FINDING OF NO SIGNIFICANT IMPACT

Regenerative Stormwater Conveyances at Bingham Run and Milkhouse Run
Rock Creek Park
Washington, D.C.

The National Park Service (NPS), in partnership with the District Department of the Environment (DDOE), proposes to install regenerative stormwater conveyances (RSCs) to stabilize and rehabilitate two streams within Rock Creek Park: (1) Bingham Run, a tributary of Rock Creek that begins at Oregon Avenue, NW, west of the U.S. Park Police Horse Stables and (2) Milkhouse Run, a tributary of Rock Creek that begins as two forks along Oregon Avenue, NW, southwest of the U.S. Park Police Horse Stables before merging into one tributary. The base flow in Milkhouse Run is negligible, averaging only 0.002 cubic feet per second (cfs). There is no base flow in Bingham Run.

The RSCs utilize a series of shallow aquatic pools, riffle/weir/grade controls, native vegetation, and an underlying sand channel to absorb and control the flow of stormwater. These systems are designed to convey flows associated with extreme floods, such as a 100-year flood event, in a manner that minimizes erosion. There are many potential benefits of RSCs for eroded streams. These benefits include providing a base-flow channel, trapping sediment and nutrients, recharging groundwater beneath stream beds, and creating wildlife habitat.

The project is needed because a significant increase in impervious surfaces in the watershed over the years has produced powerful, high-volume stormwater flows in these tributaries. These flows have damaged the tributaries through erosion and sedimentation, destabilizing the surrounding environment (including trees), reducing infiltration of water into underlying aquifers, and compromising wildlife habitat. Without intervention, stormwater will continue to degrade these resources.

In accordance with the National Environmental Policy Act of 1969 (NEPA), the Council of Environmental Quality (CEQ) regulations (40 CFR 1500-1508), and NPS Director's Order #12, the NPS prepared an Environmental Assessment (EA)/Assessment of Effect (AoE), which was released for agency and public review and comment on May 18, 2011. This document is intended to fulfill requirements mandated by NEPA, Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the procedures of the Advisory Council on Historic Preservation (ACHP).

SELECTED ALTERNATIVE

The EA/AoE examines two alternatives: Alternative A – No Action and Alternative B – Installation of RSCs. The alternative selected by the NPS for implementation is Alternative B, a description of which is found on pages 15 through 17 of the EA/AoE. Under Alternative B, RSCs would be installed at Milkhouse Run and Bingham Run.

At Bingham Run, work would occur on approximately 600 linear feet and 6,000 square feet of waterway. Old Bingham Road would be used to access the worksite and to store construction materials. Materials would be brought to and removed from the worksite each day so that only the current day's materials would be stored on Old Bingham Road. The limits of disturbance (LOD) for this site would extend the length of the proposed work area within Bingham Run, closely hugging the tributary on the west side and including Old Bingham Road on the east side.

At Milkhouse Run, work would occur on approximately 2,300 linear feet and 23,000 square feet of waterway, including two forks – the North Fork and South Fork – that merge and continue as one

waterway. Access to the site will be via a 15-foot wide naturally occurring corridor identified by NPS and DDOE that can accommodate construction vehicles while minimizing impacts to vegetation. A thick layer of mulch will be placed on the access path to minimize soil compaction. The LOD for this site will closely hug the access path and tributaries. Construction materials will be stored in a small area next to the North Fork, and materials will be brought to and removed from the worksite each day so that only the current day's materials are stored there.

Each RSC will be installed in the same way. First a pipe will be placed on the bed of the tributary to divert and protect water flow during construction. Using an excavator, the contractor will then fill the tributary with a thick layer of sand, ensuring that the excavator drives only on the sand, not on the streambed. Next, working within each tributary from the bottom of the project area to the top, the contractor will add layers of soil on top of the sand and then, on the surface layer, use stones and felled trees to created aquatic step pools. The pools will sit just below the top edge of the stream banks. Finally, the contractor will re-vegetate areas within the LOD with native plant species approved by the NPS. When the project is complete, the pools will manage water in a non-erosive manner, while preventing it from overflowing the banks. The pools will be designed to manage water for up to a 100-year storm event.

Most of the project will involve minimal grading and/or excavation. However, at two locations along Milkhouse Run – the beginning of the North Fork and the end of the South Fork (near the confluence of the forks) – some grading and excavation will occur to shift each tributary approximately 10 to 20 feet from the center of the existing channel to improve the hydrologic performance of the RSC.

OTHER ALTERNATIVES CONSIDERED

In addition to evaluating the Selected Alternative, the EA/AoE considered the No-Action Alternative (Alternative A). Under Alternative A, stormwater from the upper watershed would continue to damage Bingham Run and Milkhouse Run. During precipitation events, water runoff from impervious surfaces outside the park would continue to discharge into these waterways, causing powerful high-volume stormwater surges. Unequipped to handle the energy of these surges, Bingham Run and Milkhouse Run would continue to experience soil erosion, harming surrounding vegetation and causing sediment deposition downstream, negatively impacting aquatic species.

Other alternatives were considered and dismissed. Hard engineering alternatives such as lining the existing channel with concrete piping, gabion baskets, rip-rap, or similar hard armoring were dismissed as inconsistent with NPS policies, project goals, and because they would have adverse impacts on the natural environment. Furthermore, erosion would be exacerbated wherever these hard armoring approaches ended and water discharged into unprotected sections of the tributaries.

Another stream restoration technique considered but dismissed was the natural channel approach. This approach reshapes the stream channel using natural materials and some grading to meet existing flow conditions and convey water in a non-erosive way without significant infiltration or treatment. The natural stream channel technique can be used in different ways depending on site conditions. In general, there are two approaches that define the ends of a spectrum of natural stream channel design:

1) When space exists, grade back the banks of the stream to reduce erosive forces and reconnect the stream with its existing floodplain (if present); and

2) When space is limited, use structures, natural materials, and plantings to keep water flow in the center of the channel to reduce erosive forces.

The natural stream channel approaches were dismissed for several reasons. The approach described in 1) above would require significant grading and the removal of many trees, an unacceptable adverse impact on the existing forest ecosystem. Additionally, although this approach would dissipate some stream energy, far less stormwater would be able to infiltrate the aquifer than with RSCs.

The impact on the stream and surrounding forest ecosystem of this natural stream channel approach described in 2) above would have similar impacts on the stream and surrounding forest ecosystem to that

of the proposed project. However, this approach would not dissipate significant amounts of energy from rushing stormwater, nor would it replenish underlying aquifers with infiltrated water or protect downstream segments of the tributaries from damage.

Finally, the NPS and DDOE considered the prospect of treating stormwater in the upper watershed, before it reaches Bingham Run and Milkhouse Run. Stormwater from impervious surfaces such as roofs, driveways and roads can sometimes be treated at or near its source with bioretention ponds or swales, shade trees, rain barrels, and pervious surfaces. However, it was determined to be unlikely that homeowners could be convinced to install and use these controls voluntarily in large enough numbers to curtail the large amounts of stormwater that enters Bingham Run and Milkhouse Run. Installation of such measures would be expensive and would not be effective in ameliorating the adverse impacts of this excessive stormwater runoff without substantial participation. In addition, during the period while homeowners were implementing the stormwater controls over the course of several years, these tributaries would continue to degrade.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The NPS is required to identify the Environmentally Preferable Alternative in its NEPA documents. The NPS, in accordance with DOI and NPS policies and guidance and CEQ's *NEPA's Forty Most Asked Questions*, defines the Environmentally Preferable Option 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/AoE, the NPS identified the Selected Alternative, Alternative B – Installation of RSCs – as the Environmentally Preferable Alternative. Alternative A would lead to further degradation of Milkhouse Run and Bingham Run, including erosion that jeopardizes large trees and possibly cultural resources such as Old Bingham Road. However, the Selected Alternative would use natural materials to prevent erosion, provide a base-flow channel, trap sediment and nutrients, recharge groundwater beneath stream beds, and create wildlife habitat. Consequently, the Selected Alternative best protects, preserves, and enhances historic, cultural, and natural resources.

MITIGATION MEASURES

The NPS has made environmental commitments in support of the Selected Alternative. These commitments are contained in the EA/AoE and include measures to avoid potential impacts, measures to reduce impacts, measures to mitigate impacts, and measures to enhance aspects of the project in order to produce an overall positive impact. The following mitigation measures will be implemented to mitigate or minimize adverse impacts of the Selected Alternative:

Cultural Resources

- Archeological investigations were conducted to determine whether resources are present in the proposed project area. These investigations were carried out by the NPS in coordination with the State (District of Columbia) Archeologist. No archeological resources were found. Going forward, if unknown archeological resources are discovered, all work in the immediate vicinity of the discovery would be halted until the resources could be evaluated and an appropriate mitigation strategy developed, if necessary. This strategy would be developed in consultation with the District of Columbia Historic Preservation Office (SHPO), following the procedures for post-review discoveries found in the Advisory Council on Historic Preservation's 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 would be followed.
- The amount of construction materials allowed on Old Bingham Road will be limited. Only the current day's construction materials will be brought to the Bingham Run worksite each day and any unused materials will be removed at day's end.

- Features along Old Bingham Road, including the historic lamp post and cobblestone gutter, will be protected. This would include using matting to protect historic surfaces, such as the road and cobbles, and fencing to protect the lamp post. Also, the historic culvert that abuts the LOD would be flagged and covered with matting.

Vegetation

- Disturbed areas will be re-vegetated using appropriate native species; as determined by the NPS.
- Within the project's LOD, flagging or snow fencing will be used to protect the root zones of trees not slated for removal and root pruning will be performed on any trees whose roots may be adversely impacted.
- A 15-foot wide raised access path to Milkhouse Run, covered with woodchips, will be used so that impacts to vegetation will be minimized.
- Trees that are removed will be replaced with NPS-approved native tree species on a one-to-one diameter at breast height (dbh) basis, pursuant to the project planting plan.

Visitor Use and Experience

- The Western Ridge Trail and Milkhouse Multi-use Trail will be kept open at all times, with warning signs, barricades and/or other measures set up to make them safe during construction.

Topography and Soils

- An erosion and sediment control plan will be implemented which incorporates the use of silt fences and hay bales.
- Soil compaction caused by construction equipment will be mitigated through soil aeration and other measures, if necessary.

Water Quality

- Pipes will be installed on the bed of each tributary receiving RSCs to divert and protect water flow during construction.
- An NPS-approved Spill Response Kit will be used to prevent spills of fuels, lubricants, or other contaminants from entering waterways or wetlands. The kit must be present at all times, and any personnel working at the site shall be trained in the use of the kit. Also, all vehicle refueling or maintenance must occur on an asphalt surface.

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

The NPS has determined that the Selected Alternative can be implemented with no 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/AoE, several resources will experience both beneficial and adverse impacts from the proposed action. However, no significant impacts were identified that will require analysis in an EIS.

Cultural Landscapes: Installing RSCs at Bingham Run and Milkhouse Run will modify existing landscape features such as the current appearance of each stream and also be a departure from historic conditions that existed prior to urbanization of the watershed; resulting in a local, long-term, minor adverse impact. However, these changes will not alter the overall character of the landscape because the proposed project will utilize natural materials such as vegetation and stones that are consistent with surrounding natural areas. In addition, step pools and native vegetation, characteristic of RSCs, will more closely represent historic conditions than the incised channels that currently exist in the two streams. The RSCs will also protect other features that contribute to the historic landscape of Rock Creek Park such as

the Western Ridge Trail from damage caused by erosion. This is a local, long-term, beneficial impact. Nevertheless, the installation of RSCs (and associated noise and visual intrusions of a construction site) will constitute a local, short-term, minor, adverse impact. There will be no adverse effect under the NHPA.

Historic Structures and Districts: Construction activities associated with the RSCs at Bingham Run will occur on or near historic resources. During construction at Bingham Run, Old Bingham Road will be used for material storage and as an access path for equipment, resulting in a local, short-term, minor, adverse impact. To mitigate this impact, matting will protect the roadway and cobblestone gutter, and a fence will protect the lamp post. Matting will also protect the culvert that abuts the LOD. Over the long term, installation of the RSCs at Bingham Run will protect the Western Ridge Trail and Old Bingham Road from erosion damage. It also will dissipate energy so as to reduce the damaging effects of stormwater flowing down Bingham Run to culverts located along Bingham Road which is located below the project area. This will result in long-term, beneficial impacts. There will be no adverse effect under the NHPA.

Topography and Soils: Construction equipment will damage soils through disturbance and compaction, resulting in short-term, minor, adverse impacts. These impacts will be mitigated by placing woodchips along access trails, utilizing an approved erosion and sediment control plan, aerating compacted soils, and revegetating disturbed areas using NPS-approved native plant species. The installation of RSCs will require limited soil grading and excavation, as banks will be widened in certain locations to accommodate RSCs pools and shifted in others to improve hydrology. This modification in the soils and topography of the streams will result in short-term minor adverse impacts. Upon completion, the RSCs will stabilize surrounding soils and topography, preventing erosion and sedimentation, resulting in long-term, beneficial impacts.

Hydrology: The RSCs will help control stormwater runoff entering Milkhouse Run and Bingham Run by slowing the flows within the channels, and allowing more of the water to infiltrate into the groundwater. The proposed RSCs will not restore the natural hydrology of the streams and the amount of stormwater runoff entering these tributaries will not change. However, by enhancing the streams' ability to slow the flow and allowing a larger percentage of the runoff to infiltrate the groundwater, the overall hydrology within the watershed will be enhanced. This will result in long-term, beneficial impacts. During construction, water will be diverted through a pipe installed along each stream bed, which will result in short-term, negligible, adverse impacts.

Water Quality: The RSCs will improve water quality within the Rock Creek Watershed by slowing stormwater flows in a non-erosive manner so as to limit sedimentation and help filter pollutants through groundwater infiltration. This will result in long-term beneficial impacts to water quality. During construction, the proposed project could cause sedimentation, a local, short-term, minor, adverse impact. Diversion pipes installed along the streambeds of the runs will mitigate this impact.

Wetlands: The RSCs will help restore the overall function and value of degraded riparian wetlands associated with Milkhouse Run and Bingham Run. These changes will stabilize and rehabilitate the tributary riverine wetlands of Milkhouse Run and Bingham Run and associated aquatic habitat and biodiversity. This is a local, long-term, beneficial impact. During construction, the proposed project could cause local, short-term, minor, adverse impacts.

Floodplains: Due to the hydrology of the streams (base flow in Milkhouse Run is negligible, averaging only 0.002 cfs; there is no base flow in Bingham Run) and topography of the area, both Milkhouse Run and Bingham Run are outside of any designated 100-year floodplain. However, at the confluence of these two streams, there is a small flat area that shows floodplain characteristics. By slowing stormwater flows, the RSCs will help protect the floodplain from erosion by dissipating the energy of stormwater and allowing floodwaters to move more slowly through the floodplain system. This is a long-term beneficial impact.

Wildlife and Wildlife Habitat: The RSCs will be installed to convey flows in a non-erosive manner during storm events, promoting the conversion of stormwater to groundwater through infiltration, and

restoring aquatic and non-aquatic habitat by stabilizing channel beds and slopes. This is a local, long-term beneficial impact. They will also protect downstream populations of amphibians and macroinvertebrates. However, approximately 22 trees will be removed during construction (10 from Milkhouse Run and 12 from Bingham Run) resulting in some loss of habitat. This is a short-term minor adverse impact, as there is sufficient adjacent habitat that could be utilized by any displaced wildlife. After construction, any trees lost will be replaced with NPS-approved native tree species on a one-to-one diameter at breast height (dbh) basis, pursuant to the project planting plan.

Vegetation: During installation of the RSCs, denuded banks and deep channels will be filled and replaced with step pools and riparian zones and planted with native vegetation. After installation, existing vegetation surrounding the RSCs will be protected against erosion damage caused by stormwater, resulting in a local, long-term, beneficial impact. However, construction activities will adversely impact vegetation, as 22 large trees (10 from Milkhouse Run and 12 from Bingham Run) will be removed. This is a local, long-term, minor, adverse impact. (No species of special concern occur in the project area.) The sizes of these trees range from 10 to 30 inches dbh. All removed trees will be used as project materials such as wood chips to prevent soil compaction and logs for step dams. The trees will be replanted with native species approved by the NPS on a one-to-one dbh basis, as stated in the project planting plan.

Park Operations and Management: Installation of the RSCs will stabilize stream banks and adjacent vegetation will be protected from erosion, resulting in a local, long-term, beneficial impact. However, during planning and construction of the RSCs, park operations will be impacted as park staff will provide input, oversight and compliance assistance, a park-wide, short-term, minor, adverse impact. Also, under an agreement with DDOE, the park will assume maintenance responsibilities for the RSCs after an agreed-upon number of years, a park-wide, long-term, minor, adverse impact.

Visitor Use and Experience: Project work will occur close to the Milkhouse Multi-use Trail, the Western Ridge Trail, and the Rock Creek Park Community Garden. While these facilities will remain open during construction, their users will experience the noise and visual intrusions of a construction site. This will result in short-term, minor, adverse impacts. To mitigate these impacts, signs will inform the public about the project and how long the construction is expected to last. Also, to ensure public safety, barricades and/or other control measures will be installed to keep the public out of the construction site. Once the RSCs are completed, the appearance of the streams will improve, and the erosion caused by the stormwater that threatens to undermine the trails will slow. As a result, over the long term, the RSCs will beneficially impact visitor use and experience.

The degree to which the proposed action affects public health or safety: The Selected Alternative will have a beneficial impact on health and safety by protecting Milkhouse Run, Bingham Run, and surrounding resources from erosion damage. Specifically, the RSCs will ensure the stability of the Western Ridge Trail, Old Bingham Road and the Milkhouse Multi-use Trail, making it safer for visitor use.

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, 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, floodplains and historic or cultural resources within or adjacent to the project area that will be impacted.

This project involves the restoration of degraded riverine wetlands that have lost much of their wetland function. This loss is due to erosion caused by uncontrolled stormwater from the upper watershed. Temporary construction impacts to 2,900 linear feet of riverine wetland will occur, although they will be short-term and minor. The resulting improvements to the function and values of the riverine wetlands associated with Bingham Run and Milkhouse Run will be long-term, and beneficial.

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, unless the action qualifies for an exemption. After consultation with NPS Water Resources Division, it was determined that the Selected Alternative qualifies for an exemption under Section 4.2.1(h) of DO 77-1 because the project is designed specifically for the purpose of *restoring* degraded (or completely lost) natural wetland, stream, riparian, or other aquatic habitats or ecological processes. Therefore, a SOF will not be written.

There is also one floodplain located within or adjacent to the project area. It is a small plot of elevated land that sits at the confluence of the two tributaries of Milkhouse Run, where the tributaries merge and continue as one stream to Rock Creek. During large storm events, this plot becomes inundated with water. According to NPS DO #77-2: Floodplain Management; a SOF is required when an action will have an adverse effect on a floodplain. The SOF provides reasoning as to why the proposed site was selected and why less flood-prone alternative sites were rejected. However, for the proposed project, a SOF will not be required because impacts to floodplains will be beneficial, not adverse.

This project is within Rock Creek Park, a historic district on the National Register of Historic Places. The park is also a cultural landscape. The project is also within close proximity of other historic resources listed or eligible for listing, such as the Western Ridge Trail and Old Bingham Road. On January 25, 2011, the NPS submitted this project for review to the District of Columbia SHPO and ACHP, initiating consultation under Section 106 of the NHPA. In a letter dated February 18, 2011, the SHPO stated that "this project will have no adverse effect on historic properties provided that the NPS will consult further with our office if any potential adverse effects are identified through review of the forthcoming Environmental Assessment." NPS submitted the EA/AoE to the SHPO for review and comment on May 18, 2011.

The Selected Alternative will have minor impacts on historic structures and the cultural landscape.. During construction, some materials will need to be stored on Old Bingham Road, and the RSCs will modify existing landscape features, including the current condition of each stream as well as be a departure from historic conditions that existing prior to urbanization of the watershed. Archeological investigations were conducted by the NPS in coordination with the State Archeologist to determine whether resources are present within the proposed project area. No archeological resources were found. In order to avoid, minimize, and/or mitigate the adverse effects on cultural resources within the Area of Potential Effect, the Selected Alternative includes the following provisions:

- **Use of Natural Materials**: The RSCs will not alter character-defining features of the historic landscape. The proposed project will utilize natural materials such as vegetation and stones that are consistent with surrounding natural areas. In addition, the step pools and native vegetation characteristic of a RSC will more closely represent historic conditions than the incised channels that currently exist.
- **Protection of Historic Structures**: Construction materials will be brought to and removed from the Bingham Run worksite each day, so only the current day's materials will be stored on Old Bingham Road. Features along Old Bingham Road will be protected. This will include using matting to protect historic surfaces, such as the road and cobblestone gutter, and fencing to protect the lamp post. Also, the historic culvert that abuts the LOD will be flagged and covered with matting.
- **Archeology**: If unknown archeological resources are discovered, all work in the immediate vicinity of the discovery will be halted until the resources could be evaluated and an appropriate mitigation strategy developed, if necessary. This strategy will be developed in consultation with the SHPO, following the procedures for post-review discoveries found in the Advisory Council on Historic Preservation's 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.

Degree to which effects on the quality of the human environment are likely to be highly controversial: No highly controversial effects resulting from the Selected Alternative on the quality of the human environment were identified during the preparation of the EA/AoE or the public comment period.

Degree to which the possible effects on the quality of the human environment are highly uncertain, or involve unique or unknown risks: There were no highly uncertain or unique or unknown risks resulting from the Selected Alternative on the quality of the human environment were identified during preparation of the EA/AoE or the public comment period.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration: The Selected Alternative neither establishes a NPS precedent for future actions with significant effects nor represents a decision in principle about a future consideration.

Whether the action is related to other actions with individually but cumulatively significant impacts: Implementing the Selected Alternative will have no significant, cumulative adverse impacts. Minor cumulative adverse impacts will occur to soils, hydrology, floodplains, vegetation, and park operations and management.

Soils: The rehabilitation of Peirce Mill and trail/road paving projects in or adjacent to the park will displace soils, resulting in a local, long-term, minor adverse impact. Also, the continued implementation of the park's General Management Plan will result in new development that could lead to grading and soil displacement, causing local, long-term, minor, adverse impacts. These projects, in combination with the Selected Alternative, will have short-term and long-term minor, adverse, cumulative impacts on soils. From a regional context, these impacts are negligible.

Hydrology: The overall urbanization of the watershed will continue to adversely impact the hydrology of streams within the region. These impacts, in combination with the beneficial impacts from the Selected Alternative, will have long-term, moderate, adverse cumulative impacts on hydrology within the watershed. The beneficial contribution of the Selected Alternative will be negligible.

Floodplains: The rehabilitation of Peirce Mill will have local, short-term and long-term, minor, adverse impacts on floodplains. That project, in combination with the Selected Alternative, will have long-term, minor, adverse cumulative impacts to floodplains within the watershed. The contribution of the Selected Alternative will be negligible.

Vegetation: The rehabilitation of Peirce Mill might result in the loss of some grasses, shrubs, and trees, a local, long-term, minor, adverse impact. This impact, in combination with the impacts from the Selected Alternative, will result in long-term, negligible to minor, adverse cumulative impacts on vegetation. From a regional context, these impacts are negligible.

Park Operations and Management: It is anticipated that demand for park resources will escalate due to increased use of the park by visitors. This demand will have a detectable but unnoticeable effect on park operations and management. The impact, in combination with impacts associated with the Selected Alternative, will result in long-term, minor, adverse impacts on park operations and management. The contribution of the Selected Alternative will be negligible.

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. The project is within Rock Creek Park, a historic district listed in the National Register of Historic Properties. The park is also a cultural landscape. The project is also within close proximity to other historic resources listed or eligible for listing, such as the Western Ridge Trail and Old Bingham Road. However, as explained above in the section addressing the unique characteristics of the geographic area, the Selected Alternative will have minor adverse impacts on these resources and will implement modifications to mitigate or avoid these or other adverse effects.

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, the NPS initiated an informal consultation with the U.S. Fish and Wildlife Service (USFWS) requesting information on the presence of species which are federally listed or proposed for listing as endangered or threatened within the proposed project area. On June 16, 2011 the USFWS responded stating that "except for the occasional transient individuals, no proposed federally listed endangered or threatened species are known to exist within the project impacts area. Therefore, no Biological Assessment or further section 7 consultation with the USFWS is required." No impacts to any state- or federally listed species will occur.

Whether the action threatens a violation of federal, state, or local environmental protection law: No federal, state, or local environmental protection laws will be violated.

IMPAIRMENT OF PARK RESOURCES OR VALUES

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

As explained below, while the Selected Alternative will result in adverse impacts to some of the park's natural and cultural resources, none of these resources will be impaired. Impacts will be mitigated through requirements listed in the EA/AoE, the Finding of No Significant Impact, and the Special Use Permit.

Under the Selected Alternative, cultural landscapes will not be impaired. Components of the Rock Creek Park cultural landscape and the Western Ridge Trail are located in or around the proposed project area. Although these resources 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. Indeed, all adverse impacts of the Selected Alternative on the cultural landscapes described previously are no more than minor.

Under the Selected Alternative, historic structures and districts, topography and soils, water quality, wetlands, floodplains, wildlife and wildlife habitat and vegetation will not be impaired. Although they 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 impact to these resources. Indeed, all adverse impacts of the Selected Alternative on these resources are minor.

Under the Selected Alternative, the hydrology of Milkhouse Run and Bingham Run will not be impaired. Although it 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 these resources.

PUBLIC INVOLVEMENT

During preparation of the EA/AoE, NPS staff mailed stakeholders letters requesting comment on the proposed project. Recipients included St. John's College High School; Advisory Neighborhood Commissions (ANC) 3/4G; Friends of Rock Creek's Environment (FORCE); The Army Distaff Foundation, Inc., which operates a nearby facility for seniors; and the Rock Creek Community Garden Association.

After receiving a scoping letter, ANC 3/4G asked DDOE and NPS to speak about RSCs at the ANC's monthly meeting. On February 28, 2011, representatives from the DDOE and NPS delivered a short presentation about RSCs and fielded questions from participants. Most of the questions involved project details. One constituent asked whether DDOE and NPS were coordinating with the District Department of Transportation (DDOT) which was planning to repave Oregon Avenue. DDOE and NPS responded that the agencies were collaborating on all aspects of the repaving project, including stormwater management strategies that would be acceptable to the park and surrounding homeowners.

The EA/AoE was made available for public review and comment on May 18, 2011. It was announced via press release from the NPS Office of Communications, and notice of availability letters were sent to project stakeholders. The NPS also mailed printed copies the EA/AoE to federal and local government offices, including DDOT and the National Capitol Planning Commission. The EA/AoE was also placed on the NPS' Planning, Environment and Public Comment website.

The comment period concluded on June 18, 2011, with the NPS receiving three sets of comments from a single individual, FORCE, and the Environmental Protection Agency (EPA). One of the comments from the EPA was a result of some inaccurate information presented in a footnote on page 38 of the EA. That inaccuracy was corrected, and is included in the errata for the EA (See attached). These comments did not result in any changes to the overall impact analysis or the Selected Alternative that was presented in the EA/AoE. The comments in their entirety along with NPS responses are attached.

CONCLUSION

The NPS has selected Alternative B for implementation. The impacts that will result from the Selected Alternative will not impair any park resource or values necessary to the NPS. The Selected Alternative does not constitute an action that normally requires preparation of an EIS. The Selected Alternative will not have a significant effect on the human environment. No significant impacts will be caused by the Selected Alternative, and negative impacts that could occur are minor to moderate in intensity. The proposed action will not cause highly uncertain or controversial impacts, unique or unknown risks, or significant cumulative effects. Implementation of the Selected Alternative will not violate any federal, state, or local environmental protection law.

The Selected Alternative does not constitute a major federal action that significantly affects the quality of the human environment. Based on the foregoing, an EIS is not required for this action and thus will not be prepared. This is a finding of no significant impact.

Recommended: 6/21/11

Tara Morrison
Superintendent
Rock Creek Park

Date

Approved: 6·22·11

Steve Whitesell
Regional Director
National Capital Region

Date

INSTALLATION OF REGENERATIVE STORMWATER CONVEYANCES AT BINGHAM RUN AND MILKHOUSE RUN

Rock Creek Park

Environmental Assessment/Assessment of Effect

Errata

This errata sheet documents changes to the text of the Rock Creek Park, Installation of Regenerative Stormwater Conveyances at Bingham Run and Milkhouse Run EA/AoE as the result of information provided since the document was released on May 18, 2011. Public comments on the EA were also reviewed by an interdisciplinary team to identify any substantive comments that require text changes to the EA. Substantive comments were considered to be comments that:

- Question, with reasonable basis, the accuracy of information in the EA.
- Question, with reasonable basis, the adequacy of environmental analysis.
- Present reasonable alternatives other than those presented in the EA.
- Cause changes or revisions in the proposal.

Additions to the text are identified by underlines and deletions are marked by strikeout unless otherwise noted.

CUMULATIVE IMPACTS

1. FOOTNOTE [1] [PAGE 38]

Footnote edited. Information provided in this footnote was inaccurate.

1 Oregon Avenue contributes stormwater to Milkhouse Run and Bingham Run~~. DDOT faces engineering constraints that necessitate the use of these runs for stormwater mitigation.~~ DDOTs repaving plans would not affect the design or installation of the RSCs, which are engineered to handle stormwater flows ~~coming from Oregon Avenue during~~ resulting from a 100-year storm.

Installation Of Regenerative Stormwater Conveyances At Bingham Run And Milkhouse Run – Environmental Assessment

NPS Response to Comments.

No.	Commenter	Comment	NPS Response
1	Daniel Schramm	First, I would like to commend NPS, DDOE and other partnering agencies for developing these stream restoration projects.	Comment noted.
2	Daniel Schramm	Second, I was disappointed that there was not further discussion of upland, or upstream stormwater management alternatives. In other words, a discussion of options for working with residential owners, other government agencies, businesses, and organizations, to take measures to reduce the amount of stormwater entering the park, or at least a reduction in its intensity when there are heavy storms. New technologies and, indeed, regulatory initiatives, such as those being developed by EPA, provide a strong impetus and opportunity to mainstream stormwater reduction strategies into these types of projects. As Rock Creek Park is located in a major urban area, clearly a restoration project at just one stream within the park is insufficient to deal with all of the stormwater impacts that the Park faces. It seemed the discussion of opportunities to engage in this type of programming was fairly limited and quickly dismissed opportunities to work on a voluntary basis with private landowners around the Park. I expect when NPS and DDOE reach out to such people to discuss options to improve the environment in this way, they would generally receive a positive reception.	The NPS and DDOE agree that taking a more holistic approach towards stormwater management would result in the greatest overall benefit. However, the focus of this project is to rehabilitate and stabilize Bingham Run and Milkhouse Run after years of uncontrolled high-volume stormwater flows. These flows have damaged the tributaries through erosion and sedimentation, which have destabilized the surrounding environment, reduced infiltration of water into underlying aquifers, and compromised wildlife habitat. Without intervention, uncontrolled stormwater will continue degrading these resources. However, this is not the only action being taken within the watershed to address the problem of increased stormwater runoff. DDOE consistently works with the NPS, the District Department of Transportation (DDOT), private homeowners, and other federal and local agencies to reduce stormwater runoff and improve water quality within the District. As part of this effort, DDOE: • Educates District residents, students and teachers about the benefits of environmental stewardship and encourages pollution prevention by carrying out information and education campaigns and increasing involvement in cleanup efforts in the Anacostia River, neighborhood watersheds, and the Chesapeake Bay. • Assesses the health of watersheds and habitats, and sponsors community restoration activities such as tree planting and drain marking. • Promotes the use of low-impact development and offers incentives to property owners to reduce stormwater runoff. • Regulates construction sites for stormwater management and sediment and erosion control. • Sponsors activities that protect and restore river, stream, and wetland habitats in DC; increases the Chesapeake Bay watershed's ecological diversity; and protects the health, welfare, and safety of

NPS Response to Comments.

No.	Commenter	Comment	NPS Response
			residents. • Provides funds for, manages and implements stream and wetland restoration projects throughout the District.
3	Daniel Schramm	I noticed that the parameters for stream restoration, in particular, the creation of intermittent pools, are based in part on 100-year flood projections. As you are aware, climate change will have a significant impact on the frequency and severity of precipitation events, and associated flooding and stormwater runoff levels. In designing this project, I believe it is appropriate for NPS to reevaluate the accuracy of historic flood modeling data in order to reflect the best science regarding the expected frequency over short, near, and long-term time periods of what were once considered to be 100-year events. The President's recent Executive Order on climate adaptation, the subsequent work of the interagency taskforce, as well as NEPA and NPS's organic statutes provide sufficient authority, and indeed an obligation, for the agency to use the best science, and in particular, the best climatic data, to ensure actions taken now to restore the park with be resilient to the dramatic climatic shifts scientists worldwide now tell us we should expect. For example, NPS should consider adding a "fudge factor" of a certain percentage to historical 100-year flood data in designing pool depths and other parameters of the stream work, in order to account for anticipated acceleration of frequency of such flooding events due to climate change.	The design for the RSC systems is based on the most current and available data to best handle the flows associated with a 100-year storm event. There are uncertainties about changes in precipitation caused by climate change. (NPS acknowledges climate change as fact.) However, this proposal, which is aimed at rehabilitating two small perennial urban streams while also providing some stormwater runoff benefits, is but one action among many current and future actions aimed at controlling stormwater runoff occurring throughout the District. (See previous NPS response.) Increasing the size and volume of the RSC would result in a larger area being affected, which would increase environmental impacts during construction. After construction of this larger system, the long-term predicted benefits may never be realized.
4	EPA Region III	EPA would like to encourage the NPS and its partners to consider upland alternatives that address the apparent stormwater issues in Rock Creek Park, for example, the use of infiltration trenches, bio-swales, removal or conversion of excess impervious surfaces, in the future projects of this nature.	The NPS agrees that the aforementioned upland alternatives are appropriate measures to treat stormwater runoff, and actively collaborates with District agencies (i.e., DDOE, DDOT, DC Water) on many stormwater control projects, including the examples you provided. Acknowledging the merit of a holistic approach to stormwater management, the NPS in the EA explained that "[s]tormwater from impervious surfaces such as roofs, driveways and roads can sometimes be treated at or near its source with bioretention ponds or swales, shade trees, rain barrels and pervious surfaces. RiverSmart Homes, a program offered by DDOE, helps homeowners install such stormwater controls on their properties. However, the effort to convince homeowners to install and use these controls voluntarily in large enough numbers to curtail significant amounts of stormwater in Bingham Run and Milkhouse Run would be expensive and time consuming. In addition, while the stormwater controls were being

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No.	Commenter	Comment	NPS Response
			implemented over the course of several years, the tributaries in question would continue to degrade." Thus, the scope of this project is rehabilitating and stabilizing Bingham Run and Milkhouse Run in a manner that allows these small urbanized streams to handle excess stormwater.
5	EPA Region III	In order to keep with the spirit of NEPA, EPA suggests that for future projects of this type, the NEPA process and public involvement proceed prior to the submittal of permit applications.	Comment noted.
6	EPA Region III	Please include all agency and public scoping letters and consultation documentation that is associated with this project in Appendix B –Third Party Letters	Comment noted, see attached.
7	EPA Region III	Clarify the size of the watershed draining into Milkhouse and Bingham Runs and characterize the watersheds in terms of percent impervious cover and percent urban.	Watershed characteristics are described on page 3, Appendix D of the EA. Determining the percentage of impervious surfaces within the watershed was not done as part of this study. The whole watershed is considered urban.
8	EPA Region III	The document states that traffic/transportation would not be considered for further analysis, yet is also stated that there could be lane closures or detours associated with the project. Since there are possible adverse traffic/transportation impacts that may occur, EPA recommends that it be evaluated and discussed further in the DEA.	Comment noted: As stated in the EA, "[t]he proposed project is located near a high-traffic area for visitors and commuters. Proposed construction activities would have a negligible impact on the use of nearby roads and parking areas. The vast majority of the project will take place on or under unpaved National Park Service land. Any lane closures or detours along Oregon Avenue caused by the project would be brief and compliant with the Manual of Uniform Traffic Control Devices (MUTCD). Therefore, the impact topic of transportation/traffic is dismissed from further analysis."
9	EPA Region III	Impacts associated with site access, construction and staging should be evaluated in the DEA. Consider alternative staging areas that are located away from the historic structures in the project area.	Impacts associated with site access, construction, and staging were considered throughout the EA. The NPS is aware of the historic resources within the area and will do whatever is necessary to ensure impacts to these resources are avoided or minimized whenever possible.
10	EPA Region III	The DEA proposes to place a pipe on the stream bed as part of a stream diversion practice to conduct in-stream work. Please explore the usé of alternative methods, including the traditional pump-around.	Comment noted.
11	EPA Region III	The document describes a significant amount of fill material that is needed to construct Alternative B. Please quantify the expected amount of material needed. In light of the fact that a large amount of fill is proposed to be placed in streams, some of which are perennial, it may be prudent to explore scenarios of failure and blowout. It is not	The design of the RSC is such that there will not be a "blow out." The design of the RSC will follow the natural topography of the stream and surrounding areas. Water in the stream will be slowed and either infiltrate into the groundwater or continue to flow downstream into Rock Creek. Nowhere will

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		clear that RSCs can be utilized safely in perennial reaches.	there be any structure that will hold back water. Further, the proposed RSCs were designed knowing that Milkhouse Run is fed by two small perennial sources. As stated in the EA, "Milkhouse Run begins as two perennial, first-order streams that originate directly east of Oregon Avenue. The streams eventually join and continue as one stream to Rock Creek. … Spring-fed water enters the South Fork after passing through a culvert under the Milkhouse Multi-use Trail. On the North Fork, spring-fed water enters from a seep located near the tributary's headwaters. … During dry conditions, Bingham Run doesn't convey water, and Milkhouse Run conveys a small amount (0.002 cubic feet per second) of spring-fed water."
12	EPA Region III	Provide the linear footage of stream that is proposed to be moved from its existing location.	At this stage of planning, the exact linear footage of proposed stream shifting is uncertain. However, it will be a relatively low percentage of the total affected stream length.
13	EPA Region III	Page 24 states that RSCs protect downstream populations of amphibians and macroinvertebrates. It is unclear how amphibians and macroinvertebrates will respond in that RSC that buries the original channel bottom with sand. Please clarify that there were no aquatic organisms, including salamanders or macroinvertebrates in the stream reaches.	As stated in the EA, under current conditions, stormwater flows would continue causing erosion, sedimentation, and channel incising, destabilizing nearby trees and reducing aquatic and non-aquatic habitat and biodiversity, resulting in long-term minor adverse impacts. Under alternative B, RSC systems would be installed to convey flows in a non-erosive manner during storm events, promoting the conversion of stormwater to groundwater through infiltration, and restoring aquatic and non-aquatic habitat by stabilizing channel beds and slopes, a local, long-term beneficial impact. As stated on page 33, NPS natural resources specialists did not find aquatic species in the project areas. However, downstream from the project areas, NPS staff found populations of Northern Two-lined Salamanders (*Eurycea bislineata*) and macroinvertebrates such as chironomids, crayfish and caddis flies.
14	EPA Region III	It would improve the document if the water quality section was expanded to detail specific issues in each reach supported by data. This information would help quantify changes from the baseline conditions.	Comment noted.
15	EPA Region III	Please provide the type and acreage of any fringe wetland system above the ordinary high water mark of streams that may be in the LOD or near/adjacent to the work area. Maps may be helpful to display wetland and floodplain information. Milkhouse and Bingham Runs are considered riverine wetland systems, as stated in the document. Will these systems continue to	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. Milkhouse Run and Bingham Run are riverine wetlands under the NPS-recognized U.S. Fish and Wildlife Service (FWS) Cowardin Classification System. The dominant water source at these

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No.	Commenter	Comment	NPS Response
		provide the same functions and values as a riverine wetland after project construction? Please explain how RSC practices of adding sand over stream channel bottoms leads to stream rehabilitation.	runs is uncontrolled stormwater that enters the tributaries during storm events and damages the wetlands. Additional water sources include perennial springs, which provide a small base flow to Milkhouse Run. No fringe wetland systems above the ordinary high water mark are known to exist within the Limits of Disturbance. Maps showing the watershed and floodplains are provided in Appendix D. Due to the extreme erosion suffered by these streams, the functions and values associated with these riverine wetlands is highly degraded. This project is designed specifically for the purpose of restoring degraded (or completely lost) natural wetland, stream, riparian, or other aquatic habitats or ecological processes. Overall, the functions and values of these riverine wetlands will be greatly improved.
16	EPA Region III	The existing vegetative communities are detailed in Tables 2 and 3. It appears that there are many invasive/non-native species present in the project area. Please consider developing an invasive species control plan for the project area.	Comment noted.
17	EPA Region III	Page 38 included a discussion of DDOT's Oregon Avenue project. Footnote 1 state that "Oregon Avenue contributes stormwater to Milkhouse Run and Bingham Run. DDOT faces engineering constraints that necessitate the use of these runs for stormwater mitigation." Please clarify this statement. If the proposed project and the Oregon Avenue project are connected actions, EPA is concerned that they are not being evaluated jointly as a single and complete project. EPA would also express concern of RSCs proposed in this project were going to be used as mitigation for other impacts from other projects.	The purpose of the project is to rehabilitate and stabilize Bingham Run and Milkhouse Run. The statement that "DDOT faces engineering constraints that necessitate the use of these runs for stormwater mitigation" is inaccurate. While Oregon Avenue does currently contribute stormwater to Bingham Run and Milkhouse Run, the proposed RSC project is not a mitigation for engineering constraints faced by DDOT in the Oregon Avenue project or any other project. In fact, the Oregon Avenue project will help reduce stormwater runoff by sloping the road away from the NPS boundary and into a system of vegetated-swales and storage facilities. Because the two projects are close in both timing and proximity and both will have effects on stormwater, the Oregon Avenue project is considered as a cumulative impact project in this EA. The two projects are not mutually exclusive and are not connected actions. Neither the Oregon Avenue project nor the RSC project is dependent upon each other. Either project could occur without the other. Because the footnote does not provide any information pertinent to the cumulative impacts discussion, the entire footnote will be deleted from the EA through an Errata to the

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No.	Commenter	Comment	NPS Response
			EA.
18	EPA Region III	The document states that trees being lost would be replaced on a 1:1 DBH basis. Please discuss the total amount of DBH being replaced.	The approximate numbers and sizes of the trees that will be removed are described on page 52 of the EA.
19	Friends of Rock Creek's Environment (FORCE)	FORCE strongly supports the preferred alternative, which calls for installation of regenerative stormwater conveyances at Bingham Run and Milkhouse Run. These two creeks are badly eroded and in need of restoration. The conveyances offer many substantial environmental benefits, including water quality improvements, stormwater management, and groundwater recharge. They will also help restore the natural beauty of the park. We are particularly interested in water quality improvements in Bingham Run, which showed the highest levels of caffeine and DEET measured in the US Geological study of Rock Creek and its tributaries in Rock Creek Park. These measurements are documented in USGS, *Occurrence and Distribution of Organic Wastewater Compounds in Rock Creek Park, Washington, DC, 2007-08.* We applaud the National Park Service and the District Department of the Environment for working together on this important project and hope that it will be installed as quickly as possible. We urge you to provide for additional regenerative stormwater conveyances in the many tributaries throughout Rock Creek Park that have suffered serious stormwater damage.	Comment noted.