

Appendix C:

Mitigation Summary

Environmental Resource	Proposed Mitigation
Transportation	<ul style="list-style-type: none"> ▪ The proposed project would require ongoing coordination with DDOT and WMATA to properly prepare and implement a feasible Maintenance of Traffic (MOT) plan with the least amount of impacts. ▪ Traffic Control Plans (TCP) would be developed during the design phase and implemented during periods of construction, as needed.
Air Quality	<ul style="list-style-type: none"> ▪ Construction areas may be watered during dry periods. ▪ Trucks hauling excavated materials would be covered. ▪ Idling of construction vehicles would be limited. ▪ Vehicles and equipment would be hosed down with water.
Topography	<ul style="list-style-type: none"> ▪ Proper slope and soil stabilization techniques would be used, in compliance with DOEE regulations, which require the development and implementation of a Soil Erosion and Sediment Control Plan. ▪ Existing drainage ditches along the trail would be restored. ▪ Slopes disturbed by construction would be re-contoured to match the existing slopes. ▪ Step logs and railroad ties needed to direct drainage and form slopes would be restored to existing or better conditions. ▪ Revegetation would include the use of NPS-approved seed mix.
Soils	<ul style="list-style-type: none"> ▪ Construction contracts would be required to include provisions for the handling and disposal of contaminated materials, if encountered. ▪ Construction documents, required for construction permits within the District, must include measures to control dust, protect soil from precipitation and erosion, protect workers from exposure to soil contaminants, and manage stormwater. ▪ Short-term erosion transport would be controlled through the implementation of an approved Soil Erosion and Sediment Control Plan. ▪ Geotextile, mulch, and wooden mats would be placed along the HE access paths within the floodplain during construction to minimize soil disturbance. ▪ Best management practices (BMPs), including DOEE-approved erosion and sediment control measures such as silt fencing and tree protection fencing, would be utilized. ▪ Contractors would dispose of contaminated soil encountered during construction in accordance with federal and District laws and regulations. ▪ Post construction, soils would be stabilized in various ways including re-vegetating slopes using NPS approved seed mix.

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	<ul style="list-style-type: none"> ▪ A combination of geocells and an imbricated rock channel would be utilized to armor the slopes around the F-117 Stormwater Outfall to help protect from future erosion.
Water Quality	<ul style="list-style-type: none"> ▪ Temporary turbidity and erosion associated with construction would be minimized through standard Soil Erosion and Sediment Control measures such as silt fences, stream diversion and a strict sequence of construction. ▪ BMPs would be used and coordinated with NPS and USACE. ▪ Stormwater, sediment, and erosion control measures are conditions that would need to be met to obtain individual construction permits.
Wetlands and Waters of the U.S.	<ul style="list-style-type: none"> ▪ Impacts would occur within the delineated LOD, which was modified to avoid wetlands and Waters of the U.S., where possible. ▪ CWA permits obtained from USACE and DOEE would prescribe actions that must be carried out to mitigate impacts to Soapstone Creek, its tributaries, and wetlands, if required. ▪ The effects of the stormwater outfall rehabilitation and asset protection would restore the stream to improved conditions relative to existing conditions. ▪ Staging and storage areas would be placed outside of wetland boundaries. ▪ The use of HE access paths would circumscribe some potential impacts and allow minor adjustment in the field to avoid resources. ▪ Most of the manhole repairs would not require vehicular access. ▪ Existing trails and designated walking paths would allow the transport of materials into the site, where possible, thus avoiding tree clearing for larger HE access paths. ▪ HE access paths would be covered with geotextile, mulch, wooden mats, and super silt fencing along access paths. ▪ Protective matting would be used for access across smaller waterways. ▪ All storage and staging areas would be removed and restored to pre-construction (or better) conditions. ▪ Temporary bypass pumping equipment for ensuring clear water flow around dry stream work areas (including coffer dams, clear water diversion pumps, dewatering pumps with filter bags) would be used daily. ▪ Riverine wetland disturbance during temporary sewer bypass pumping would be avoided. ▪ Erosion and sediment control practices would be utilized.

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	<ul style="list-style-type: none"> ▪ Fill used in outfall repair, asset protection, and streambank stabilization would be minimized to only what is necessary to maintain appropriate flow velocities and manage storm surges. ▪ Site-specific streambank stabilization elements (including live stakes, permanent seeding, imbricated rock walls, and adjustment of eroding streambank slopes) would be installed to provide functional uplift to Soapstone Creek and its tributaries by reducing soil loss and scour protection. ▪ Select stream channel material and importation of natural materials that closely match the existing visual elements and augment streambed macroinvertebrate habitat would be reused. ▪ Post-construction plantings including species native to Rock Creek Park would be installed to ensure contiguous habitat and suppression of invasive species. ▪ Stormwater management along Albemarle Street NW and along the right-of-way to reduce erosion and stormwater impacts in the Park would be implemented.
Hydrology	<ul style="list-style-type: none"> ▪ BMPs would be employed to reduce water resource impacts and would be used and coordinated with NPS and USACE.
Floodplains	<ul style="list-style-type: none"> ▪ Tree removal within the floodplain would be minimized to the extent possible. All trees to be cut would be field approved by NPS in consultation with DC Water. ▪ Post-construction plantings would be installed including species native to Rock Creek Park to ensure contiguous habitat and suppression of invasive species. ▪ Equipment and materials would be stored outside the floodplain to the extent practical. ▪ Floodplain fill for construction access would be removed upon construction completion. ▪ Fill used in outfall repair, asset protection, and streambank stabilization would be minimized to only what is necessary to maintain appropriate flow velocities and manage storm surges. ▪ Site-specific streambank stabilization elements (including live stakes, permanent seeding, imbricated rock walls, and adjustment of eroding streambank slopes) would be installed to provide functional uplift to Soapstone Creek and its tributaries by reducing soil loss and scour protection.
Vegetation	<ul style="list-style-type: none"> ▪ All trees to be cut on NPS property would be field approved by NPS in consultation with DC Water.

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	<ul style="list-style-type: none"> ▪ Mature trees would be given special consideration and would be avoided to the extent possible. DC Water would provide incentives for construction contractors to reduce tree removal. ▪ Geotextile, mulch, and wooden mats would be applied on access paths to protect the root zones of the trees and other woody vegetation. ▪ Super silt fence would be used to delineate all HE access paths. ▪ All wheeled machinery would be cleaned prior to start of construction and following completion of construction to reduce the risk of seed cross contamination and spread of non-native invasive species. ▪ Work areas would be clearly defined and fenced to keep workers and equipment from exiting the defined limits of work and impacting adjacent retained forest during construction. ▪ For trees removed on NPS property, DC Water would pay a one-time, fee-in-lieu to NPS or NPS's designee. This fee-in-lieu would be used by NPS for onsite long-term protection as well as offsite plantings and long-term protection. ▪ For trees removed on DDOT property, a Tree Fund would be paid \$35 per inch of circumference for each special tree removed, in accordance with DDOT regulations. ▪ Post-construction plantings would be installed including species native to Rock Creek Park to ensure contiguous habitat and suppression of invasive species.
Wildlife and Wildlife Habitat	<ul style="list-style-type: none"> ▪ For trees removed on NPS property, DC Water would pay a one-time, fee-in-lieu to NPS or NPS's designee. This fee-in-lieu would be used by NPS for onsite long-term protection as well as offsite plantings and long-term protection. ▪ For trees removed on DDOT property, a Tree Fund would be paid \$35 per inch of circumference for each special tree removed, in accordance with DDOT regulations. ▪ Geotextile, mulch, and wooden mats along all paths to prevent soil and root compaction would be used to protect the potential habitat. ▪ All wheeled machinery would be routinely cleaned during construction to reduce the risk of seed cross contamination and spread of non-native invasive species. ▪ Select stream channel material would be re-used, and natural materials that closely match the existing visual elements and augment streambed macroinvertebrate habitat would be imported.

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Rare, Threatened, and Endangered Species	<ul style="list-style-type: none"> ▪ DC Water and NPS must check with bat researchers on the status of the northern long-eared bat within the park before any trees are removed during the active season from April 1st to October 31st. ▪ Geotextile, mulch, and wooden mats would be used along all paths to prevent soil and root compaction and to protect the potential habitat. ▪ All wheeled machinery would be routinely cleaned during construction to reduce the risk of seed cross contamination and spread of non-native invasive species.
Cultural Resources	<ul style="list-style-type: none"> ▪ Impacts to the character-defining vegetation within the Rock Creek Park Historic District and the Rock Creek Park Historic Trails Cultural Landscape would be mitigated by tree replacement. ▪ For trees removed on NPS property, DC Water would pay a one-time, fee-in-lieu to NPS or NPS's designee. This fee-in-lieu would be used by NPS for onsite long-term protection as well as offsite plantings and long-term protection. ▪ All wheeled machinery would be cleaned prior to start of construction as well as completion of construction to reduce the risk of seed cross contamination and spread of non-native invasive species. ▪ At asset protection sites, embankments would be tied back into existing grade, natural materials would be used, and disturbed banks would be revegetated to return the stream to a more natural appearance. ▪ An MOA between NPS and the DC HPO that identifies mitigation to document the changing cultural landscape would be executed.
Visitor Use and Experience	<ul style="list-style-type: none"> ▪ Signage would be placed informing the public of general construction information including duration, closings, and hazards. ▪ To ensure public safety, barricades and/or other control measures would be installed to keep the public out of the active construction site. ▪ Geotextile, mulch, and wooden mats would be applied on access paths to protect the root zones of the trees and other woody vegetation and the existing pedestrian trails. ▪ Soapstone Valley Park would be closed to the public during construction, and portions of the park would remain closed for up to 2 years post-construction to allow for post-construction restoration. The public paths and walking trails would be reopened following construction. ▪ Impacted trails, paths, sidewalks, and roadways would be restored to full operational status prior to Park reopening. ▪ Noise impacts during construction would be mitigated by measures such as enclosed bypass pumps and other techniques, as needed.