# APPENDIX C: WETLANDS STATEMENT OF FINDINGS

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**National Park Service**
**U.S. Department of the Interior**

**Rock Creek Park**
**Washington D.C.**

# Wetland Statement of Findings

## *For Proposed Reconstruction and Rehabilitation of Rock Creek and Potomac Parkway Southbound At Waterside Drive*

***Rock Creek Park***

Washington, D.C.

July 2012

Recommended: _____

Tara Morrison — Date
Superintendent - ROCR

Concurred: _____

Gary Rosenlieb — Date
Acting Chief of Water Resources Division

Approved: _____

Steve Whitesell — Date
Regional Director – National Capital Region

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## Introduction

Rock Creek Park is a 2,896-acre park in Washington, D.C., extending from the Maryland border to the Potomac River. It consists primarily of an undeveloped, wooded valley, with some associated tributaries and uplands. The major landscape feature is Rock Creek, a perennially flowing stream that bisects the length of the park before flowing into the Potomac River south of the park. The park is completely surrounded by the heavily urbanized metropolitan area of Washington, D.C. Rock Creek and Potomac Parkway (the parkway) is a travel corridor between Beach Drive to the north and the Lincoln Memorial to the south. The parkway runs north to south along Rock Creek and has two lanes in both directions.

There are currently traffic flow and safety problems where the southbound parkway and Waterside Drive, NW merge, immediately alongside Rock Creek. There have been a high number of accidents in the area that need to be addressed to ensure a safe roadway. The purpose of the proposed action is to improve traffic flow and to minimize the number of accidents along the parkway in the vicinity of Waterside Drive, NW. The proposed action would use a combination of improvements to increase merge area and improve sight lines by including a new acceleration lane along the parkway where the southbound ramp from Waterside Drive, NW merges, and by adding other traffic calming features. The proposed action would also address severe erosion that has occurred along the stream banks of Rock Creek in the vicinity of Waterside Drive, NW that resulted from flooding after Hurricane Irene and Tropical Storm Lee moved through the Washington, D.C. area in consecutive weeks in the summer of 2011.

## Project History

The NPS prepared an environmental assessment in 2006 that looked at safety improvements for the parkway, including proposed safety improvements at Waterside Drive, NW. Soon after construction began on the Waterside Drive, NW section of the project in July of 2011, the NPS determined that the project design was not following the preferred alternative contained in the 2006 environmental assessment. A cofferdam had already been placed within Rock Creek and the stream bank had been prepared for the construction of a retaining wall to support an additional merge lane and improvements. Fourteen large trees had also been removed from the area adjacent to the stream bank. The NPS stopped construction in this specific section of the overall project in order to reinitiate the planning and compliance for this specific component of the overall project.

In August of 2011, severe erosion took place in the section of Rock Creek in the project area as a result of the flooding that occurred after Hurricane Irene and Tropical Storm Lee moved through the area in consecutive weeks. The erosion of the stream banks was made worse because the cofferdam was still in Rock Creek. This erosion, which was affecting the stability of the Rock Creek Multi-use Trail, has been temporarily stabilized with gabion baskets pending a more permanent solution. This preferred alternative would address the severe erosion that has occurred along the stream banks of Rock Creek in the vicinity of Waterside Drive, NW that has impacted Rock Creek and wetlands and would compensate for the functional and temporal loss of riparian areas as a result of construction activities in 2011.

Executive Order 11990 (Protection of Wetlands) requires the NPS and other federal agencies to evaluate the likely impacts of actions to wetlands. NPS Director's Order 77-1: *Wetland Protection* and *Procedural Manual 77-1* provide the NPS procedures for complying with Executive Order 11990. This Statement of Findings documents compliance with these NPS wetland protection procedures.

## Preferred Alternative

Under the preferred alternative the southbound parkway at Waterside Drive, NW would be realigned toward the median between northbound and southbound parkway and a merge lane added. The existing gabion baskets installed along the creek banks would be replaced with a permanently bioengineered slope, in particular vegetated reinforced stabilized slope (VRSS).

### Road Realignment

Approximately 350 feet of the parkway southbound at Waterside Drive, NW would be realigned 12 feet (from the original, pre–2011 alignment) toward the median between the northbound and southbound parkway and a merge lane of approximately 150 feet (150 feet plus 270 feet of taper) would be added. In addition, new inlets and a pipe for drainage would be installed, requiring the disturbance of an area approximately six feet long by 3.5 feet wide by 4 feet deep for the inlets, and approximately 90 feet long by three feet wide and three feet deep for the pipe.

Under the preferred alternative, safety would be improved by the addition of an acceleration lane and taper for merging traffic from Waterside Drive, NW.

### Stream Bank Restoration

Stream banks on both sides of Rock Creek would be fully restored using bioengineering, specifically the VRSS method, which is described in detail in the environmental assessment, Approximately 250 feet of the east bank and 100 feet of the west bank would receive this treatment. The width of the VRSS on both banks would be approximately 25 feet each, for a total of 6,250 square feet disturbed on the east bank and 2,500 square feet disturbed on the west bank.

## Site Description

### Wetlands

#### ***Vegetated Wetlands***

No vegetated wetlands were identified in the project area.

#### ***Non-vegetated Wetlands***

One non-vegetated riverine system was identified within the project area (figure 1). Based on the Cowardin classification system (Cowardin et al., 1979), the portion of Rock Creek delineated (0.93 acres) is riverine, upper-perennial, unconsolidated bottom (R3UB1). It is expected that the proposed project would not have net negative impacts to Rock Creek. The preferred alternative would require in-stream activities to restore the stream banks along Rock Creek. This activity would have short-term, minor, adverse impacts; however, successful stream bank restoration would have long-term, beneficial impacts to Rock Creek by reducing the sediment load to the waterway.

**Figure 1. Delineated Section of Rock Creek within the Project Area**

**Wetlands Function and Value Assessment**

Wetland functions and values were evaluated using the U.S. Army Corps of Engineers (USACE) New England District *Highway Methodology Workbook Supplement: Wetland Function and Values, A Descriptive Approach* (USACE, 1999). The following functions and values were ascribed to the wetland systems present on the site:

*Rock Creek*

Functions and values in this wetland include groundwater recharge/discharge, fish and shellfish habitat, production export, wildlife habitat, recreation, education/scientific value, and uniqueness/heritage. Information about functions and values observed for this wetland are listed below.

- Groundwater recharge/discharge: The feature is a perennial stream that receives discharged groundwater during portions of the year;
- Fish and shellfish habitat: Although we were unable to identify the species, at least two species of small fish (less than three inches) were observed during the survey;
- Production export: This function is defined as the effectiveness of the feature to produce food or usable products for humans or other organisms. The presence of fish in the stream is a positive consideration for this function;
- Wildlife habitat: Fish, insects, and amphibians were observed in Rock Creek during the survey;
- Recreation: A Multi-use trail is located adjacent to Rock Creek;
- Education/scientific value: The feature can serve as an "outdoor classroom." Direct access to the stream is easily available from streets and parking areas; the paved trail allows for handicap access; and
- Uniqueness/heritage: Rock Creek provides special value primarily because it is surrounded by a rapidly developing urban area.

## Riparian Area Revegetation

The preferred alternative includes a riparian revegetation plan to address the approximately 0.3 acre of riparian area that was impacted by road construction activities in 2011 not specified in the preferred alternative contained in the 2006 environmental assessment, which covered the larger improvement project for the parkway. The NPS will provide compensation through the restoration at least 0.6 acres of riparian area within the boundary of Rock Creek Park. The increased acreage to mitigate the disturbance is based on a 2:1 ratio intended to off-set the temporal loss of mature riparian vegetation. To ensure that the compensation requirements are met the NPS has prepared a *Draft Revegetation Plan for the Rock Creek Park Riparian Area* (NPS 2012), which currently details the revegetation of six areas comprising approximately 0.69 acres (see figure 2). Ultimately, more areas for revegetation may be added to the plan and the total area revegetated may be more than 0.69 acres. However, regardless of the final revegetation plan approved by NPS, a minimum of 0.6 acres will be revegetated to satisfy the 2:1 mitigation ratio. Below is a summary of the elements of the revegetation plan; for complete details of the entire revegetation plan, refer to the *Draft Revegetation Plan for the Rock Creek Park Riparian Area* (NPS 2012).

The revegetation area is composed of six riparian sites located along the banks of Rock Creek between Bingham Drive, NW and Sherrill Drive, NW (figure 2). The six proposed sites range between 0.005 acres and 0.279 acres and are immediately adjacent to the banks of Rock Creek. Throughout the proposed revegetation area, the banks of Rock Creek are very steep and practically vertical from the edge of the riparian zone to the creek bed. Scouring of the stream banks is present throughout the revegetation area. During a field visit by an NPS Regional Botanist and a ROCR Natural Resource Specialist, the existing

vegetation was identified and a complete list was compiled, which can be reviewed in the *Draft Revegetation Plan for the Rock Creek Park Riparian Area* (NPS, 2012).

Vegetative plantings would include species assemblages selected and planted based on elevation and/or landscape position in relationship to the stream and stream bank. Seedlings would be planted for an initial density of 100 trees per acres with a target of 50 to 75 mature canopy trees per acre. Native shrubs, vines, perennials, ferns, and grasses would also be planted.

Proposed species would be representative of species assemblages historically common to surrounding riparian and palustrine habitats and would be consistent with native vegetative species found near the project sites. Tree species to be planted would include red maple (*Acer rubrum*), river birch (*Betula nigra*), and sycamore (*Platanus occidentalis*) in the upland areas and boxelder (*Acer negundo*) and black willow (*Salix nigra*) along the stream bank. Shrub species to be planted include spice bush (*Lindera benzoin*), witch hazel (*Hamamelis virginiana*), and viburnum species (*Viburnum* spp) in the upland areas and silky dogwood (Cornus amomum), elderberry (*Sambucus canadensis*), and arrow wood viburnum (*Viburnum dentatum*) along the stream bank. Herbaceous species include milkweed (*Asclepias syriaca*), Eupatorium species, Christmas fern (*Polystichym acrosticoides*), and Virginia wild rye (*Elymus virginicus*) in the upland areas and broom sedge (*Carex scoparia*), cinnamon fern (*Osmunda cinnamomea*), and cardinal flower (*Lobelia cardinalis*) along the stream bank. Tables 2 and 3 in the *Draft Revegetation Plan for the Rock Creek Park Riparian Area* (NPS, 2012) detail the entire list of species proposed for revegetation plantings.

Existing mature or semi-mature native trees would be preserved within the Rock Creek riparian revegetation area; these trees will be located and mapped by GPS and flagged for preservation. Trees with a diameter at breast height of over six inches located within the revegetation area will be marked with flagging or temporarily surrounded by orange construction fencing to prevent damage to root zones during site activities.

In addition to preservation of native trees, native shrubs and masses of herbaceous material will also be identified and their general locations mapped on the project plans. Any additional flagging or marking necessary to identify this vegetation for preservation will be provided. No site grading is expected for this project; therefore, transplanting existing plant material will not be necessary.

Planting will commence in the spring of 2013and would be completed before the road construction at Waterside Drive, NW is completed. All in-stream or stream bank work will be initiated and completed during a time when the restoration work will not interfere with spawning or migration of fish and amphibians.

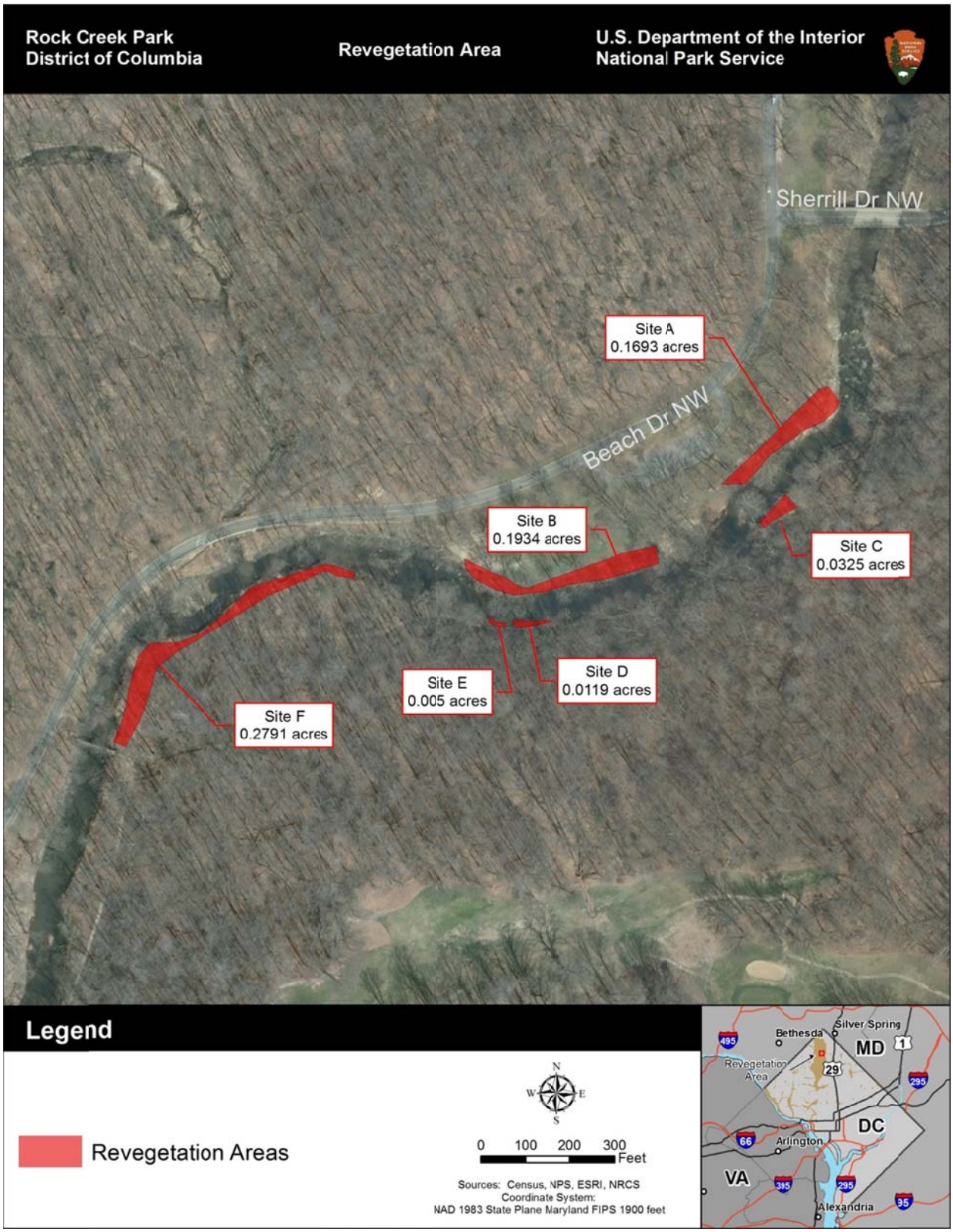
## Mitigation Success Criteria

The mitigation would be considered successful if the following conditions are realized at the end of the three-year monitoring program:

- Mitigation areas contain no more than 20 percent total cover by exotic and nuisance plant species;
- Vegetation has become established (with 80 percent canopy closure);
- A mosaic of wetland and upland habitat with no less than 20 percent of the area supporting hydrophytic vegetation; and

A survival rate of 90 trees per acre is expected. To ensure this survival rate, seedlings will be protected with biodegradable mesh tubes. Dead seedlings will also be replaced as needed through

**Figure 2. Rock Creek Riparian Revegetation Area**



- the three-year monitoring period.

## On-Site Monitoring

### Monitoring Methodology

Monitoring will be conducted at the revegetation sites beginning immediately after the completion of the planting of trees and vegetation by contractors obtained by the NPS. Monitoring will document the rate of successful establishment of native species and ensure that non-native invasive species are removed. Maintenance would be expected for two years and monitoring for three years. If required, supplemental plantings will be performed by contractors obtained by NPS, to be followed by another monitoring survey.

Status of vegetation, wildlife, and general weather will be documented at the restoration site. A time-zero post construction and planting (as-built conditions) report will document plant densities and describe the conditions of the restoration areas after restoration is completed. The monitoring reports will document the progress of the restoration efforts and monitor the success of the plantings and natural species recruitment. All reports will be kept on file at the Rock Creek Park headquarters. Any issues that arise or corrective action that needs to be taken will also be included in the monitoring reports. Observations of vegetation will be made along fixed transects in restoration sites to ensure identical sampling procedures throughout the time-zero and the subsequent reporting cycles.

### Wildlife Monitoring

During the monitoring program, observations of wildlife will be made in the restoration areas during monitoring surveys through both visual means and inspection of physical evidence.

### Photographic Documentation

Photograph stations will be identified in the restoration areas. These locations will be used to document the physical condition of the restoration area during the three-year monitoring program.

## Monitoring Reports

Monitoring reports will be prepared by a contractor obtained by NPS. These reports will provide documentation of the success of the mitigation program and the general condition of the enhanced area.

Monitoring reports will consist of the following information:

- Narrative description of the enhancement activities performed since the last report;
- Explanation of maintenance work to be conducted over the next year;
- List of wildlife species observed;
- Results of vegetative monitoring,
- Photographs taken at photo station locations on compass points;
- General weather description; and
- Description of any remedial action recommendations (if necessary).

These reports will be submitted to the Rock Creek Park Chief of Resources for review and filed at Rock Creek Park.

## Long Term Maintenance and Monitoring

The revegetation sites will be maintained continually to ensure exotics and nuisance species do not become the dominant vegetation. If necessary, exotic and nuisance species will be removed and the

revegetation areas replanted with native species to replace the original species. Maintenance of the revegetation area, including replanting to replace dead plants, will be performed by an outside contractor obtained by NPS for two years. The cost of replacing species will be negotiated by NPS with the outside contractor; it is expected that all the planted seedlings will be covered by a warranty.

The revegetation areas will be inspected for three years for damage or vandalism and to ensure that fencing and signage are in serviceable condition. Any discrepancies noted during annual inspections will be corrected or addressed within a reasonable timeframe. Long-term monitoring will be conducted by contractors obtained by the NPS.

## Justification for the Use of Wetlands/Waters of the United States

Stream banks on both sides of Rock Creek have experienced substantial erosion and would be fully restored using bioengineering, specifically the VRSS method. Approximately 250 feet of the east bank and 100 feet of the west bank would receive this treatment. The width of the VRSS on both banks would be approximately 25 feet each, for a total of 6,250 square feet disturbed on the east bank and 2,500 square feet disturbed on the west bank.

During the course of road construction in 2011 (as part of the 2006 environmental assessment that looked at safety improvements for the parkway, including proposed safety improvements at Waterside Drive NW) construction of a retaining wall to support an additional lane caused impacts to the riparian areas along the stream bank of Rock Creek near Waterside Drive, NW by 1) removal of 14 trees that provided ecological functions to Rock Creek; 2) removal of soil and vegetation along the roadside bank; and 3) exacerbating trailside bank erosion by the placement of a coffer dam within Rock Creek.

As a response to these riparian zone impacts, the NPS conducted an assessment to determine appropriate compensation for the unavoidable wetland impacts as required by the U.S. Army Corps of Engineers (USACE) for Section 404 permits and by the NPS for compliance with Director's Order 77-1: *Wetland Protection*. As a result, a wetland delineation investigation was conducted on October 21, 2011. The findings of the impact assessment concluded that approximately 0.3 acres of riparian area was impacted by the construction.

All regulated activities within waters of the United States including the 100-year floodplain and jurisdictional wetlands, will be conducted in accordance with federal permit conditions and the District's guidelines for in-stream construction.

## Compliance

*Clean Water Act Section 404*

The proposed action does not adversely and permanently impact waters of the United States as defined by the Clean Water Act. However, potential in-stream work for removal of the temporary gabions baskets and the installation of the VRSS may create temporary impacts and may be subject to review by the U.S. Army Corps of Engineers. The Clean Water Act Section 404 regulates the discharge of dredged or fill material into waters of the United States.

*National Environmental Policy Act*

The environmental assessment and this Statement of Findings for Executive Order 11990 will complete the requirements for the National Environmental Policy Act for this project.

## Conclusion

The preferred alternative was designed to minimize impacts to wetlands and other waters of the United States and to compensate for impacts to wetlands, the Rock Creek stream bank and streambed, and for

impacts to the riparian areas along the stream bank of Rock Creek near Waterside Drive, NW from previous road construction activities. The preferred alternative includes restoration of approximately 250 feet of the east bank and 100 feet of the west bank of Rock Creek within the project area using VRSS, as well as revegetation of riparian areas upstream of the project area. Successful stream bank restoration would have long-term beneficial impacts to Rock Creek by reducing the sediment load entering the waterway, and successful revegetation of riparian areas would compensate for the ecological function and temporal loss of the riparian areas within the project area that resulted from road construction activities in 2011.

The NPS finds that this proposed action is consistent with the policies and procedures of NPS Director's Order 77-1: *Wetland Protection*.

## References

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# APPENDIX D: SECTION 106 ASSESSMENT OF EFFECTS

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