SUMMARY

S.1 PREFACE

The Federal Highway Administration (FHWA) and the District Department of Transportation (DDOT), in cooperation with the National Park Service (NPS), are proposing the rehabilitation of the 1.7-mile segment of Oregon Avenue, NW, between Military Road and Western Avenue along the northwestern border of Rock Creek Park.

An Environmental Assessment (EA) for this project was completed in May 2011 in accordance with the National Environmental Policy Act of 1969 (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508), FHWA's *Environmental Impact and Related Procedures* (23 CFR 771), FHWA's *Technical Advisory Guidance for Preparing and Processing Environmental and Section 4(f) Documents* (T6640.8A), DDOT's *Environmental Policy and Process Manual,* and NPS Director's Order #12: *Conservation Planning, Environmental Impact Analysis, and Decision-making*.

The EA was released for 30-day public comment on June 13, 2011 and a public hearing was held on June 29, 2011. The public and agencies were given the opportunity to review and comment on the EA until July 14, 2011. In response to public requests, the public comment period was extended for 15 days to July 29th, 2011 and upon further request from the community the comment period was extended to August 29th, 2011. This Final EA addresses comments submitted on the EA at the public hearing and during the associated public comment period. This Final EA also identifies Alternative 3-Modified as the Preferred Alternative.

S.2 PURPOSE AND NEED

The purpose of the proposed action is to rehabilitate Oregon Avenue to satisfy operational, safety, and multi-modal transportation needs. Context sensitive solutions will take into account the adjoining land uses - residential developments to the west and Rock Creek Park to the east. The project needs are a culmination of infrastructure deficiencies, including deteriorating pavement, inadequate stormwater drainage, and aging and inadequate structures; safety concerns due to substandard roadway geometrics and the lack of separate facilities for pedestrians and bicycles; gaps in system linkage for pedestrians and bicyclists to parks, schools, and residential areas adjacent to Oregon Avenue and to the Rock Creek Park multi-use trail system; and local legislation: the District of Columbia's Priority Sidewalk Assurance Act of 2010.

S.3 PROJECT BACKGROUND

The rehabilitation of Oregon Avenue was originally placed on DDOT's schedule of planned improvements because of the needs for roadway repair and the desire for a safer facility. Failing drainage, poor lighting, limited sight distances, and speeding are creating unsafe conditions. Aging infrastructure has also been cited as a deficiency within the roadway

corridor. The culvert carrying Oregon Avenue over Pinehurst Run has been found to be in poor condition with deficiencies in the outlet headwall and abutments due to scour and aging, deterioration of concrete parapets, failed guardrails, and a need for in-stream stabilization (Wilbur Smith Associates, 2003).

The uncontrolled runoff from elevated parcels to the west of the roadway has contributed in large part to the deterioration of this two-lane roadway. The large volume of stormwater has had detrimental effects on the adjacent streambeds in Rock Creek Park, which is owned by NPS and located immediately east of Oregon Avenue over its entire length. The need for a total solution involving improvements on NPS property has resulted in the NPS serving as a Cooperating Agency in the development of the EA.

S.4 ALTERNATIVES

Alternatives development consisted of a multi-step collaborative process with the study team, stakeholders, and the public to develop a range of alternatives that incorporate elements to address each of the project's needs: roadway improvements, stormwater management, and bicyclist and pedestrian facilities. The No Action Alternative and three Candidate Build Alternatives are presented in this Final EA. The Preferred Alternative is also identified.

S.4.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Under the No Action Alternative (Alternative 1), the improvements to Oregon Avenue would include short-term minor restoration activities (safety and routine maintenance) that maintain the continuing operation of the existing roadway.

While the No Action Alternative does not meet the purpose and need of the project, it provides a basis for comparing the environmental consequences of the Candidate Build Alternatives.

S.4.2 PROPOSED ACTION

Along its 1.7-mile length, Oregon Avenue varies in terms of traffic volumes, function, and character of roadway; therefore, in order to facilitate the development of end-to-end alternatives and the identification of impacts, the corridor was divided into two sections:

- Southern Section - Military Road to Nebraska Avenue
- Northern Section - Nebraska Avenue to Western Avenue

In addition, the width of the DDOT-owned right-of-way ranges from 33 to 90 feet along Oregon Avenue, with an average width of 75 feet along most of the corridor. The narrowest width (33 feet) is located in the southern section of the corridor, adjacent to St. John's High School College.

As further described below, multiple cross-sections were proposed for some of the build alternatives. This approach allowed for the development of end-to-end alternatives that best satisfied the project's purpose and need while at the same time fulfilling the requirement to stay within the existing DDOT right-of-way.

No major disruption to the surrounding topography is expected with the proposed action because the proposed improvements follow the existing roadway alignment. Improvements remain

within DDOT-owned right-of-way with two minor exceptions. There is one small section of the existing roadway where approximately 100 feet of the northbound lane lies within NPS-owned property (see Station 114 – 115 on page B-4 in Appendix B). This encroachment is the result of inconsistencies in survey bounds that existed when the current Oregon Avenue was constructed. This EA will cover the appropriate action needed from NPS to correct this inconsistency, which may include an easement, land transfer, or permit to DDOT. The second minor encroachment would occur under Alternatives 3 and 4 and is located at the base of a private driveway (see Station 154 on page B-83 in Appendix B). The continuity of drainage facilities would require an easement to cross this 63-foot stretch of private driveway. With modifications to Alternative 3 for the Preferred Alternative, the need for this encroachment on the private driveway was eliminated. Notwithstanding these exceptions and the placement of silt fences and restoration of outfalls during construction, there are no other physical components which would require use of lands within Rock Creek Park or on private property for any of the alternatives.

Prior to any land disturbance activities, tree protection measures, protective fencing, and other best management practices (BMPs) would be used. The existing roadway infrastructure within the project area would be removed including pavement, curb and gutter, inadequate stormwater drainage systems, as well as debris and trees that present a hazard. DDOT would include in the contractor specifications that removed materials be disposed of or recycled in accordance with the DDOT *Standard Specifications for Highways and Structures* (2009). Additional measures for the protection of cultural resources (e.g., stone boundary markers along the park boundary) will also be incorporated in the contractor specifications.

The proposed action would be designed to accommodate widths and weights of utility maintenance vehicles and emergency response vehicles. Grading and placement of clean fill would be necessary to prepare a stable bed for the roadway and to provide adequate drainage conveyance. Existing profile elevations would be raised or lowered in steeper areas to remove blind crests and improve sight distances along the roadway.

Inadequate stormwater outfalls and culverts would be reconstructed and resized to appropriately convey water, including but not limited to the Pinehurst Run culvert. Coping and retaining walls would be incorporated where feasible to minimize the limits of disturbance and footprint of the roadway. Retaining walls would be designed to complement the setting of Rock Creek Park and the surrounding area as well as incorporate construction methods that minimize intrusion into the Park property

Following construction, additional restoration along Oregon Avenue would include replanting of native tree species and vegetation. Species would be selected in consideration of the natural and cultural landscapes, as well as the aesthetics of Rock Creek Park.

The reconstructed roadway would be properly signed and marked in accordance with standards of the American Association of State Highway and Transportation Officials (AASHTO), DDOT, and the *Manual on Uniform Traffic Control Devices* (MUTCD). Features such as signage and lighting would be incorporated into more detailed design plans.

PREFERRED ALTERNATIVE/ALTERNATIVE 3 MODIFIED

Following the EA comment period and incorporating comments from the public, a modified version of Alternative 3 that allowed reduction in footprint of Alternative 3 was selected as the Preferred Alternative for the rehabilitation of Oregon Avenue. **The Preferred Alternative/Alternative 3 Modified** consists of two cross-section widths. In the Southern Section between Military Road and Nebraska Avenue, where most of the existing DDOT-owned right-of-way is only 33-feet wide, Oregon Avenue would be reconstructed, with two 10-foot travel lanes with curb and gutter and a 5-foot sidewalk on the west side and a curb on the east.

In the Northern Section, or north of Nebraska Avenue to Western Avenue, the Preferred Alternative would transition to a cross-section width of 33 feet and would consist of two 10-foot travel lanes with curb and gutter, a 4-foot grass strip/tree buffer and a 6-foot sidewalk for pedestrians on the west side, and curbing only on the east side. DDOT will work with the community in the design stages to ensure that sidewalk materials and treatments fit with the context of the project area.

Runoff will be captured at several inlets in a closed, underground system on the west side of the roadway.

Some of the sections of roadway will require retaining walls in order to stay within the right-of-way and preserve the use of the adjacent homes' front yards. Alternative 3 was modified to reduce the typical cross-section for the Northern Section of the roadway in response to public comments regarding impacts on adjacent property owners and tree removal; dedicated bike lanes or shared bike paths are not included in the Preferred Alternative. To the extent possible to maintain the minimum required cross-section, DDOT will rehabilitate the road in the existing corridor and minimize the expansion into areas of DDOT right-of-way currently maintained by adjacent property owners as landscaped lawns. Any landscaped areas that are impacted during construction will be landscaped commensurate with existing landscaping. The Preferred Alternative will also minimize the construction of retaining walls on the west side of the roadway which, where required, will be designed in a context- sensitive manner to ensure that these walls fit the historic and park-like setting of the area. As the design proceeds, DDOT will evaluate reduction in lengths and widths of retaining walls where possible. The alternative also reduces the number of trees that would be impacted along the property boundary with Rock Creek Park on the east side of the road. As the design proceeds, DDOT will further investigate opportunities to reduce impacts to mature trees. Further, although the Preferred Alternative does not include dedicated or shared bicycle facilities, the alternative is consistent with the DC Bicycle Master Plan because it would improve safety along the existing bicycle route by providing a consistent roadway width and stabilizing the edge of pavement. During design DDOT will further investigate sections of the roadway where complete reconstruction is not required and moderate rehabilitation can be used to ensure reduction in impacts.

The Preferred Alternative will incorporate several stormwater management and drainage improvements. Existing roadway ponding would be controlled by the installation of an underground drainage system serving the full length of the project. The drainage system will

include inlets connected to existing storm sewers. No new culverts are proposed. The drainage system would incorporate features to prevent erosive sheet flow of waters into Rock Creek Park. The existing crossing of Pinehurst Run would be replaced with a bottomless arch culvert or short bridge. Both crossing options would provide a natural stream bottom and adequate capacity to pass periodic flood waters.

The total estimated construction cost for Alternative 3 is $27.2 million.

CANDIDATE BUILD ALTERNATIVES

CANDIDATE BUILD ALTERNATIVE 2

Candidate Build Alternative 2 is the minimum width alternative that meets the purpose and need of the project. It consists of two 10-foot travel lanes with curb and gutter and a 5-foot sidewalk on the west side and a curb on the east. This alternative has a cross-section width of approximately 27 feet and no additional right-of-way would be required for the entire length of the roadway. Some of the sections of roadway in the narrower Southern Section will, however, require retaining walls estimated at 2 to 5 feet high in order to stay within the right-of-way.

Where possible, both travel lanes would slope from east to west so that all roadway runoff would be directed to the curb and gutter on the west side of the roadway. Stormwater management would be accomplished through a closed, underground system, which would collect and treat the runoff and direct it to the existing outfall locations along the corridor.

The total estimated construction cost for Candidate Build Alternative 2 is $23.4 million.

CANDIDATE BUILD ALTERNATIVE 3

Candidate Build Alternative 3 consists of two cross-sections. In the Southern Section between Military Road and Nebraska Avenue, where most of the existing DDOT-owned right-of-way is only 33-feet wide, Oregon Avenue would be reconstructed similar to Candidate Build Alternative 2, with two 10-foot travel lanes with curb and gutter and a 5-foot sidewalk on the west side and a curb on the east.

In the Northern Section, or north of Nebraska Avenue to Western Avenue, Candidate Build Alternative 3 would transition to a cross-section width of approximately 43 feet and would consist of two 10-foot travel lanes with a 2-foot shoulder, a 10-foot vegetated swale and a 10-foot shared-use path for pedestrians and bicyclists on the west side, and mountable curbing only on the east side.

To match the Southern Section, where possible, both travel lanes would be reverse crowned from east to west. But whereas the runoff will be captured in a closed, underground system in the Southern Section, the roadway runoff in the Northern Section would also incorporate a vegetated swale on the west side of the roadway.

Some of the sections of roadway will require retaining walls in order to stay within the right-of-way and preserve the use of the adjacent homes' front yards. These walls are estimated at 2 to 5 feet high in the Southern Section and up to 8 feet high in the Northern Section of the project.

The total estimated construction cost for Alternative 3 is $30.5 million.

CANDIDATE BUILD ALTERNATIVE 4

Candidate Build Alternative 4 also consists of two cross-section widths. In the Southern Section, where the existing right-of-way is 33 feet, Oregon Avenue would be reconstructed similar to Candidate Build Alternative 2, with two 10-foot travel lanes with curb and gutter and a 5-foot sidewalk on the west side and a curb on the east.

In the Northern Section, or north of Nebraska Avenue to Western Avenue, Alternative 4 would have a cross-section width of 44 feet and include two 10-foot travel lanes, a 4-foot bike lane, 10-foot vegetated swale, and 5-foot sidewalk on the west side, and a 4-foot bike lane and mountable curbing on the east side.

Similar to the Southern Section, both travel lanes would slope from east to west so that all roadway runoff would be directed to the west side of the roadway. Runoff will be captured in a closed, underground system in the Southern Section. The roadway runoff in the Northern Section would be directed to a vegetated swale on the west side of the roadway.

Some of the sections of roadway will require retaining walls in order to stay within the right-of-way and preserve the use of the adjacent homes' front yards. These walls are estimated at 2 to 5 feet high in the Southern Section and up to 8 feet high in the Northern Section of the project.

The total estimated construction cost for Alternative 4 is $35.3 million.

S.5 AFFECTED ENVIRONMENT

Environmental resources were identified and mapped within the project corridor, including natural, cultural, and socioeconomic resources (see **Figure S-1**). In addition, the existing conditions in the Oregon Avenue project corridor were assessed in terms of the condition of the transportation network, air and noise quality, and energy conservation.

Key natural resources within the project corridor include Pinehurst Run, a perennial stream with a mapped 100-year floodplain, and Rock Creek Park, the only large area of mostly contiguous deciduous forest habitat in the District metropolitan area. A tree survey was conducted as part of this project to determine the number, size, and health (condition) of existing trees along the roadway corridor. The inventory was used to determine the potential impact (direct and indirect) to trees adjacent to the roadway and will help determine the level of replacements required to mitigate any loss.

In terms of cultural resources, archeological sites, areas of archeological potential, historic structures, and cultural landscapes are located in the Oregon Avenue project area. The Rock Creek Park Historic District (RCPHD) is listed on the National Register of Historic Places (NRHP) and is immediately adjacent to the Oregon Avenue project corridor. Several contributing elements of the RCPHD are located within the APE, including elements of the circulation network, culverts, and boundary monuments. Water control features identified along Oregon Avenue include culverts, headwalls, and access manholes that may date to the development of the roadway. Residential and institutional facilities on the west side

Figure S-1. Existing Environmental Resources in Project Area

of the roadway, including the NRHP-eligible Knoll House at Knollwood, are also located within the APE. The NPS is currently drafting a Historic Trails Cultural Landscape Report (CLR) for Rock Creek Park that documents the multi-use trail (Bike Trail #1) just inside the park along Oregon Avenue among components of the park's cultural landscape.

While Rock Creek Park, designated Park/Recreation/Open Space land use, dominates the entire eastern side of the roadway, land use on the western side is predominantly Low and Medium Density Residential, interspersed with two Institutional land areas (St. John's College High School and Knollwood military retirement facility) and one NPS Park/Recreation/Open Space near Pinehurst Run. Oregon Avenue mainly provides access to these residences and facilities along the roadway. Daily commuters also use one section of Oregon Avenue as a "cut through" route: from Nebraska Avenue to Oregon Avenue to Wise Road (through Rock Creek Park). Existing traffic volumes suggest that there is adequate capacity and no need for capacity improvements on Oregon Avenue.

With the exception of a very short stretch of sidewalk north of Moreland Place, Oregon Avenue currently lacks amenities to serve pedestrians and bicycles. Other than crosswalks and stop signs connecting Tennyson Street to Rock Creek Park, there are no internal linkages or crosswalks for pedestrians to the parks, schools, and residential areas adjacent to Oregon Avenue, nor are there pedestrian connections to serve those who ride the Metrobus E-6 route, which serves seven bus stops in the northern portion of the roadway.

The reconstruction of Oregon Avenue is included in the Transportation Improvement Program (TIP) for the Metropolitan Washington Region (Fiscal Years 2011 to 2016), and the scope of the project is consistent with the regional analysis included in the TIP. The National Capital Region *2010 Constrained Long-Range Transportation Plan* (CLRP) and the 2011-2016 TIP have been determined by the Metropolitan Washington Council of Governments (MWCOG) to conform to the intent of the State Implementation Plan (SIP). The Oregon Avenue project is not a project of air quality concern and existing noise levels do not exceed federal noise abatement criteria.

S.6 SUMMARY OF IMPACTS

The following briefly describes the principal environmental effects of the proposed project. **Table S-1**, located at the end of this summary, is a matrix showing the comparative effects of the alternatives. Based on the evaluation included in the EA and this Final EA, as well as comments received from regulatory agencies and the public, it is anticipated that the project would not have a significant impact on the environment either in context or intensity as defined by the Council on Environmental Quality (CEQ). Therefore a Finding of No Significant Impact (FONSI) would be appropriate for the project.

This Final EA document complies, to the extent possible, with all applicable environmental laws and Executive Orders, or provides reasonable assurance that their requirements can be met.

S.6.1 NATURAL RESOURCES

Construction of each of build alternatives would disturb land areas beyond the existing roadway infrastructure. The areas of disturbance range from 1.4 acres for the narrowest

alternative (Candidate Build Alternative 2) to approximately 3.4 acres for Candidate Build Alternatives 3 and 4. For the Preferred Alternative, Candidate Build Alternative 3 was modified to reduce the area of disturbance by about three-quarters of an acre to approximately 2.6 additional acres that have not been previously graded for facility construction. The majority of land disturbance will occur within a narrow band along the western edge of the existing roadway – areas that have been previously disturbed during construction of the original roadway and adjacent residences. To minimize off-site impacts, Erosion and Sedimentation Control and Stormwater Management Plans will be developed in accordance with DC Municipal Regulations.

Each of the build alternatives is anticipated to result in improvements to local water quality by incorporating effective stormwater management systems. The proposed systems will reduce the volume and velocity of stormwater runoff entering receiving surface waters by increasing retention and infiltration. The improved stormwater management systems will at least offset all additional runoff generated through increased impervious areas created by the alternatives.

Primary impacts to Pinehurst Run and other stream crossings will be limited to short-term construction activities associated with the replacement or reconstruction of four existing culverts and installation of sand seepage berms. The proposed alternatives would be 32 to 40 feet wide, or 5 to 13 feet wider than the existing 27-foot crossing over Pinehurst Run. An additional 30 feet of disturbance upstream and downstream (combined) is expected to construct the new crossing.

Minor encroachments on the Pinehurst Run floodplain are anticipated with the build alternatives. Encroachments occur immediately adjacent to the existing roadway and involve between 2,508 square feet (0.06 acres) for Candidate Build Alternative 2 to 6,760 square feet (0.16 acres) for Candidate Build Alternative 4 – the widest alternative. Candidate Build Alternative 3 was modified in the development of the Preferred Alternative to reduce the amount of encroachment in the Pinehurst Run floodplain to 5,081 square feet (0.12 acres). None of the encroachments are expected to cause any increase in backwater elevations. An overall reduction in backwater flooding is expected with the increased capacity provided by the new crossing.

No wetlands, navigable waters, or wild or scenic rivers are located in the immediate project area.

Consultation with the US Fish and Wildlife Service and the National Park Service indicate that there are no threatened or endangered species in the immediate project area and no further consultation under Section 7 of the Endangered Species Act is required.

Construction activities associated with replacing the roadway bed may impact some large trees immediately adjacent to the roadway. Root systems from larger trees are expected to have spread beneath the existing roadway; therefore, damage to these root systems during construction could result in loss of the trees. It was estimated that between 62 and 85 mature trees (specimens with diameters at breast height greater than 6 inches) could have been impacted under alternatives 2, 3, and 4. Modifications to Alternative 3 reduced the number of

trees to be impacted from 85 to 65 trees, thus reducing the impacts from implementation of the Preferred Alternative on vegetation and adjacent property owners.

S.6.2 Cultural and Paleontological Resources

Pursuant to the requirements of the Section 106 of the National Historic Preservation Act (NHPA), the District of Columbia State Historic Preservation Office (DC SHPO) has concurred with FHWA and DDOT in a letter dated July 15, 2011, that the Oregon Avenue Reconstruction Project will have "no adverse effect" on historic properties under Section 106 of the NHPA. In order to ensure this determination of no adverse effect, the following conditions have to be implemented:

1. DC SHPO will be provided an opportunity to review and comment on the design of the replacement culvert over Pinehurst Branch in order to ensure it is compatible with its setting adjacent to the Rock Creek Park Historic District. The "Arch Culvert" or "Bridge" options appear to be more appropriate for this setting than the "Box Culvert";
2. DC SHPO will also be provided an opportunity to review and comment on any alterations proposed for the stone and concrete outfall south of Bingham Drive if it is determined to be a contributing element of the Rock Creek Park Historic District (Subsequent revisions to the design of stormwater management system upgrades eliminated the need to alter this outfall). The NPS indicated that the stone and concrete outfall south of Bingham Drive is considered a contributing element to the RCPHD. Because no impacts will occur to this or any culvert in Rock Creek Park, the second condition above will not be implemented.)
3. DDOT shall ensure that the stone boundary monuments that mark the border of Rock Creek Park will not be altered or damaged in any way; and
4. In consultation with the DC SHPO, DDOT shall conduct a Phase IA archaeological survey including geoarchaeological consultation if the LOD [Limits of Disturbance] to determine if any locations warrant testing for the presence of potentially significant archaeological resources. (Appendix F – Maloney comment).

Conditions 1 and 4 will be implemented during the design phase and Condition 3 will be implemented in the construction phase..

S.6.3 Socioeconomic Resources

Candidate Build Alternatives 2, 3, and 4, and the Preferred Alternative, are expected to have no effect on land use and zoning within the project corridor.

The project will not result in any impacts to low-income or minority populations.

Alternatives have been developed to include context-sensitive design features that maintain the bucolic or rural-like feel of the existing roadway.

Candidate Build Alternatives 2, 3, and 4, and the Preferred Alternative, will have no impact on local community resources. Improved travelways should prove beneficial to local emergency service providers.

S.6.4 TRANSPORTATION

The long-term impacts of the build alternatives will include improvements to travel safety of all modes: automobile, bus, bicycle, and pedestrian. Short-term detours will be required during the 3 to 9 month construction periods for the various project sections. Maintenance of traffic and detour plans will be developed to alleviate impacts to local travelers.

S.6.5 AIR QUALITY

The proposed action will not result in any change in roadway capacity or adjacent land uses; therefore, there will be no measurable change in air quality parameters. Short-term impacts associated with construction will be mitigated through implementation of DDOT standard specifications.

S.6.6 NOISE

As noted above, the proposed build alternatives will not result in any change in roadway capacity or any major change in its horizontal or vertical alignment. Therefore, no appreciable impacts to noise and vibration would occur from implementation of the proposed action.

S.6.7 HAZARDOUS WASTE AND MATERIALS

Based on a review of available data and site inspections, no evidence of recognized environmental concerns (hazardous material sites) were identified in the project area.

S.6.8 INDIRECT AND CUMULATIVE EFFECTS

There will be no induced or secondary effects caused by the Candidate Build alternatives, or the Preferred Alternative. The proposed project would serve traffic generated by development on adjoining lands and beyond the limits of the project, but it would not cause any further such development. Moreover, the project is consistent with local comprehensive planning regarding land use goals in the surrounding area and transportation in the project corridor.

Despite the dramatic changes in the landscape that have occurred over time due to human settlement and development in the surrounding area, the intensity of the incremental or cumulative impacts of the project are considered small when reviewed in the context of impacts from other past, present, and reasonably foreseeable future actions and would not rise to a level that would cause significant cumulative impacts.

S.6.9 SECTION 4(f) EVALUATION

The proposed action will not require the use of any new Section 4(f) resource.

S.7 AGENCY COORDINATION AND PUBLIC INVOLVEMENT

As part of the planning process for the Oregon Avenue Final EA, DDOT conducted a comprehensive agency coordination program. This coordination included project scoping, consultation with resource agencies in accordance with Section 7 of the Endangered Species Act (ESA), consultation with the DC SHPO and NPS in accordance with Section 106 of the National Historic Preservation Act (NHPA), individual meetings, and a public hearing following completion of the EA. DDOT and FHWA also conducted a series of regularly scheduled meetings with the NPS and the District Department of the Environment (DDOE) to ensure

continuous input from these two partner agencies. Each agency provided extensive information on existing conditions within the project area and helped coordinate the roadway improvement with on-going improvements in Rock Creek Park – most notably stormwater management and stream restoration activities.

Throughout the study DDOT actively sought public input. Numerous methods were employed to solicit input including two public information meetings, a project website and a formal public hearing following publication of the EA.

Input from the participating agencies and the general public were instrumental in the development and refinement of project alternatives. After consideration of the agency and public comments received during the comment period for the EA, a modified version of Candidate Build Alternative 3 was selected as the Preferred Alternative. Based on the comments the typical section for the northern segment of the original alternative was reduced in width by replacing the 10-foot grass swale with a 4-foot planting strip and incorporating a 6-foot wide sidewalk in place of the 10-foot wide shared-use path.

Table S-1. Summary of Impacts

	ALT 1 NO ACTION	BUILD ALTERNATIVES			
		ALT 2	ALT 3	PREFERRED/ ALT 3 MODIFIED	ALT 4
Additional Area of Disturbance (acres)	0	1.37	3.36	2.62	3.40
Pinehurst Run - Limits of Disturbance (linear feet)	0	57	73	74	74
Improvements to Stormwater Management	No	Yes	Yes	Yes	Yes
Pinehurst Run - Floodplain Encroachments (acres)	0	0.06	0.14	0.12	0.16
Wetlands Displaced (acres)	0	0	0	0	0
Threatened and Endangered Species	None	None	None	None	None
Loss of Mature Trees	0	62	85	65	85
Archeological Resource Impacts	None	None, with conditions	None, with conditions	None, with conditions	None, with conditions
Historic Structure Impacts	None	Minor short-term	Minor short-term	Minor short-term	Minor short-term
Cultural Landscapes	None	Minor short-term	Minor short-term	Minor short-term	Minor short-term
Land Use and Zoning	No Change	No Change	No Change	No Change	No Change
Pedestrian Improvements	No	Yes	Yes	Yes	Yes
Bicyclist Improvements	No	No	Yes	No	Yes
Air Quality Impacts	None	None	None	None	None
Noise Impacts	None	None	None	None	None
Hazardous Materials	None	None	None	None	None
Environmental Justice Populations Affected	0	0	0	0	0
Visual Intrusions	No Change	Minor	Minor	Minor	Minor
Construction Costs (millions)	N/A	$23.4	$30.5	$27.2	$35.3