percolation of runoff and surface water in order to replenish depleted groundwater. Plants used within the stormwater recharge facilities are water tolerant and uptake nutrients dissolved in stormwater.

conveyed to the reinforced concrete box outfall on Broad Branch Road, NW near 27th Street, NW. The stream length between 36th Street, NW and Broad Branch Road, NW would remain piped. A second portion of the unnamed tributary to Broad Branch, unnamed tributary B, would remain a free-flowing stream and would continue to be conveyed to a 36-inch reinforced concrete pipe. This pipe would continue to collect the stream flow and convey it to the reinforced concrete box culvert within the Broad Branch Road, NW right-of-way. This flow would continue to combine with the upstream flow already in the box culvert, and would continue to be discharged into Broad Branch and, ultimately, Rock Creek. The erosion and sedimentation that are degrading the unnamed tributary to Broad Branch -- which have destabilized the surrounding environment, reduced infiltration of water into underlying aquifers, and compromised wildlife habitat -- would continue.

Alternative 3 would involve the restoration of approximately 400 linear feet of stream with a temporary disturbance area of two acres, which currently is piped beneath property owned by the NPS and the District. The stream restoration work would use streambed protection to simulate a natural watercourse. This also would slow stormwater flows, allowing for more groundwater recharge and restoring the natural stream flow.

The design would be a low-energy meandering stream system characterized by natural channel and floodplain geometry. It would use the existing stream valley and historic stream channel to the maximum extent possible. Structural features would include low-gradient riffles and deep pools with low-velocity flow in the surface water, as well as a low-velocity subsurface flow through the substrate between the bed features. Seepage wetlands would be incorporated into the design to compliment the flow and habitat features of the project area and to re-establish base flow.

Alternative 3 would include:

1. Stabilizing the bank along the slope west of 36th Street, NW near the 36th Street Bridge on property owned by the NPS;
2. Installing curb, inlet, and pipe to capture and divert stormwater from 36th Street, NW before it reaches the historic bridge on 36th Street, NW; and
3. Daylighting a portion of the stream just east of 36th Street, NW.

Alternative 3 would continue to degrade the unnamed tributary to Broad Branch because the downstream reach would still be affected by erosion and sedimentation. The drainage gullies on the Peruvian Embassy grounds would not be stabilized and would continue to erode and ultimately deposit sediment into Rock Creek.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The NPS is required to identify the environmentally preferable alternative in its NEPA document for public review and comment. The NPS, in accordance with Department of the Interior policies contained in the Departmental Manual (516 DM4.10) and the Council on Environmental Quality's (CEQ) *NEPA's Forty Most Asked Questions*, defines the environmentally preferable alternative as the one that "causes the least damage to biological and physical environment." It is the alternative "which best protects, preserves, and enhances historic, cultural and natural resources" (Q6a).

After a thorough review of the EA, the NPS identified Alternative 2 as the environmentally preferable alternative. Alternative 2 best protects, preserves, and enhances existing resources. Daylighting the stream will improve water quality at the project location and downstream by exposing water to sunlight, air, soil, and vegetation, all of which help process and remove pollutants. Furthermore, the stream's restoration will reduce nutrient and sediment pollution from erosion caused by fast-flowing stormwater. The project will create meanders and floodplain wetlands, which will provide wider stream cross-sections and greater channel depths than the pipe the new streambed will replace.

Erosion and sedimentation that are degrading the unnamed tributary to Broad Branch, destabilizing the surrounding environment, reducing infiltration of water into underlying aquifers, and compromising wildlife habitat, would continue under the No Action alternative and Alternative 3. Although some of the

unnamed tributary would be daylighted under Alternative 3, the drainage gullies on the Peruvian Embassy grounds would continue to erode and ultimately deposit sediment into Rock Creek.

MITIGATION MEASURES

DDOE and the NPS place a strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. To help ensure the protection of natural and cultural resources and the quality of the visitor experience, the following protective measures will be implemented as part of the selected action alternative.

Soils and Topography. Proper erosion and sediment control measures will be utilized to minimize the overall impacts to soils. These measures will include super silt fencing, earth dike installation, and pump-around diversions for all surface and stormwater. The construction will progress from downstream to upstream to minimize disturbance to soils and topography.

Streams and Wetlands. BMPs will be implemented during construction in non-tidal wetlands, buffers, and waterways. These practices will include the use of protective matting for areas where construction vehicles are used, restoring the area to preconstruction condition, and adhering to an in-stream construction schedule to protect aquatic species during sensitive breeding or migration periods. The impacts will occur within the delineated limits of disturbance, and permits will be obtained from the U.S. Army Corps of Engineers (USACE) and DDOE. The project may qualify under Nationwide Permit 27, Aquatic Habitat Restoration, Establishment and Enhancement Activities, which is at the discretion of the USACE. DDOE will issue a Clean Water Act Section 401 water quality certification. The impacts to water resources will be self-mitigating, since the stream will be restored and daylighted and additional wetland areas will be created.

Water Quality and Hydrology. A Clean Water Act Section 401 water quality certification will be obtained from DDOE. Erosion and sediment control measures, such as super silt fences, stream diversions, and a strict sequence of construction, will occur. The measures used will be approved by Technical Services Branch of DDOE prior to construction.

Vegetation. Native trees (such as black gum, sycamore, pin oak, and silver maple) and shrubs (such as arrowwood, maple leaf viburnum, and spice bush) will be planted along the riparian buffer of the streambank and floodplain. Under the DDOT Urban Forestry Special Tree Removal Permit and standard park practice, the total number of trees planted will at minimum equal the total circumference of all the trees that were removed from the project site. Native plantings also will be established within the stormwater recharge areas.

All graded and newly constructed banks will be stabilized with live stakes installed at a spacing interval of one foot along the bank, from one foot above the edge of the water to the bankfull elevation. The live stakes will be a mix of three or more species reviewed and approved by the NPS, such as spice bush, maple leaf viburnum, and river birch. All other disturbed and graded areas will be seeded and mulched. After construction, DDOE will monitor the project area to ensure that replacement vegetation becomes established and that invasive species do not encroach into the project area.

Archeological Resources. The geoarcheological survey that was conducted for this proposed project determined that there is no potential for the presence of intact archeological resources within the proposed project area. However, if unanticipated archeological resources are discovered, all work in the immediate vicinity of the discovery will be halted until the resources can be evaluated and an appropriate mitigation strategy developed, if necessary. This strategy would be developed in consultation with the NPS National Capital Region and DC Historic Preservation Officer (HPO) following procedures detailed by the Advisory Council on Historic Preservation for post-review discoveries in *Protection of Historic Properties* (36 CFR 800.13). 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 will be followed.

WHY THE SELECTED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT

DDOE and the NPS have determined that the selected alternative, Alternative 2, can be implemented without significant adverse effects. As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Impacts that may have both beneficial and adverse aspects and which on balance may be beneficial, but that may still have significant adverse impacts that require analysis in an Environmental Impact Statement (EIS): As described in the EA, soils and topography, streams and wetlands, floodplains, water quality, hydrology, vegetation, and wildlife will experience both beneficial and adverse impacts as a result of implementing the selected alternative. However, no significant impacts were identified that will require analysis in an EIS.

Soils and Topography. Restoring the unnamed tributary to Broad Branch will have short-term, minor, adverse impacts to soils during construction activities. The stream daylighting and the construction of SWRFs, step pools, and shallow ponds will require soil grading and excavation, as banks will be created in certain locations to daylight the stream and widened in others to accommodate step pools.

Upon completion, daylighting and restoring the unnamed tributary to Broad Branch will stabilize soils and topography. Step pools that will include rock/boulder material of sufficient weight to avoid being carried downstream during large storm events, and/or root wads² and vegetative material, will minimize the erosion of soils occurring on the banks of the unnamed tributary and the steep slopes on the Peruvian Embassy property. Overall, the project will result in long-term, beneficial impacts to soils and topography.

Streams and Wetlands. Construction of the SWRFs will not adversely impact waters of the United States. Approximately 805 linear feet of perennial stream, 14 linear feet of intermittent stream, 230 linear feet of ephemeral stream, 115 square feet of forested wetland, and 3,067 square feet of emergent wetland will be disturbed from the use of construction equipment, resulting in short-term, minor, adverse impacts. The impacts will occur within the delineated limits of disturbance, and permits will be obtained from the USACE and DDOE.

The project will create approximately 1,600 linear feet of stream and 3,182 square feet of wetlands. The project also will provide improvements to the functional values of the waterway by increasing hydraulic capacity for flood control and lowering stormwater velocities, which in turn will reduce downstream erosion. These improvements will stabilize and rehabilitate the surrounding environment, including associated aquatic habitat and biodiversity. This impact will be long-term and beneficial.

Floodplains. The proposed daylighting project will provide improvements to the functional values of the waterway by increasing hydraulic capacity for flood control and lowering stormwater velocities, which will reduce downstream erosion. Wider cross-sections of the stream are proposed that will reconnect the stream to the floodplain, thereby restoring its function and value. Based upon floodplain modeling conducted for both the existing conditions and as part of the design for this alternative, the stream restoration will accommodate a 100-year flood event. Because of this capacity, less flooding will occur in the surrounding residential neighborhood streets.

Water Quality. Soils will be disturbed during excavation and grading for the daylighting and stream restoration effort, and there will be potential for soil to enter waterways. Prior to the start of construction activities, a Clean Water Act Section 401 water quality certification will be obtained from DDOE. By utilizing BMPs, adverse impacts during construction will be reduced from moderate to minor.

The proposed project will improve water quality both within the unnamed tributary and in areas adjacent to the site that contribute surface runoff. Daylighting the unnamed tributary to Broad Branch will expose the currently piped stream to sunlight, air, soil, and vegetation. These features will provide natural filtering processes to remove pollutants from the stream. The stormwater retention facilities and

² A root wad is a mass of roots associated with a tree adjacent to or in a stream that provides refuge for fish or other aquatic life. Root wads are normally used for bank protection or to anchor large woody debris.

stormwater wetlands that are proposed within the unnamed tributary and on the Peruvian Embassy will slow stormwater flows to a non-erosive level, allowing the water to be filtered naturally. This will remove pollutants before the water is released into the stream channel, reducing sediment and nutrient loads in the unnamed tributary to Broad Branch and in downstream waterways.

Hydrology. The proposed daylighting project will provide improvements to the functional values of the waterway by increasing hydraulic capacity for flood control and lowering stormwater velocities, which will reduce downstream erosion. After the proposed improvements are installed, peak discharges at the 36th Street Bridge will remain unchanged. However, discharges to the newly constructed ponds upstream of Linnaean Avenue, NW will increase and peak discharges from the gullies located on the Peruvian Embassy land will decrease after the proposed regenerative step pools are installed, as they will provide additional storage and reduce downstream peak flows. By enhancing the stream's ability to slow the flow, and allowing a larger percentage of runoff to infiltrate the ground, the watershed's overall hydrology will be enhanced. This will result in long-term, beneficial impacts to hydrology.

Vegetation. Approximately 121 trees fall within the limits of disturbance for the restoration of the unnamed tributary to Broad Branch, 73 of which will be impacted from root disturbance or trimming and 48 of which will be removed for the construction of the stream restoration project. Most of these trees are located in the upper reach of the unnamed tributary A on National Park Service land. Trees planted on NPS land will be required to at minimum equal in circumference all trees that will be removed from NPS land for the project. Within the stormwater recharge areas, native plantings will be established. All proposed plantings will be reviewed and approved by NPS staff. All other disturbed and graded areas will be seeded and mulched. After construction, DDOE will monitor the project area to ensure that replacement vegetation becomes established and that invasive species do not encroach into the project area. The impacts will be long-term, minor, and adverse, as it will take some time for replacement trees to mature.

Wildlife. During construction, benthic habitats will be affected temporarily as stream diversions are put in place to conduct the in-stream work, a short-term, minor, adverse impact to wildlife. Approximately 48 trees will be removed that currently provide habitat for wildlife and avian species, especially Virginia opossum, eastern towhee, and wood thrush. These impacts to wildlife habitat are expected to be long-term, minor, and adverse. However, there is sufficient forested habitat adjacent to the project site to accommodate displaced wildlife.

Approximately 1,600 linear feet of streambed will be restored. Beneficial impacts for both aquatic and non-aquatic species are expected, due to the replacement of trees and vegetation and the creation of improved benthic habitat for fish, amphibians, and macroinvertebrates.

Degree of effect on public health or safety: The selected alternative will have a beneficial impact on health and safety by restoring the stream to accommodate the 100-year flood event, reducing flooding that occurs in the streets of the surrounding residential neighborhood.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, wetlands, prime farmlands, wild and scenic rivers, or ecologically critical areas: No prime farmlands, wild and scenic rivers, ecologically critical areas, sites sacred to American Indians, historic or cultural resources, or other significant ethnographic resources occur within or adjacent to the project area, and none will be impacted by the selected alternative. However, there are wetlands and floodplains within or adjacent to the project that will be impacted.

This project involves the daylighting of approximately 1,600 linear feet of stream and restoring the ecological functions of approximately 3,200 square feet of wetlands associated with the unnamed tributary. Temporary construction impacts to wetlands will occur, although they will be short-term and minor.

The NPS protects and preserves wetlands under Executive Order 11990; Director's Order #77-1, 2002; and NPS Procedural Manual #77-1: Wetland Protection, 2008. According to NPS DO #77-1: Wetland Protection, a statement of findings (SOF) is required when a proposed action is to occur within a wetland,

1 unless the action qualifies for an exemption. Rock Creek staff consulted with the NPS Water Resources
2 Division in September 2011. They determined that the proposed project qualifies for an exemption under
3 Section 4.2(h) of DO #77-1, as the proposed action is designed for the purpose of restoring the ecological
4 functions of a degraded stream, restoring aquatic habitat, and restoring wetlands. Therefore, a SOF will
5 not be written.

6 The proposed project area is located within the 100-year floodplain. The selected alternative will result in
7 beneficial impacts to floodplains by restoring the natural channel and reconnecting the stream to its
8 natural floodplain. According to NPS DO #77-2: Floodplain Management, a SOF is required when an
9 action will have an adverse effect on a floodplain. Rock Creek staff coordinated with the NPS Water
10 Resources Division in September 2011. They determined that a SOF would not be required because the
11 impacts to the floodplain would be beneficial, not adverse.

12 ***Degree to which effects on the quality of the human environment are likely to be highly controversial:***

13 No highly controversial effects on the quality of the human environment from the selected alternative
14 were identified during the preparation of the EA or by the public during the public comment period.

15 ***Degree to which the possible effects on the quality of the human environment are highly uncertain or***

16 ***involve unique or unknown risks:*** No highly uncertain, unique, or unknown risks on the quality of the
17 human environment from the selected alternative were identified during preparation of the EA or through
18 public comment.

19 ***Degree to which the action may establish a precedent for future actions with significant effects or***

20 ***represents a decision in principle about a future consideration:*** The selected alternative neither
21 establishes a NPS precedent for future actions with significant effects nor represents a decision in
22 principle about a future consideration.

23 ***Whether the action is related to other actions with individually insignificant but cumulatively***

24 ***significant impacts:*** Implementation of the selected alternative will have no significant cumulative
25 adverse impacts. As described in the EA, past, present, and future actions and projects within the project
26 area that could affect soils and topography, streams and wetlands, floodplains, water quality, hydrology,
27 vegetation, and wildlife include the rehabilitation of Peirce Mill, reconstruction of Oregon Avenue and
28 Broad Branch Road, the Klinge Valley Trail construction and stream restoration, and the installation of
29 regenerative stormwater conveyances (RSCs) at Bingham Run and Milkhouse Run.

30 ***Soils and Topography.*** Urbanization within the watershed has led to eroded soils and scoured topography
31 within streams. The rehabilitation of Peirce Mill, the reconstruction of Oregon Avenue and Broad Branch
32 Road, the Klinge Valley Trail construction and stream restoration, and the installation of RSCs at
33 Bingham Run and Milkhouse Run will disturb and potentially displace soils and the local topography,
34 creating short-term, minor, adverse impacts. After completion, these projects will result in long-term,
35 beneficial impacts to soils through the implementation of various BMPs. The impacts from the selected
36 alternative, when combined with the impacts of other past, present, and future actions, will result in an
37 overall net beneficial cumulative impact.

38 ***Streams and Wetlands.*** The rehabilitation of Peirce Mill disturbed wetland and stream areas. However,
39 the project will result in long-term, beneficial impacts to the watershed. The restoration of the Klinge
40 Valley stream and the installation of RSCs at Bingham Run and Milkhouse Run will have long-term,
41 beneficial impacts to streams and wetlands by helping to restore some of the values and functions of the
42 wetlands lost through erosion. The reconstruction of Oregon Avenue and Broad Branch Road also will
43 contribute beneficial impacts, as BMPs will be utilized. These projects, when combined with the selected
44 alternative, will have beneficial cumulative impacts to streams and wetlands.

45 ***Floodplains.*** The rehabilitation of the stream in Klinge Valley and the installation of RSCs will have
46 beneficial impacts to floodplains. The Peirce Mill rehabilitation resulted in both short-term and long-
47 term, minor, adverse impacts and long-term, beneficial impacts to floodplains. The reconstruction of
48 Oregon Avenue and Broad Branch Road will have minor, short-term, adverse impacts and long-term,

beneficial impacts to local floodplains. The selected alternative will contribute additional beneficial impacts to the overall beneficial cumulative impacts.

Water Quality. The rehabilitation of the stream in Klinge Valley, the reconstruction of Oregon Avenue and Broad Branch Road, and the installation of RSCs will affect water quality during construction. However, these projects will ultimately result in beneficial impacts to water quality in the watershed through stabilized streams and improved stormwater management. The selected alternative will contribute to the overall beneficial cumulative impacts to water quality in the watershed.

Hydrology. The reconstruction of Oregon Avenue and Broad Branch Road, the restoration of the Klinge Valley Trail and stream, and the installation of RSCs at Bingham Run and Milkhouse Run will have beneficial impacts to hydrology. The urbanized nature of the watershed will continue to result in long-term, moderate, adverse impacts on the hydrology of the watershed. The impacts from the selected alternative, when combined with the impacts of other past, present, and future actions, will result in a net adverse cumulative impact due to the urbanization within the watershed.

Vegetation. The rehabilitation of Peirce Mill, the reconstruction of Oregon Avenue and Broad Branch Road, the Klinge Valley Trail construction and stream restoration, and the installation of RSCs at Bingham Run and Milkhouse Run potentially will disturb vegetative areas, resulting in the loss of trees, shrubs, and herbaceous vegetation. These projects will create long-term, minor, adverse impacts. However, BMPs and the replanting of native vegetation where applicable will create beneficial impacts. The impacts from Alternative 2, when combined with the impacts of the other past, present, and future actions, will add to the overall beneficial and adverse cumulative impacts.

Wildlife. The rehabilitation of the stream in Klinge Valley, the reconstruction of Oregon Avenue and Broad Branch Road, and the installation of RSCs will have a beneficial impact to wildlife. The selected alternative will contribute additional beneficial impacts to the overall beneficial cumulative impacts.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources: The selected alternative will not cause loss or destruction of significant scientific, cultural, or historic resources. There are no cultural landscapes, historic structures/districts, highways, or objects within the project area. A geoarcheological evaluation of the proposed project area was conducted in July 2011. The results of the geoarcheological evaluation indicated that there is no potential for the presence of intact archeological resources within the project area. On April 19, 2011, DDOE initiated consultation with the DC SHPO under Section 106 of the NHPA. In an e-mail dated June 2, 2011, the DC SHPO stated that this undertaking would have “no adverse effect” upon the historic built environment (see attached).

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat: In accordance with Section 7 of the Endangered Species Act of 1973, NPS sent a letter to solicit comments from the U.S. Fish and Wildlife Service (USFWS) regarding potential occurrences of federally listed species within the project area that could be adversely impacted by the proposed alternatives. The USFWS responded on September 28, 2011, stating that there were no documented occurrences of any federally listed species within the project area. As a result, no adverse affects to any federally listed species will occur from the selected alternative.

Whether the action threatens a violation of federal, state, or local environmental protection law: The selected alternative violates no federal, state, or local environmental protection laws.

PUBLIC INVOLVEMENT

On April 19, 2011, DDOE sent scoping letters requesting comment on the proposed project. Recipients included ANCs 3G/3F, Rock Creek Community Garden, Friends of Rock Creek’s Environment (now the Rock Creek Conservancy), Chevy Chase Citizens Association, and the Peruvian Embassy. In addition, DDOE sent scoping letters to DDOT, DC Water, the District Office of Planning, the DC Historic Preservation Office, National Capital Planning Commission (NCPC), the Advisory Council on Historic

1 Preservation, and the Commission on Fine Arts. In June 2011, the NPS also sent scoping letters to these
2 parties.

3 In its May 13, 2011 response letter, DC Water commented that DDOE and NPS should coordinate with
4 DC Water during the design phase to mitigate impacts to existing DC Water utilities, mitigate
5 downstream impacts, and determine responsibility for stream maintenance after the project is complete.
6 In a letter dated May 18, 2011, NCPC stated that stream daylighting is an important initiative supported
7 by the NCPC and was included within their 2004 Comprehensive Plan. NCPC further requested that
8 cultural resources, water resources, soils, and vegetation be assessed within the EA. After this FONSI is
9 executed, the NPS and DDOE will request NCPC to review the project (including all compliance
10 documents), per NCPC rules.

11 The EA was made available for public review and comment on March 5, 2012. It was announced via a
12 notice of availability letter that was sent out to a mailing list of 13 stakeholders, which included a printed
13 copy of the EA. The EA was also placed on the NPS' PEPC website.

14 The comment period concluded on April 5, 2012, with DDOE/NPS receiving four sets of comments.
15 These comments were from two individuals, the Rock Creek Conservancy, and the U.S. Environmental
16 Protection Agency (EPA). Comments from the individuals and Rock Creek Conservancy were in favor of
17 the project. Comments from the U.S. EPA asked for clarification on several items, particularly: (1)
18 whether and why the design process was prematurely advanced during the compliance process, creating
19 an appearance of predetermined outcomes; (2) whether the project would use waters of the United States
20 to treat stormwater; and (3) whether and the extent to which the project should include monitoring and
21 maintenance of the project area using adaptive management. None of the comments received resulted in
22 any changes to the overall impact analysis or the selected alternative that was presented in the EA. The
23 comments in their entirety along with responses are attached.

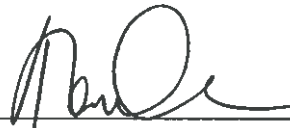
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25 As the Peruvian Embassy has been involved in review and revision of project designs throughout the
26 compliance process, the proposed work on the lands of the Peruvian Ambassador's residence reflects the
27 preferences of the Embassy. On June 18, 2009, DDOE staff met with the staff from the Peruvian
28 Embassy to conduct a site visit of the project area and the land owned by the Peruvian Embassy, and to
29 document any concerns they may have regarding the proposed project. During this site visit, DDOE staff
30 answered questions on how the project would impact Peruvian Embassy property. DDOE and the
31 Peruvian Embassy are working on a Right of Entry Agreement that will provide DDOE's contractors
32 access to the property of Peruvian Ambassador's Residence. The Right of Entry Agreement will be
33 finalized and signed before work begins at that location.
34

CONCLUSION

The NPS has selected Alternative 2 for implementation. Based on impacts described in the EA for the project and with guidance from NPS *Management Policies 2006*, natural and cultural resources information, professional judgment, and considering agency and public comments, the NPS has determined that the impacts that will result from the selected alternative will not impair any park resources and values (see attached impairment statement). The selected alternative does not constitute an action that normally requires preparation of an environmental impact statement. The selected alternative will not have a significant impact on the human environment. Negative environmental impacts that could occur are minor to moderate in intensity. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the selected alternative will not violate any federal, state, or local environmental protection law.

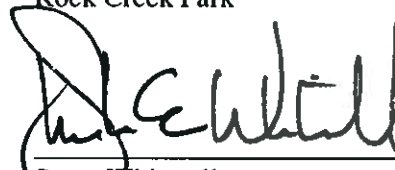
Based on the foregoing, an EIS is not required for this action and therefore will not be prepared. This is a Finding of No Significant Impact.

Recommended:


Tara Morrison
Superintendent,
Rock Creek Park

June 19, 2012
Date

Approved:


Steve Whitesell
Regional Director
National Capital Region

6.20.12
Date

1 IMPAIRMENT OF PARK RESOURCES OR VALUES

2 In addition to reviewing the list of criteria for significant impacts, the NPS has determined that
3 implementing the NPS selected alternative will not constitute an impairment of park resources or values.
4 This conclusion is based on a thorough analysis of the impacts described in the EA, agency and public
5 comments received, and the professional judgment of the decision-makers in accordance with NPS
6 *Management Policies 2006*. As described in the EA, implementation of the NPS selected alternative will
7 not result in impairment of Rock Creek Park resources or values whose conservation is (1) necessary to
8 fulfill specific purposes identified in the park's establishing legislation, (2) key to the natural or cultural
9 integrity of the park or to opportunities for enjoyment of the park, or (3) identified in the park's
10 management plan or other relevant NPS planning documents as being of significance.

11 While the selected alternative will result in beneficial and adverse impacts on some of the park's natural
12 resources, none of these resources will be impaired. Impacts will be mitigated through requirements
13 listed in the EA and this Finding of No Significant Impact.

14 *Soils and Topography.* The Broad Branch Stream Restoration Project is located within the upland section
15 of the Piedmont physiographic province. The topography within the project area consists of gently
16 rolling hills with two steep areas. These steep areas contain narrow erosion gullies that are on Peruvian
17 Embassy land. The upstream elevation of the project area is approximately 228 feet above sea level and
18 the downstream elevation is approximately 192 feet above sea level. The soils in the project area are
19 disturbed, due to the placement of fill material. The unnamed tributary to Broad Branch was piped, and
20 its natural channel filled, in 1937.

21 Under the selected alternative, soils and topography will not be impaired. Although healthy soils and
22 topography are necessary to fulfill the purposes for which the park was established, key to opportunities
23 for enjoyment within the park, and/or identified as significant resources in the park's planning documents,
24 the selected alternative does not constitute an impairment because it does not cause major, adverse
25 impacts to these resources. Long-term beneficial impacts will occur due to the stabilization of the stream
26 channel and the mitigation of erosion and scouring of streambanks. There will be adverse impacts during
27 construction, but these are minor and short-term.

28 *Streams and Wetlands.* The unnamed tributary to Broad Branch flows into Broad Branch, which is a
29 tributary of Rock Creek. The stream and wetlands in the project area were identified during a formal
30 wetland delineation in June and November 2009. The wetlands and waters of the U.S. were delineated
31 according to the 1987 Army Corps of Engineers Wetlands Delineation Manual and represent those areas
32 that are within the regulatory jurisdiction of the USACE and/or DDOE. Wetlands and streams in the
33 project area were also classified according to the Cowardin System, per NPS rules.

34 Four wetlands totaling 0.10 acre (4,477 square feet) and eight waters of the U.S. totaling 1,714 linear feet
35 (12,894 square feet) exist within the project area. In addition to surface waters and wetlands found within
36 the project area, approximately 1,400 linear feet of the unnamed tributary to Broad Branch has been piped
37 through the project area since 1937.

38 Under the selected alternative, streams and wetlands will not be impaired. Although streams and
39 wetlands are necessary to fulfill the purposes for which the park was established, key to opportunities for
40 enjoyment within the park, and/or identified as significant resources in the park's planning documents, the
41 selected alternative does not constitute an impairment because it does not cause a major, adverse impacts
42 to these resources. The selected alternative will have beneficial impacts to streams and wetlands by
43 restoring the functions and values that are currently diminished due to erosion and sedimentation. There
44 will be adverse impacts during construction, but these are minor and short-term.

45 *Floodplains.* A detailed engineering analysis to predict the amount of stormwater runoff that will flow
46 through the unnamed tributary to Broad Branch was completed using TR-55 and TR-20 hydrologic
47 models to determine one-, two-, five-, 10- and 100-year discharges. HEC-RAS, a hydraulic modeling
48 program, was utilized to determine the effect these flows have on existing topography and stream flow, as
49 well as to delineate the 100-year floodplain of this stream.

Typical functions and values of floodplains consist of flood flow alteration, sediment stabilization, and toxicant retention. Healthy floodplains create ecological biodiversity and provide habitat for plant and animal communities. The unnamed tributary to Broad Branch currently has diminished floodplain function due to uncontrolled stormwater flows in the project area. The tributary's deepened stream channel erodes the streambed further away from its banks during storm events, and further disconnects the stream from its natural floodplain.

Under the selected alternative, the floodplains at the unnamed tributary to Broad Branch will not be impaired. Although floodplains are necessary to fulfill the purposes for which the park was established, key to opportunities for enjoyment within the park, and/or identified as significant resources in the park's planning documents, the selected alternative does not constitute an impairment because it does not cause a major, adverse impacts to these resources. Beneficial impacts to floodplains will occur by restoring the natural channel and reconnecting the stream to its natural floodplain. This will create a wider floodplain that will dissipate stormwater flow during flood events. The selected alternative will create riparian habitat and enhance floodplain connectivity. There will be adverse impacts from construction activities occurring within the floodplains, but these are minor and short-term.

Water Quality. Currently, the unnamed tributary to Broad Branch is being degraded by storm flows and non-point source pollution from developed areas in the project area. This has resulted in stream bank erosion, incised channels, and reduced water quality from sedimentation. In addition, because much of the unnamed tributary to Broad Branch is piped underground, it is not exposed to air, sunlight, soil, and vegetation, all of which would normally help to remove pollutants (ODEQ, 2011). Exposure to sunlight, air, and soil allows growth of aquatic and riparian vegetation that can help in water quality improvement through uptake of organic and inorganic pollutants.

Under the selected alternative, water quality in the unnamed tributary to Broad Branch will not be impaired. Although water quality is necessary to fulfill the purposes for which the park was established, key to opportunities for enjoyment within the park, and/or identified as significant resources in the park's planning documents, the selected alternative does not constitute impairment because it does not cause a major, adverse impacts to this resource. The selected alternative will expose the currently piped stream to sunlight, air, soil, and vegetation. The stormwater retention facilities and stormwater wetlands that are proposed will slow stormwater flows to a non-erosive state, allowing the water to be filtered naturally. This will remove pollutants before the water is released into the stream channel, reducing sediment and nutrient loads in the unnamed tributary to Broad Branch and to downstream waterways. All of these measures will result in beneficial impacts to water quality. There will be adverse impacts from construction activities, but these are minor and short-term.

Hydrology. The unnamed tributary – Section A is an aboveground, free-flowing stream that appears to be fed by overland surface runoff and groundwater upstream of the 36th Street Bridge. The tributary disappears at the 36th Street Bridge and does not reemerge downstream of the bridge. A two-foot by three-foot reinforced concrete box culvert captures the stream and conveys it to a 7.5 foot by 10-foot reinforced concrete box culvert within the Broad Branch right-of-way that was constructed in 1927. The stream is conveyed to a reinforced concrete box outfall on Broad Branch Road, NW near 27th Street, NW.

Unnamed tributary – Section B is a free flowing stream that begins approximately 500 feet upstream of Broad Branch Road, NW (just east of Linnaean Avenue, NW), where groundwater seeps provide base flow to the stream channel. It is ultimately collected by the 36-inch reinforced concrete box culvert. This flow combines with the upstream flow already in the box culvert via a 36-inch reinforced concrete pipe and is discharged at the outfall on Broad Branch Road, NW near 27th Street, NW. Flow at the outfall continues downstream to Rock Creek. Unnamed tributary – Section B is extremely shallow and has sluggish flow, and the channel is prone to heavy sediment deposition from two steep, incised gullies located on land owned by the Peruvian Embassy. The gullies carry no measureable base flow, but during larger storm events they convey large amounts of stormwater and sediment to the stream channel.

The existing hydrology of the Broad Branch subwatershed includes fast stream flow during storm events that is disruptive to aquatic habitat and water quality. Water often floods surrounding streets in the

residential neighborhood during large storm events. TR-20 and TR-55 software packages were used to estimate peak discharges for the one-year, two-year, five-year, 10-year, and 100-year 24-hour storms. Peak discharges for the unnamed tributary – Section A ranged from 4.5 cubic feet per second (cfs) for the one-year storm event to 18.2 cfs for the 100-year storm event. Peak discharges for the unnamed tributary – Section B range from 16.9 cfs for the one-year storm event to 233.7 cfs for the 100-year storm event.

Under the selected alternative, hydrology in the unnamed tributary to Broad Branch will not be impaired. Although hydrology is necessary to fulfill the purposes for which the park was established, key to opportunities for enjoyment within the park, and/or identified as significant resources in the park's planning documents, the selected alternative does not constitute an impairment because it does not cause a major, adverse impact to this resource. Beneficial impacts to hydrology will occur as a result of implementing the selected alternative by restoring functions and values that are currently diminished due to erosion and sedimentation. Additional storage from seepage ponds and step pools will dissipate energy from stormwater flows. By enhancing the stream's ability to slow the flow, and allowing a larger percentage of runoff to infiltrate the ground, the overall hydrology within the watershed will be enhanced. There will be adverse impacts from construction activities, but these are minor and short-term.

Vegetation. A detailed tree survey of the proposed project area was completed by a certified arborist on April 26, 2011. The trees and other vegetation within the Broad Branch Stream Restoration project area vary along stream reaches. Above 36th Street, NW, where unnamed tributary to Broad Branch is exposed (Section A); the vegetation consists of early- to mid-successional forest. Below 36th Street, NW, there is a stand of mature forest where the stream has been piped and diverted from its original channel. Downstream of Linnean Avenue, NW, also within the piped reach, the project area consists of an open, grassy field. In the downstream reach, adjacent to where the unnamed tributary to Broad Branch resurfaces (Section B), the forest is early successional.

Under the selected alternative, vegetation will not be impaired. Although vegetation is necessary to fulfill the purposes for which the park was established, key to opportunities for enjoyment within the park, and/or identified as significant resources in the park's planning documents, the selected alternative does not constitute an impairment because it does not cause a major, adverse impact to this resource. With the selected alternative, the right and left banks of the newly constructed stream will be stabilized with live stakes and the riparian vegetative habitat restored, which will help reduce the erosion that is occurring. This will create beneficial impacts. There will be adverse impacts from construction activities and the removal of trees, but these are minor and short-term.

Wildlife. The project area contains wildlife and wildlife habitat. Birds observed in the study area during the wetland delineation in June 2009 and November 2009 are those associated with urbanized areas. They include the gray catbird (*Dumetella carolinensis*), northern mockingbird (*Mimus polyglottos*), blue jay (*Cyanocitta cristata*), and northern cardinal (*Cardinalis cardinalis*). Also observed were the brown thrasher (*Toxostoma rufum*), downy woodpecker (*Picoides pubescens*), Carolina chickadee (*Poecile carolinensis*), black-capped chickadee (*Poecile atricapillus*), and tufted titmouse (*Baeolophus bicolor*). Other species observed at the site during the wetland delineation include red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), black rat snake (*Elaphe obsoleta*), and gray squirrel (*Sciurus carolinensis*). Streams similar to the one found at the project site support a wide variety of aquatic species, such as the northern towline salamander (*Eurycea bislineata*) and macroinvertebrates such as chironomids, crayfish, and caddisflies. No aquatic species were found in the project area during the wetland delineation.

On May 29, 2011, DDOE biologists sampled the site in response to an inquiry letter about species of concern at the site. Two avian species of greatest conservation need (SGCN), the eastern towhee (*Pipilo erythrophthalmus*) and the wood thrush (*Hylocichla mustelina*), and one mammalian species, Virginia opossum (*Didelphis virginiana*), were identified during that survey.

Under the selected alternative, wildlife will not be impaired. Although wildlife is necessary to fulfill the purposes for which the park was established, key to opportunities for enjoyment within the park, and/or identified as significant resources in the park's planning documents, the selected alternative does not constitute an impairment because it does not cause major, adverse impacts to these resources. The

1 selected alternative will restore approximately 1,600 linear feet of stream, creating beneficial impacts for
2 both aquatic and non-aquatic species due to the replacement of trees and vegetation and the creation of
3 improved benthic habitat for fish, amphibians, and macroinvertebrates. There will be adverse impacts
4 from construction activities, but these are minor and will only be short-term.

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NPS Response to Comments

COMITTER	COMMENT	RESPONSE
EPA	Alternative Analysis – EPA is concerned that there were alternatives that were not pursued within the alternatives analysis. EPA understands that the design process for this project is near completion. For future projects, additional alternatives should be discussed earlier in the process.	Comment noted.
EPA	Alternative Analysis – During our November 22, 2011 onsite field review it was discussed that, the proposed stream daylighting project would utilize a natural channel design and would incorporate regenerative stormwater conveyance structures within two (2) gullies located on the Peruvian Embassy property. The EA clearly indicates that sand seepage wetlands and step pool conveyance structures are used to store and dissipate energy from storm flows. The EPA discourages the use of waters of the United States to treat stormwater runoff.	DDOE presented the scope of this project to EPA during the November 22 meeting and other calls. There are two regenerative stormwater conveyance structures planned to address erosion from two (2) gullies located on the Peruvian Embassy property. The daylighting of main stem stream is not for the purpose of treating stormwater. All new water going into the stream system from stormwater sources during storm events rated below the 100-year storm is treated through bioretention or other treatment before it flows into the stream system. The sand seepage wetlands are proposed not to treat stormwater but to create additional habitat features and to supplement the stream's baseflow. These wetlands are needed because during analysis of the site it was determined that the site's soils were very sandy. Without detaining waters through such a system, it is likely that the stream will run dry during certain periods of the year. Details of this analysis can be found in Appendix A of the EA.

COMMENTS	COMMENT	RESPONSE
EPA	Alternative Analysis – It may be useful to supply information on the intended flow into the system and the design benefits of the preferred alternative.	<p>During dry conditions, flow into the system is a combination of base flow and treated storm flows. The goal of the preferred alternative is to capture as much base flow and small, frequent flows of stormwater as possible, while limiting the introduction of large stormwater flows. Base flow is important as it allows the establishment of beneficial ecosystems. One goal of the design is to minimize the likelihood of the stream going dry during prolonged droughts. Stormwater from smaller, frequent rain events will experience reduced nutrient and sediment concentrations when pre-treated in the preferred design before combining with base flow.</p> <p>High intensity, less frequent storm flows are erosive and require the design to be built larger and with heavier material to withstand the forces from the flowing water. The preferred design limits the entry of large stormwater flows through the use of flow splitter manhole and stormwater recharge areas. The flow splitter specifically adds base flows to the stream, but keeps high flow rates within the storm sewer system. Stormwater recharge areas add to available base flow by allowing treated stormwater to more effectively enter the groundwater.</p>
EPA	Alternative Analysis – There is also concern that the Alternative Analysis does not discuss any upland Best Management Practices (“BMPs”) that were analyzed for the alternatives discussed within the EA. EPA suggests that information on any proposed uplands BMP’s be provided in the final document.	<p>The intention of this project is to daylight the existing stream. To the extent that existing stormwater is being added to the stream, it is being treated through proposed Best Management Practices (e.g., bioretention cells, grass swales, step pool systems). These practices were added to either address existing erosion issues to maintain water quality in the newly daylighted stream, or to create groundwater recharge to provide additional base flow to the stream.</p> <p>We have proposed the use of Regenerative Stormwater Conveyances to address the existing erosion issues. Where we propose to use stormwater to increase groundwater recharge, all stormwater is first being treated through Best Management Practices (e.g., (e.g., bioretention cells, grass swales, step pool systems).</p>
EPA	Soils and Topography – The EA discuss [sic] the soils within the project area consists [sic] of fill material. Please clarify if any testing was completed on the soils proposed to be impacted to determine if there is any contamination. Fill material from the proposed project should be disposed of in an approved upland disposal site.	<p>Test pits and soil borings were performed throughout the site in order to determine soil type and properties. However, no testing for contamination was performed. Existing soils not used on site will be disposed of at an approved site.</p>

COMMENTER	COMMENT	RESPONSE
EPA	Soils and Topography – The Summary of Environmental Consequences (Table 1) indicates that the soils and topography will be stabilized by the construction of the proposed system. EPA has concerns that using sand material may cause degradation due to possible system failures. Please discuss what type of downstream impacts would occur if the sand seepage wetlands or step pool conveyance system failed releasing a slug of fill material into the restored channel.	<p>Currently the mainstream flow is piped and where it emerges, it is combined with other stream and stormwater flows, causing downstream erosion and degradation of in-stream habitat. This project proposes to bring the piped stream to the surface, where it will have a sufficient floodplain to dissipate storm flow energies; reduce peak flows downstream by treating and infiltrating stormwater; and stabilize actively eroding gullies by installing step pool conveyance systems that are designed to reduce erosion through the installation of pool and weir systems.</p> <p>The project as designed will reduce downstream peak flows and halt erosion problems within the project area. The stream to be daylighted has very low volume and velocity, even during storm events, so we do not expect failure in this system. Based on experience with dozens of installed regenerative stormwater conveyances, DDOE believes that, properly designed and constructed, they are stable systems.</p>
EPA	Park Operation and Management – EPA is concerned due to the stormwater influence within the project area and the use of sand seepage wetlands and step pool conveyance structures that maintenance may be required. Please discuss who will be responsible for any maintenance issues with the proposed project. Please also discuss what type of Adaptive Management Plan will be in place is [sic] case the project does not meet its performance standards or there is a significant failure.	<p>Although MOUs with the existing landholders have not yet been finalized, we anticipate that DDOE will take on the maintenance of the system for the first five years after installation. During that time, DDOE will pay a contractor to inspect and maintain the site to ensure its long-term stability.</p> <p>At the end of the five-year period maintenance of the areas will revert to the property owner. We anticipate that the project will be stable after five years and that no additional maintenance will be needed after that time.</p>
EPA	Jurisdiction – The EA indicates that the streams and wetlands within the project area were delineated in June and November of 2009, but does not indicate that a Jurisdictional Determination was submitted and approved by the United States Army Corps of Engineers. Please indicate if an approved Jurisdictional Determination (“JD”) or Pre-JE was completed for the project area.	No formal Jurisdictional Determination has occurred. Based on discussions with USACE, a site visit and jurisdictional analyses will occur simultaneously, at the time of permit submittal.

COMMENTS	COMMENT	RESPONSE
EPA	Jurisdiction – Water Resource and Wetlands Observed within the Project Area (Table 3) indicates[sic] if a stream is perennial, intermittent, and/or ephemeral and what classification of wetlands [sic]. Please indicate if the classifications were established from an approved JD. If the classification [sic] were not established by a JD, please discuss how the classifications were determined.	The classifications were established not from an approved JD, but based on current site conditions at the time of field visits. Several visits to the site were conducted in wet and dry conditions; and these determinations were made based on current USACE wetland delineation guidance and Cowardin classification standards.
EPA	Jurisdiction – Please provide an explanation of how Waterway 5 (WL05), an upper perennial stream flows into Waterway 4 (WL04) which is classified as an ephemeral drainage channel. Please also indicate how Waterway 5 flows to Waterway 4 that flows into Waterway 3, which is classified as an intermittent stream. Please clarify this within the final document.	Waterway 5 (WL05) flows into a 42" pipe at Linnean Avenue and is piped through the project area. It does not flow into Waterway 4 (WL04). This is shown in Figure 2 and in each of the maps of the proposed alternatives.
EPA	Monitoring – Please discuss what type of pre-construction monitoring will be completed to help establish performance standards and success criteria.	We do not have plans to perform pre-construction monitoring of the project. Currently there is no flow in much of the project area because the stream is piped.
EPA	Monitoring – Please discuss what type of post-construction monitoring will be accomplished to show the success of the proposed stream restoration project. Please also indicate how long the post-construction monitoring will be implemented.	We believe that exposing a piped stream to natural processes in a daylighted waterway is an inherent improvement. Due to funding constraints, we do not currently have plans to perform significant monitoring of the project beyond requirements articulated in the forthcoming Army Corps Nationwide Permit. Past permits have requested five years of monitoring for stability and our intent is to perform this work if requested.

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1 Copy of Correspondence from DC State Historic Preservation Office to National Park Service May 16, 2012

GOVERNMENT OF THE DISTRICT OF COLUMBIA
STATE HISTORIC PRESERVATION OFFICE



DC STATE HISTORIC PRESERVATION OFFICE
SECTION 106 REVIEW FORM

TO: Steve Saari, DDOE

PROJECT NAME/DESCRIPTION: Broad Branch Tributary Stream Restoration EA

PROJECT ADDRESS/LOCATION DESCRIPTION: Unnamed tributary stream of Broad Branch between
36 St. NW, Harrison St., and Linnean Ave.

DC SHPO PROJECT NUMBER: 11-196

The DC State Historic Preservation Office (DC SHPO) has reviewed the above-referenced federal undertaking(s) in accordance with Section 106 of the National Historic Preservation Act and has determined that:

☐ This project will have no effect on historic properties. No further DC SHPO review or comment will be necessary.

☐ There are no historic properties that will be affected by this project. No further DC SHPO review or comment will be necessary.

☒ This project will have no adverse effect on historic properties. No further DC SHPO review or comment will be necessary.

☐ This project will have no adverse effect on historic properties conditioned upon fulfillment of the measures stipulated below.

☐ Other Comments / Additional Comments (see below):

An archaeological investigation consisting of geoarchaeological coring was conducted for the undertaking (DC SHPO Archaeological Report # 497). Intact archaeological resources were not present within the project area. Therefore this project will not adversely affect archaeological resources and no additional archaeological investigations are required. The NPS Regional Archaeologist, Dr. Stephen Potter, concurred with this finding via email 7/21/01. Should unanticipated archaeological discoveries be encountered during any activity associated with this undertaking please contact Dr. Troccoli at 202-442-8836 or ruth.troccoli@dc.gov.

BY: _____
Ruth Troccoli, Ph.D.
State Historic Preservation Office Archaeologist

DATE: 16 May 2012

1100 4th Street, SW, Suite 650-E, Washington, DC 20024
202-442-7600, fax 202-442-7638