FINDING OF NO SIGNIFICANT IMPACT

RIVERRENEW: AN INFRASTRUCTURE INITIATIVE TO REMEDIATE ALEXANDRIA'S COMBINED SEWER SYSTEM-ENVIRONMENTAL ASSESSMENT

George Washington Memorial Parkway, Virginia

Alexandria Renew Enterprises (AlexRenew), in cooperation with the National Park Service (NPS), prepared an Environmental Assessment (EA) to examine alternative actions and environmental impacts associated with the proposed RiverRenew infrastructure initiative in the City of Alexandria, that includes portions of Jones Point Park, George Washington Memorial Parkway (GWMP), which are administrative units of the NPS. In addition, the study area also includes certain portions of the Bed of the Potomac River, use of which the NPS authorizes through permits issued to protect the proprietary interests of the Federal Government. RiverRenew is designed to substantially reduce discharges of sewage mixed with rainwater from Alexandria's combined sewer system to the Potomac River, Hooffs Run, and Hunting Creek.

Like many older cities in the United States, Alexandria, Virginia, is served by two types of sewer systems, a separate sewer system and a combined sewer system. In separate systems, there are separate pipes for sewage and stormwater. In a combined sewer system, a single pipe carries both sewage and stormwater. During dry weather, the combined sewer system conveys sewage to the AlexRenew Water Resource Recovery Facility (WRRF) for treatment and discharge. During rain events, the capacity of the combined sewer system may be exceeded, which results in discharges to Alexandria's waterways via four permitted outfalls (Outfalls 001-004). These outfalls are operated in accordance with a discharge permit issued by the Virginia Department of Environmental Quality (VDEQ) – Virginia Pollutant Discharge Elimination System (VPDES) Permit No. VA0087068.

The purposes of taking action are: 1) to reduce combined sewer discharges that contribute to water quality impairment of the surrounding water bodies and ultimately the Chesapeake Bay; 2) to mitigate sewer flooding and basement backups along the Commonwealth Interceptor Sewer and Holmes Run Trunk Sewer; and 3) to comply with the Commonwealth of Virginia's 2017 Legislation, which requires that Alexandria's existing combined sewer outfalls be brought into compliance with Virginia law by July 1, 2025. Currently, an estimated 140 million gallons of combined sewage are discharged annually to Alexandria's waterways. These contribute to VDEQ's listing of the Potomac River, Hooffs Run, and Hunting Creek embayment as impaired under the 2016 305(b)/303(d) Water Quality Assessment Integrated Report. "Impaired waters" is a term used by VDEQ to define waters that do not meet state-designated water quality standards. Additionally, deficiencies in the current sewer system have contributed to a history of flooding and sewer backups in portions of Alexandria during heavy rain events.

The EA was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), the regulations of the Council on Environmental Quality for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and NPS Director's Order 12, Conservation Planning, Environmental Impact Analysis, and Decision-making and the accompanying NPS NEPA Handbook. Compliance with section 106 of the National Historic Preservation Act of 1966, as amended, and with Section 7 of the Endangered Species Act was conducted separately but concurrently with the NEPA process. The statements and conclusions reached in this finding of no significant impact (FONSI) are based on documentation and analysis provided in the EA and associated decision file. To the extent necessary, relevant sections of the EA are incorporated by reference.

SELECTED ALTERNATIVE

Based on the analysis presented in the EA, the NPS agreed with AlexRenew's selected alternative (Alternative B) for implementation (as described in pages 29-30 and summarized in Table 2-4 of the EA). Because of the use of NPS property to locate needed infrastructure, the NPS will issue AlexRenew with the required Special Use Permits for construction as well as Use and Occupancy Right-Of-Way permit of Jones Point Park pursuant to 54 U.S.C. 100902, and use and occupancy of the Bed of the Potomac River is authorized by way of a Special Use Permit under 41 Fed Reg 34801.

The EA (Page 8-27) provides a detailed description of the details of the Selected Alternative, however, in general, the project is summarized as follows. The Outfall 001/2 Tunnel will be approximately 11,500 feet in length, beginning at the AlexRenew WRRF and ending at the Outfall 001 Diversion Facility located on the Robinson Terminal North property. The tunnel is anticipated to have a minimum inside diameter of 12-feet and maximum outside diameter of 19-feet and will be located approximately 100-feet to 160-feet below the ground surface and will provide the primary means of storage and conveyance of captured combined sewage from Outfalls 001 and 002. The tunnel will be constructed using a tunnel boring machine (TBM), which is designed to equalize ground pressure while excavating and constructing a permanent concrete tunnel lining. The tunnel will be aligned generally under Church Street from the AlexRenew WRRF to the Outfall 002 Diversion Facility, and then routed under Jones Point Park and the Potomac River to the Outfall 001 Diversion Facility. Approximately 7,000 feet of the tunnel will pass beneath Jones Point Park and the Potomac River. Along the Potomac River, the tunnel is anticipated to be located approximately 50-feet east of the Pierhead Line, which also serves as the boundary between the District of Columbia and Commonwealth of Virginia.

The proposed tunnel will be located approximately 100-feet to 140-feet below the ground surface and will be constructed using a tunnel boring machine (TBM). The TBM is designed to equalize ground pressure while excavating and constructing a permanent concrete tunnel lining.

The Outfall 001 Diversion Facility will be located on the Robinson Terminal North site and within the west bank of the Potomac River. The Robinson Terminal North Diversion Facility would be constructed just east of the intersection of Pendleton and Union Streets. The structures would be located on public property, private Robinson Terminal North (RTN) property and within the bed of the Potomac River. The site would be restored in coordination with NPS, and in conformance with the City of Alexandria Waterfront Plan and would include designs for a public promenade along the Potomac River.

The Outfall 002 Diversion Facility will be located within Jones Point Park, just south of Jones Point Drive and east of South Royal Street, and within the South Royal Street right of way. The Royal Street North Diversion Facility would be constructed just south of Jones Point Drive, which serves as the entrance to Jones Point Park. The anticipated construction staging area would total approximately 1.0 acre, including approximately 0.77 acre within Jones Point Park. The components of Royal Street North Diversion Facility would be the same as the previous option; however, this configuration would require a longer approach channel to the drop shaft.

The gated portion of South Royal Street, south of Jones Point Drive, would be closed during construction; however, a clearway through the construction site would be maintained to allow emergency vehicles to access underneath the Woodrow Wilson Bridge. This option is not anticipated to impact Jones Point Park Drive or to interrupt the traffic circulation procedures associated with the Basilica School.

Following construction, manholes, hatches and other structure access points would be flush with grade. Anticipated above-grade components would include an approximately 3-foot tall retaining wall, new Jones Point Park entrance signage, and an electrical cabinet to serve the ventilation control vault equipment. Site restoration would be coordinated with the NPS.

RATIONALE FOR DECISION

The NPS agreed with AlexRenew that Alternative B fully satisfies the purpose and need of the project with minimal impacts to natural and cultural resources and the human environment. The combination

of selected components described in the EA is anticipated to capture 98 percent of sewer flows, and limit combined sewer discharges to less than four (4) times per year on average, based on the climate period of 2000-2016. The specific components were selected based on input received during the public scoping period in conjunction with design, logistical and schedule considerations. Alternative A would not meet the project's purpose and need as the existing combined sewer system is unable to comply with the 2017 Virginia Law or AlexRenew's VPDES permit.

MITIGATION MEASURES

To help ensure the protection of natural and cultural resources and the quality of the visitor experience, a variety of mitigation measures will be instituted as the actions are taken to implement the Selected Alternative. Although the exact mitigation measures to be implemented will depend upon the final design and approval of plans by relevant agencies, actions that could take place are provided in Appendix A.

FINDING OF NO SIGNIFICANT IMPACT

As documented in Chapter 3 of the EA, the Selected Alternative will result in beneficial and/or minor adverse impacts on water quality, wetlands, visitor use and experience, historic structures and districts, archeological resources, cultural landscapes and human health and safety. No significant adverse impacts were identified that require analysis in an environmental impact statement, as described in the EA. Anticipated impacts that will occur are summarized below by resource.

Water Quality. The Selected Alternative will result in both adverse and beneficial impacts on water quality. Short-term minor adverse impacts to water quality may occur during construction of the Outfall 001 Diversion Facility within portions of the Potomac River and the Outfall 002 Diversion Facility within Jones Point Park. However, these impacts will be mitigated through the use of best management practices (BMPs) and erosion and sediment (E&S) control measures. Under the Selected Alternative, combined sewer discharges will be significantly reduced, which will result in long-term beneficial impacts on water quality within and along NPS properties.

Wetlands. The Selected Alternative will result in both adverse and beneficial impacts on wetlands. Construction activities associated with the Outfall 001 Diversion Facility will result in permanent and temporary impacts to riverine wetlands within the Potomac River. Construction of the Outfall 002 Diversion Facility will result in permanent tidal and nontidal wetland impacts. These impacts and associated restoration plans will be mitigated through permitting processes, which is detailed in the attached Wetland Statement of Finding. Over the long-term, implementation of the Selected Alternative will significantly reduce combined sewer discharges that will improve water quality within the Potomac River and the suitability of riverine and other wetland habitat for aquatic species.

Visitor Use and Experience. The Selected Alternative will result in both adverse and beneficial impacts on visitor use and experience. Temporary adverse impacts will occur during construction activities. Near Jones Point Park, it is anticipated that traffic impacts will be variable, and directly correlated to hauling activities, with moderate impacts to pedestrian and bicycle travel from temporary detours. Once construction is complete, the disturbed areas will be restored to existing conditions and/or in accordance with approved restoration plans. Minimal at- or above-grade infrastructure will be visible. The Selected Alternative will contribute a small amount of long-term adverse cumulative impacts from tree removal within Jones Point Park. However, implementation of the Selected Alternative will include tree planting within the Park and will result in long-term benefits from the reduction of combined sewer discharges and the corresponding water quality improvements that will enhance water-based recreation.

Historic Structures and Districts. The Selected Alternative has the potential to result in adverse impacts on historic structures and districts, but not to the level of an Adverse Effect as defined under Section 106 of the NHPA. To identify potentially impacted historic properties for the NEPA analysis, the NPS and AlexRenew used the Area of Potential Effects (APE) for RiverRenew that was developed in accordance with Section 106 of the National Historic Preservation Act. Portions of the GWMP Historic District and Alexandria Historic District are located within the APE. Impacts to views within Jones Point Park and along

the Potomac River will be minimal due to the small scale of visible infrastructure. Additionally, there are no previously recorded historic structures within the area of the Outfall 001 and Outfall 002 diversion facilities.

Upon completion of construction, AlexRenew will coordinate with NPS, Virginia State Historic Preservation Office (VA SHPO), the City of Alexandria, other impacted landowners and stakeholders, as appropriate, to reestablish the functions and facilities of the impacted park areas, reestablish trees and other vegetation, and ensure that the character-defining features and overall integrity of impacted historic properties are restored. Negligible impacts are anticipated to views to and from surrounding historic properties.

Archeological Resources. The Selected Alternative is not anticipated to adversely impact identified archeological resources; however, the potential exists to impact yet unidentified archeological resources (potentially to the level of an Adverse Effect as defined under Section 106 of the NHPA) . The presence of a prehistoric site east of the proposed Outfall 002 Diversion Facility area presents the potential for archeological resources to be encountered during construction. Prior to construction, AlexRenew will coordinate with the NPS, United States Army Corps of Engineers (USACE), VA SHPO and City of Alexandria, as appropriate, to develop an archeological testing and monitoring program. The Programmatic Agreement included in Appendix D defines the protocol to address and document any unexpected, intact, significant archeological resources encountered during construction.

Cultural Landscapes. The Selected Alternative will result in adverse and beneficial impacts on cultural landscapes (the adverse impacts are not identified as rising to the level of an Adverse Effect as defined under Section 106 of the NHPA). Construction activities will modify landscape features and add new surface elements within Jones Point Park; however, they will not result in permanent changes to land use, circulation, spatial organization or natural systems within Jones Point Park. AlexRenew will consult and coordinate with NPS, VA SHPO, the City of Alexandria, and other stakeholders, as appropriate, to minimize adverse impacts and develop context-sensitive designs. The overall benefit of improved water quality within and along NPS properties is anticipated to outweigh the impacts, particularly with the implementation of proposed mitigation. *Human Health and Safety.* The Selected Alternative will result in both beneficial and adverse impacts on human health and safety. In advance of construction, an environmental exploration and characterization program will be conducted to further identify and analyze the concentration and location of potential environmental concerns (PECs), including impacted soils and groundwater in the areas of proposed ground disturbance. Any impacted soil or groundwater will be treated in accordance with existing federal, state and local regulations, NPS permit conditions and the mitigation measures outlined in Appendix A. Site specific health and safety plans, including personal protective equipment (PPE) requirements for construction workers, will be developed prior to construction to address risks to human health and safety posed by the presence of impacted soil and groundwater, or other PECs, as appropriate. Removing impacted soils and groundwater encountered during construction will result in beneficial impacts to the local environment. Additionally, the Selected Alternative will have long-term beneficial impacts on human health and safety. It will significantly reduce the frequency and volume of combined sewer overflows, which will decrease the amount of bacteria, trash, and other pollutants discharged to the Potomac River and improve the health of the waterways.

Cumulative Impacts. As described in Chapter 3 of the EA, cumulative impacts were determined by combining the impacts of the actions associated with the Selected Alternative with other present and reasonably foreseeable future actions (see Table 3-1 in the EA). Short-term and long-term cumulative impacts of the Selected Alternative were identified. The adverse impacts are minimal, and include short-term impacts during construction, as well as long-term impacts associated with permanent wetland impacts and tree clearing associated with construction activities. Once construction is complete, the cumulative adverse impacts will cease and the resulting reduction in combined sewer discharges and corresponding water quality improvements will contribute an appreciable beneficial long-term cumulative impact.

CONCLUSION

As described above, the Selected Alternative does not constitute an action meeting the criteria that normally requires preparation of an environmental impact statement (EIS). The Selected Alternative will not have a significant effect on the human environment in accordance with Section 102(2)(c) of NEPA.

Based on the foregoing, it has been determined that an EIS is not required for this project and, thus, will not be prepared.

Recommended: Charles Cuvelier — 4/9/2020

Charles Cuvelier
Superintendent
George Washington Memorial Parkway
Region 1 – National Capital Area

Date

Approved: Lisa A Mendelson-Ielmini — April 14, 2020

Lisa A. Mendelson-Ielmini
Acting Director
Region 1 - National Capital Area

Date

Appendix A: Mitigation Measures
Appendix B: Non-Impairment Determination
Appendix C: Public Comment Response
Appendix D: Section 106 Programmatic Agreement
Appendix E: Wetland/Floodplain Statement of Finding

APPENDIX A: MITIGATION MEASURES

Resource Category	Mitigation Measure
Water Quality	• Erosion and sediment (E&S) controls will be employed in areas of ground disturbance. These controls will be reviewed and approved by VDEQ. • Sediment-laden water will be filtered through a state approved method of erosion and sediment treatment or directed into the existing sewer system for treatment at the AlexRenew WRRF. Waters containing one or more constituents at or above current AlexRenew discharge standards will be disposed of by alternative methods, such as onsite wastewater treatment. AlexRenew will outline treatment procedures prior to any onsite treatment in a Water Treatment Plan approved by VDEQ. • Groundwater and/or surface water monitoring will be conducted to ensure that erosion and sediment controls are effective during construction. • Installation of cofferdams will occur behind full-depth turbidity curtains to contain disturbed river bottom sediments during work within the Potomac River. • A post-construction surface water monitoring program will be conducted in accordance with AlexRenew's VPDES permit (VA0087068).
Wetlands	• A 10:1 riverine wetland mitigation ratio will be implemented aimed at improving the overall functions and values of nearby wetlands through the removal of invasive plant species in Jones Point Park. • Additional compensatory mitigation will be determined through future coordination with USACE, VDEQ and NPS.
Visitor Use and Experience	• Trees removed within Jones Point Park will be replaced in kind or with native species at a ratio coordinated with the NPS. • Temporary detours will be established for trails, parks, and sidewalks during construction. • Barriers will be placed around construction areas to limit the visibility of activities and equipment. • In-river construction areas will be clearly defined, and access will be restricted to ensure the safety of visitors engaged in water-based activities. • Landscape restoration of the Outfall 002 Diversion Facility will be developed in coordination with the NPS to minimize visual impacts of the facilities. • Temporary Americans with Disabilities Act (ADA)-compliant pedestrian access routes will be provided for residences, businesses, and other facilities adjacent to construction areas, as needed. • Noise reduction measures will be implemented at construction areas and may include temporary noise barriers, the use of quiet equipment models, maintaining mufflers, lubrication of equipment, limiting idling, minimizing the use of back-up alarms, and frequent noise monitoring. • Near surface construction will only be performed between the hours of 7:00 a.m. to 6:00 p.m. to limit noise impacts. • Maintenance of traffic plans will be implemented during construction to minimize congestion. • Public information will be made available on the NPS website and on signs in the park to inform visitors of the project and its construction impacts.
Historic Structures and Districts	• Pre- and post-construction surveys will be conducted, where necessary, and construction means, and methods will be identified to minimize effects on historic structures within the tunnel buffer area or in close proximity to near surface construction areas. • Monitoring and structural protection will be implemented during construction, as needed. • Trees of the same or similar species will be planted to replace trees removed during construction. • AlexRenew, in consultation with NPS, Virginia Department of Historic Resources (VDHR), City of Alexandria and others, as appropriate, will develop site restoration plans and locate and design visible infrastructure to be appropriate for each construction area. In accordance with the National Historic Preservation Act (NHPA) Section 106 Consultation, AlexRenew, NPS, VDHR and City of Alexandria have developed a Programmatic Agreement to define the continued consultation process for the project and stipulate mitigation of adverse effects to historic properties (see Appendix D).

Resource Category	Mitigation Measure
Archeological Resources	• Previously unidentified archeological resources encountered during construction or pre-construction investigations will be evaluated for listing in the National Register of Historic Places and appropriate avoidance, minimization, and mitigation approaches will be developed in consultation with NPS and VDHR. • In accordance with the NHPA Section 106 Consultation, AlexRenew, NPS, VDHR and City of Alexandria have developed a Programmatic Agreement to define the continued consultation process for the project and stipulate mitigation of adverse effects to historic properties (see Appendix D).
Cultural Landscapes	• AlexRenew, in consultation with NPS, VDHR, City of Alexandria and others, as appropriate, will develop site restoration plans and locate and design visible infrastructure to be appropriate for each site and minimize the visual intrusion to other nearby cultural landscapes. • Park functions and facilities will be reestablished post-construction and removed trees will be replaced by the same or similar native species at a ratio coordinated with the NPS.
Human Health and Safety	• Soil borings and groundwater samples will be taken at regular elevation intervals during excavation to determine if impacted soil or groundwater is present. • Soil will be live loaded into trucks or stockpiled and transported and disposed of off-site to a landfill or facility approved to accept impacted soils. • All construction areas will be fenced, with no trespassing signs and fencing cloth to deter bystanders. • Watering of the construction areas will be conducted as necessary to minimize the potential for dust. • Trucks transporting soil will be tightly covered and pass through a wheel wash station prior to leaving the construction area to eliminate migration of soils. • On-site oversight professionals will inspect trucks before they leave the construction area. • Regular street sweeping will be conducted along haul routes and within the vicinity of construction areas. • Excavation dewatering will be followed by water treatment, sampling and discharge in compliance with the terms of the permitted discharge (i.e. a VPDES Permit or discharge to AlexRenew's WRRF). The contractor will provide on-site treatment (i.e. granulated activated carbon, bag filters, or equivalent), sampling and metering. • Site restoration will include backfilling excavated areas with clean fill material. • Exposed soils will be stabilized and replanted with vegetation as soon as possible following completion of construction activities. • Construction workers will follow an approved health and safety plan. • Construction activities at the Robinson Terminal North site will comply with the VDEQ-approved Corrective Action Plan.
Endangered Species	• A review of the National Oceanic and Atmospheric Administration, National Marine Fisheries Service data noted the study area contains critical habitat for the Atlantic sturgeon (Acipenser oxyrhinchus), and documented occurrences of the shortnose sturgeon (Acipenser brevirostrum) in the Potomac River and just downstream of the project in Hunting Creek. These species are listed as Endangered and are protected under the Endangered Species Act. To avoid the potential for adverse effects to sturgeon, AlexRenew would avoid working within the Potomac River during the annual time of year restriction (TOYR) on in-stream work between February 15 to June 30. • Prior to construction, the NPS and AlexRenew will re-engage with both the Fish and Wildlife Service, and the National Marine Fisheries Service to ensure there were no new listing, or changes in species status.

APPENDIX B: NON-IMPAIRMENT DETERMINATION

By enacting the National Park Service (NPS) Organic Act of 1916 (Organic Act), Congress directed the US Department of Interior and the NPS to manage units "to conserve the scenery and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same in such a manner and by such a means as will leave them unimpaired for the enjoyment of future generations" (54 USC 100101). Congress reiterated this mandate in the Redwood National Park Expansion Act of 1978 by stating that the NPS must conduct its actions in a manner that will ensure no "derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress" (54 USC 100101).

NPS Management Policies 2006, Section 1.4 explains the prohibition on impairment of park resources and values. While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the National Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

This determination on impairment has been prepared for the selected alternative described in this Finding of No Significant Impact. An impairment determination is made for resource topics of water quality, wetlands, historic structures and districts, archeological resources, and cultural landscapes. These resources are considered fundamental to the George Washington Memorial Parkway, and the NPS as a whole. An impairment determination is not made for visitor use and experience, or human health and safety because impairment findings relate back to park resources and values, and these impact areas are not generally considered to be park resources or values according to the Organic Act and cannot be impaired in the same way that an action can impair park resources and values. This determination on impairment has been prepared for the preferred alternative described in Chapter 2 of the EA.

WATER QUALITY - There will be no impairment to water quality under the Selected Alternative. Water quality may be temporarily impacted during construction; however, the use of BMPs and E&S control measures will minimize the risk of short-term, adverse impacts from sedimentation adjacent to the work and disturbed area. Overall adverse impacts on water quality will be limited and will not alter the overall purpose and significance of the park. Additionally, the reduction of combined sewer and sanitary sewer discharges will result in long-term beneficial impacts to water quality.

WETLANDS - There will be no impairment to wetlands under the Selected Alternative. RiverRenew construction activities are anticipated to result in the permanent impact to 0.28 acre of riverine (R1EM) wetlands within the Potomac River and 107 linear feet of intermittent (R4) stream channel within Jones Point Park. Temporary impacts to 0.12 acre of riverine (R1EM) wetlands within the Potomac River are also anticipated as a result of proposed construction activities.

Construction of the Outfall 001 Diversion Facility will result in the loss or degradation of habitat for fish and other aquatic species within a 0.40-acre area of the Potomac River. To comply with NPS Director's Order 77-1, mitigation of permanent wetland impacts will be provided at a 10:1 ratio aimed at improving the overall functionality and values of nearby wetlands through the removal of invasive plant species within Jones Point Park. These impacts will affect isolated individuals but will not affect the overall population levels of any aquatic species given the small amount of habitat that will be affected and the abundance of nearby suitable habitat within the Potomac River. Impacts on aquatic species will be temporary.

CULTURAL RESOURCES - Portions of the project area are located within the GWMP Historic District and within Jones Point Park, which the NPS considers to be a cultural landscape. There are no recorded

historic structures or any known archeological resources within the areas proposed for soil disturbance. Additional surveys will be conducted to determine the presence or absence of archeological resources. The Selected Alternative will have direct and indirect impacts on cultural resources the within direct and indirect areas of potential effect. The new diversion facilities at Outfalls 001 and 002 will alter the setting of the historic resources in the area but will be at or below grade. Construction of the Outfall 002 diversion facility will permanently remove trees, shrubs, and other understory vegetation within Jones Point Park that contributes to the cultural landscape. After construction activities are completed, appropriate vegetation will be replanted in temporarily disturbed areas and adjacent to the new structures. Cleared trees will be replaced on-site, to the extent possible, or elsewhere in the park.

Continued consultation with the VA SHPO and other consulting parties will occur during the design phase of the project to ensure adverse impacts on cultural resources are minimized and mitigated to the extent possible. Also, construction activities will adhere to the requirements of the Programmatic Agreement included in Appendix D. None of the impacts will affect the eligibility for listing of any of the historic resources in the National Register of Historic Places, and the purpose and significance of the GWMP and its ability to function as a scenic gateway to the nation's capital will be unaltered. Therefore, no impairment of historic structures and districts, archeological resources, or cultural landscapes will occur. The area of permanent impacts on vegetation under the Selected Alternative is small, relative to the overall size of the GWMP, and will not impede the purpose of the park to protect the natural shoreline of the Potomac River. Because impacts will largely be temporary and the addition of impervious surface to the existing footprint will be relatively small, no impairment to soils and vegetation will occur in the GWMP.

CONCLUSION

The preferred alternative would not result in major, long-term adverse impacts on park resources. Therefore, the preferred alternative would result in no impairment of park resources.

APPENDIX C: Response to Public Comments

No.	Comments	Responses
1	Outfall 002 Diversion Facility Option 3 - Royal Street South should be selected, along with a tunnel alignment beneath St. Mary's cemetery. River Renews own assessment states that this provides the least danger to existing structures by being the greatest distance from those structures.	An easement to cross under St. Mary's Cemetery is required for the Outfall 001/2 Tunnel, therefore, the location of the tunnel through this reach is subject to their discretion.
2	Concerned about the contaminated soil at the site of Outfall 001. The soil has been contaminated by the blooms of 4 past industrial factories. The contaminants include leaking buried fuel tanks, coal tar distillates and arsenic.	Neither the NPS nor AlexRenew have previously indicated that soil would be transported via barge. AlexRenew is currently conducting an environmental exploration and characterization program to further identify and analyze the concentration and location of potential environmental concerns (PECs) in the areas of proposed ground disturbance. In advance of construction, site-specific health and safety plans will be developed to address risks to human health and safety posed by the presence of PECs, as appropriate. When working in areas with impacted soils and groundwater, exposure pathways to workers and the public will be minimized utilizing best management practices and other methods approved by the VDEQ. No hauling is proposed within NPS administrative units, therefore, hauling routes are at the discretion of the City of Alexandria Department of Transportation and Environmental Services (T&ES). Based on coordination to date between AlexRenew and T&ES, barging is not considered a viable alternative to trucking. Trucks transporting excavated soils are proposed to be equipped with tied-down tarps to ensure materials leaving the site are fully contained. Trucks leaving the construction areas will also pass through wheel washes and be inspected prior to entering City streets. Additionally, street sweeping along proposed haul routes and adjacent to the construction areas will be conducted on a regularly occurring basis.
3	The perpendicular wall that will be built into the Oronoco Bay to contain the new sewage treatment pipes and tunnel is now planned to be faced with white stone. I think that wall of stone, in full sunlight from dawn until noon every summer day, will generate enough heat to	The materials and finish of the proposed Outfall 001 Diversion Facility and outfall extension façade are required to meet City standards, conform with the *Alexandria Waterfront Common Elements Design Guidelines*, and be to

No.	Comments	Responses
	warm much of the Bay and perhaps affect the Potomac. Algae, plants, fish, foul will all eventually be affected by the heated water. I understand the need for essentially a retaining wall, but is it possible to mitigate the heat gain by tilting the wall ever so slightly? Or by setting the stones at slight angles? Or by providing planters of jasmine, Virginia creeper, wild grape and any other hanging vine that does not attach to the stone?	the satisfaction of the NPS, and Directors of Planning & Zoning and T&ES.
4	The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Biotics historically documents the presence of natural heritage resources within the project boundary including a 100ft buffer. However, due to the scope of the activity we do not anticipate that this project will adversely impact these natural heritage resources. There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity. Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects. New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.	AlexRenew will coordinate with DCR and VDGIF as part of the forthcoming Clean Water Act permitting process.
5	Request for St. Asaph Square Condominium and Cardinal Management Group, Inc. to be advised of the Combined Direct and Indirect Affects residents at St. Asaph Square may experience during construction. Cardinal should also be notified if there are any preventative or maintenance issues that need to be done before or during construction. Thank you.	The Selected Alternative includes the Outfall 001/2 Tunnel alignment under Church Street, which is approximately 400 feet south of the St. Asaph Square Condominium property and outside the tunnel buffer area. The closest proposed haul routes are a minimum of one (1) block away from the St. Asaph Square Condominium property. Therefore, no direct affects are anticipated to the property, and the

No.	Comments	Responses
		only anticipated indirect affect will be increased truck traffic in the vicinity during portions of the construction period.
6	While nearly a comprehensive review of the impacts associated with the CSO project, there are two significant omissions that should be considered and included in the final version of the EA - - the adequacy of the system capacity in light of anticipated increases in precipitation attributable to climate change and the availability of the river as a construction haul route for construction materials removed from contaminated sites. The EA fails to identify and adequately address all effects of climate change on the system. In particular, the EA is silent on the anticipated increases in the precipitation attributable to climate change and how those increases would affect capacity requirements for the system. The EA acknowledges the anticipated effects of climate change on water elevation (i.e., surface structures will be at a height that accounts for predicted sea level rise), but it does not address, or even acknowledge, how the system capacity could be affected by increases in precipitation attributable to climate change. This omission is a significant oversight, and the document should be revised to reflect the considerable knowledge that is available.	The Long-Term Control Plan Update (LTCPU), approved by VDEQ in June 2018, analyzed all alternatives for their adaptability and resiliency to climate change. Additionally, AlexRenew analyzed the Selected Alternative under future climate conditions in year 2100, with respect to increased rainfall and sea level rise. This analysis illustrated that the Selected Alternative will meet current EPA targets under future conditions and the proposed structures are sited at elevations higher than the future 100-year flood event. This information was subsequently summarized in an informational flyer titled "*RiverRenew and Climate Change: Is RiverRenew Adaptable and Resilient?*" and shared with the RiverRenew Stakeholder Advisory Group and public during the Listening Sessions in June 2019. The flyer is provided as an attachment to this appendix.
7	Fairfax County would like an opportunity to review the Maintenance of Traffic Plans in advance of construction for closures and detours that would affect drivers and cyclists traveling to or from Fairfax County.	AlexRenew will inform the City of Alexandria of Fairfax County's request to review relevant Maintenance of Traffic Plans in advance of construction.

APPENDIX D: SECTION 106 PROGRAMMATIC AGREEMENT

PROGRAMMATIC AGREEMENT
BETWEEN THE NATIONAL PARK SERVICE, CITY OF ALEXANDRIA, VIRGINIA SANITATION AUTHORITY AND
THE VIRGINIA STATE HISTORIC PRESERVATION OFFICE
REGARDING RIVERRENEW: AN INFRASTRUCTURE INITIATIVE TO REMEDIATE ALEXANDRIA'S COMBINED SEWER SYSTEM
March 2020

WHEREAS, City of Alexandria, Virginia Sanitation Authority d/b/a Alexandria Renew Enterprises (Permittee), with support from the City of Alexandria is proposing to implement RiverRenew (the Project), a major infrastructure project designed to substantially reduce discharges of sewage mixed with rainwater from Alexandria, Virginia's combined sewer system, and identified by the Department of Historic Resources (DHR), which serves as the State Historic Preservation Office (SHPO), as Project Review No. 2018-0571; and

WHEREAS, the Project must comply with the Commonwealth of Virginia's 2017 Legislation, SB 898 Combined Sewer Overflow Outfalls (Chapter 0827 of the 2017 Acts of Assembly) which requires that Alexandria's existing combined sewer outfalls be brought into compliance with Virginia law by July 1, 2025; and

WHEREAS, a small portion of the Project will involve the use of lands managed by the National Park Service (NPS); and

WHEREAS, the NPS is charged in its administration of the units of the National Park System to meet the directives of other laws, regulations, and policies including the NPS Organic Act as codified in Title 54 United States Code (USC) 100101(a) to "conserve the scenery, natural and historic objects, and wild life in the System's units and to provide for the enjoyment of the scenery, natural and historic objects, and wild life in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations;" and

WHEREAS, the George Washington Memorial Parkway (GWMP or Park), a unit of the NPS, with portions located in Fairfax and Arlington Counties and the City of Alexandria, in Virginia, was established pursuant to what is known as the Capper-Cramton Act, Public Law 71-284, 46 Stat. 482, (May 1930) for purposes "to include the shores of the Potomac and adjacent lands, from Mount Vernon to a point above the Great Falls on the Virginia side, including the protection and preservation of the natural scenery of the Gorge and Great Falls of the Potomac," and became a unit of the NPS Park System pursuant to Executive Order 6166 of June 10, 1933 (taking effect August 10, 1933) and the Park is administered by NPS; and

WHEREAS, Maryland ceded its ownership of the Potomac River bottom to the federal government in 1791 (1791 Md. Acts ch. 45, § 2), and the boundary extends to the high-water mark on the Virginia shore within the 1791 District of Columbia boundary, and the NPS manages the Potomac River bottom on behalf of the Federal Government; and

WHEREAS, Special Use Permits are required from the NPS for only the portion of the Project work in the bottom of the Potomac River and within the boundaries of Jones Point Park, a site of the GWMP; and

WHEREAS, pursuant to 36 CFR § 800, (regulations implementing Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, (54 U.S.C. § 306108), federal agencies are required to take into account the effects of their undertakings on historic properties, and the NPS has determined that the issuance of a permit for the portion of the Project on NPS administered lands is an undertaking subject to Section 106 of the NHPA; and

WHEREAS, Jones Point Park is a contributing resource to the George Washington Memorial Parkway Historic District (DHR Inventory No. 100-0121), a historic property entered into the National Register of Historic Places (NRHP) on June 2, 1995 for its nationally significant commemorative, design, and scenic qualities; and

WHEREAS, because the Project is a complex urban construction project, where effects on historic properties cannot be fully determined prior to approval of the Project, the NPS is using this Programmatic Agreement (PA) to facilitate identification efforts related to the NPS undertaking and resolve potential adverse effects on historic properties in accordance with 36 CFR § 800.14(b)(1)(ii); and

WHEREAS, the NPS, in consultation with DHR, has determined that the Area of Potential Effects (APE) includes those areas that fall under the authority of the NPS Special Use permit (NPS controlled or managed lands) where cultural deposits may reasonably be expected to occur and includes specifically the Potomac River bottom where near surface excavations are planned and all areas where near-surface excavations are planned within Jones Point Park but do not include the deep tunnel alignments within the river or Jones Point Park (see Attachment A); and

WHEREAS, this PA only pertains to the portion of the undertaking within the APE, as defined by the NPS, and should another federal agency be involved in the Project, then that agency bears its own responsibility for compliance with Section 106 of the NHPA; and

WHEREAS, to assist in efforts to identify historic properties pursuant to 36 CFR § 800.4, the Permittee has completed a cultural resource documentary study for the Project as reported in *Documentary Study for RiverRenew, City of Alexandria, Virginia* (Dutton + Associates, LLC., 2019); and

WHEREAS, the NPS has notified the Advisory Council on Historic Preservation (ACHP) of the intent to create a PA and issued an invitation to participate in this consultation as an invited signatory and the ACHP has declined to participate through notification by letter to NPS dated March 4, 2020; and

WHEREAS, the Permittee has significant responsibilities to carry out as a part of this PA and the NPS has invited the Permittee to participate in this consultation and to sign this PA as an invited signatory, and the Permittee has elected to participate; and

WHEREAS, the NPS has invited the City of Alexandria (City) to participate in this consultation and to sign this PA as a concurring party, and the City has elected to participate and will be represented by the Office of Historic Alexandria; and

WHEREAS, no human remains, funerary objects, sacred objects, or objects of cultural patrimony, as defined in the Native American Graves Protection and Repatriation Act (25 USC 3001), are expected to be encountered during archaeological data recovery or construction, and any such discoveries encountered during construction shall be governed by the Post Review Discoveries stipulation outlined in Section III of this PA; and

WHEREAS, the NPS issued a web Public Notice for the Project on June 17, 2019, requesting public comment (https://parkplanning.nps.gov/projectHome.cfm?projectId=83140) and responses were received from nine (9) individuals and organization listed in Attachment B; and

WHEREAS, the NPS has taken into account comments received in response to the Public Notice in development of this PA.

NOW THEREFORE, as satisfaction of the NPS' Section 106 responsibilities (related to the nature and scope of the NPS undertaking) to take into account the effects of the portion of the Project requiring NPS permits on historic properties, the Permittee, the SHPO, and the NPS (the Signatories) agree to the following stipulations:

STIPULATIONS

The NPS, in coordination with the Permittee, shall ensure the implementation of the following stipulations:

I. IDENTIFICATION AND EVALUATION OF HISTORIC PROPERTIES AT JONES POINT PARK (OUTFALL 002 DIVERSION FACILITY)

a. A technical report documenting the results of archaeological testing completed in 2019 in advance of geotechnical soil borings for the project located in Jones Point Park, shall be prepared and submitted to the NPS, SHPO, and other consulting parties for review and comment. The results of the testing shall be documented in a report that meets the Secretary of the Interior's *Standards and Guidelines for Archaeological Documentation* (48 FR 44734-37, September 29, 1983) and the SHPO's *Guidelines for Conducting Historic Resources Survey in Virginia (*revised September 2017*)* (*Guidelines*) and in accordance with the conditions of Archeological Resources Protection Act Permit #18-GWMP-09*.* The document shall be submitted to the NPS, SHPO, and other consulting parties for review and comment in accordance with Stipulation III below.

b. Within sixty (60) days of execution of this PA, the Permittee shall develop a draft resource identification and evaluation plan (Identification Plan) for the Jones Point Park Outfall 002 APE. At a minimum, the Identification Plan shall provide details on the proposed locations for archaeological testing, level of effort, methods to be employed, schedule, and personnel. The Identification Plan shall provide for a sufficient level of survey to identify historic properties and conclusively determine their potential for listing in the NRHP.

c. The Identification Plan shall be guided by the results and recommendations outlined in the document titled *Documentary Study for RiverRenew* (Dutton et al. 2019) and the results of the archaeological testing completed in advance of the geotechnical soil borings, and shall identify resource identification and evaluation measures that are consistent with the Secretary of the Interior's *Standards and Guidelines for Archaeological Documentation* (48 FR 44734-37, September 29, 1983) and the SHPO's *Guidelines* and shall take into account the ACHP's publications, *Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites* (1999; updated July 26, 2002) and *Section 106 Archaeology Guidance* (June 2007). Specific measures shall also be provided in the Identification Plan for consulting with the federally and state recognized American Indian tribes in the event archaeological deposits considered potentially eligible for listing in the NRHP are encountered.

d. The Permittee shall provide one (1) copy of the draft Identification Plan to the NPS, SHPO, and other consulting parties for review and comment. All comments received within thirty (30) days on the Identification Plan shall be addressed by the Permittee in the final Identification Plan.

e. Following acceptance of the Identification Plan by the NPS, but prior to implementation, the Permittee shall obtain a permit from the NPS for excavation on federal land in accordance with the Archeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm) and its implementing regulations (43 CFR 7). The results of the identification and evaluation survey shall be documented in a report that meets the Secretary of the Interior's *Standards and Guidelines for Archaeological Documentation* (48 FR 44734-37, September 29, 1983) and the SHPO's *Guidelines.* The document shall be submitted to the NPS, SHPO, and other consulting parties for review and comment in accordance with Stipulation III below.

II. TREATMENT OF HISTORIC PROPERTIES AT JONES POINT PARK (OUTFALL 002 DIVERSION FACILITY)

a. In the event historic properties are identified during testing associated with the Identification Plan for Jones Point Park Outfall 002 APE that the NPS and SHPO agree are eligible for listing in the NRHP, the Permittee shall evaluate options for avoidance or minimization of direct effects to the identified properties. If the Permittee is unable to avoid or minimize effects to the identified properties, the Permittee shall develop a plan for data recovery (Recovery Plan) in consultation with the NPS, SHPO and the other consulting parties for the affected historic properties.

b. The draft Recovery Plan shall be consistent with the Secretary of the Interior's *Standards and Guidelines for Archaeological Documentation* (48 FR 44734-37, September 29, 1983) and the SHPO's *Guidelines* and shall take into account the ACHP's publications, *Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites* (1999; updated July 26, 2002) and *Section 106 Archaeology Guidance* (June 2007). The draft Recovery Plan shall specify at a minimum, the following:

1. the portion of the site or sites where specific data recovery plans will be carried out;

2. the portion of the site or sites to be preserved in place, if any, as well as the measures to be taken to ensure continued preservation;

3. any sites, or portions of sites that will be destroyed or altered without data recovery;

4. the research questions to be addressed through data recovery, with an explanation of their relevance and importance;

5. the methods to be used with an explanation of their relevance to the research questions;

6. the methods to be used in analysis, data management, and dissemination of data, including a schedule;

7. the proposed disposition of recovered materials and records;

8. proposed methods of disseminating the results of the work to the interested public and/or organizations who have expressed an interest in the data recovery, subject to revision based on the results of the data recovery proceeds; and

9. a schedule for the submission of progress reports to the NPS, the SHPO, and other consulting parties.

c. The Permittee shall submit the draft Recovery Plan to the SHPO for review and comment and to the NPS for review and approval. The Permittee shall provide one (1) copy to the consulting parties for review and comment. All comments received within thirty (30) days shall be addressed by the Permittee in the final Recovery Plan.

d. Following approval in writing from the NPS, but prior to implementation of the Recovery Plan, the Permittee shall obtain a permit from the NPS for excavation on federal land in accordance with the Archeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm) and its implementing regulations (43 CFR 7).

d. The Permittee shall ensure that the approved Recovery Plan(s) is implemented prior to those activities of the Project that could affect the identified site or sites that are the subject of the Recovery Plan.

e. The Permittee shall notify the NPS, the SHPO, and the other consulting parties in writing once the fieldwork portion of the Recovery Plan is complete and provide a brief management summary to the NPS, the SHPO, and the other consulting parties for review and comment and so that a site visit may be scheduled, if requested. The NPS may approve implementation of the Project's construction or construction related ground disturbing activities in the area and within the boundary of the site or sites while the technical report is in preparation following acceptance of the fieldwork management summary.

f. The Permittee and/or its assignees may photograph the work and artifacts, and display on a temporary or permanent basis artifacts or images, with

the exception of human remains, funerary objects, or sacred items, in an appropriate place within the Project.

g. The Permittee shall prepare a report (following the requirements for preparation and review of draft and final reports in Stipulation IV) of the results of the Recovery Plan investigations within one (1) year of the notification that fieldwork has been completed. When the final report has been approved by the NPS, the Permittee shall provide one (1) copy of that document, comb-bound and on acid-free paper and one electronic copy in Adobe® Portable Document Format (.pdf) to the SHPO; and one (1) copy to each of the other consulting parties in a format of their choosing.

III. ARCHAEOLOGICAL MONITORING OF THE POTOMAC RIVER BOTTOM DURING OUTFALL 001 DIVERSION FACILITY CONSTRUCTION

a. Within thirty (30) days of execution of this PA, the Permittee shall develop a draft archaeological monitoring plan (Monitoring Plan) for mechanical excavations of the Potomac River bottom at the Oronoco Bay Outfall 001 Diversion Facility site APE. At a minimum, the Monitoring Plan shall provide details on the proposed locations for monitoring, schedule, and personnel.

b. The Monitoring Plan shall be guided by the results and recommendations outlined in the document titled *Documentary Study for RiverRenew* (Dutton et al. 2019).

c. The Permittee shall submit the draft Monitoring Plan to the NPS, SHPO, and other consulting parties for review and comment. All comments received within thirty (30) days shall be addressed by the Permittee in the final Monitoring Plan. Following acceptance of the Monitoring Plan by the NPS, the Monitoring Plan shall be implemented with the commencement of construction in the Potomac River bottom.

d. In the event intact archaeological deposits are encountered during implementation of the Monitoring Plan, the provisions outlined in Stipulation V below will be followed.

IV. PREPARATION AND REVIEW OF DOCUMENTS

a. Except as otherwise stated elsewhere in the stipulations, the Permittee and/or its assignees shall submit a draft of all technical reports, treatment plans, and other documentation to the NPS (one (1) copy) and the SHPO (one (1) hard copy and one electronic copy in Adobe® Portable Document Format (.pdf)) and to other consulting parties one (1) copy in a format of their choosing for thirty (30)-day review and comment. The Permittee shall address all comments received within thirty (30) days of confirmed receipt in the revised technical report/documentation. Following written approval

by the NPS, the Permittee shall provide one (1) copy of all final reports, bound and on acid-free paper, and one electronic copy in Adobe® Portable Document Format (.pdf) to the SHPO and one (1) copy (.pdf or hardcopy) to the NPS, and one copy to the other consulting parties in the format of their choosing.

b. All technical reports prepared pursuant to this PA shall be consistent with the federal standards titled *Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (48 FR 44716-44742, September 29, 1983) and the SHPO's *Guidelines*, or any subsequent revisions or replacements of these documents.

c. Prior to the submission of any archaeological site forms to the SHPO, the Permittee shall provide draft copies of completed Archeological Management Information System (ASMIS) forms and completed SHPO archaeological site forms to the NPS for review and approval.

d. The SHPO and the other consulting parties agree to provide comments on all technical reports, treatment plans, and other documentation arising from this PA within thirty (30) calendar days of receipt unless otherwise specified in this PA. If no comments are received from the SHPO or the other consulting parties within the thirty (30) day review period, the Permittee may assume the non-responding party has no comments.

e. All final technical reports shall be submitted to the NPS accompanied by two completed copies of the National Technical Information Service (NTIS) form for each report.

V. POST-REVIEW DISCOVERIES

a. The Permittee shall ensure that the following provision is included in all construction contracts: "If previously unidentified historic properties or unanticipated effects to historic properties are discovered during construction, the construction contractor shall immediately halt all activity within the immediate area of the discovery and in any adjacent areas where additional or related resources may reasonably be expected to be present, notify the Permittee of the discovery and implement interim measures to protect the discovery from looting and vandalism. Work in all areas not subject of the discovery may continue."

b. Upon receipt of a notification required by the contract provision described in Stipulation V.a, the Permittee shall

    1. inspect the construction site to determine the extent of the discovery and ensure that construction activities have halted;
    2. clearly mark the area of the discovery;

3. implement additional measures, to the extent deemed necessary by Permittee, in its reasonable discretion acting in good faith, to minimize the risk to the discovery from looting and vandalism;
4. have a professional archeologist inspect the construction site to determine the extent of the discovery and provide recommendations regarding its NRHP eligibility and treatment, which shall be limited to sampling and documentation in lieu of preservation in place or full data recovery; and
5. notify the NPS, the SHPO and other consulting parties of the discovery and describe the measures that have been implemented to comply with this Stipulation.

c. Upon receipt of the information required in Stipulation V.b.5, the NPS shall provide the Permittee, the SHPO, and other consulting parties with its assessment of the NRHP eligibility of the discovery and the measures proposed to resolve adverse effects within twenty-four (24) hours of receipt of information of the discovery. In making its evaluation, the NPS, in consultation with the SHPO, may assume the discovery to be NRHP eligible for the purposes of Section 106 pursuant to 36 CFR § 800.13(c). The Permittee, the SHPO and other consulting parties shall respond to the NPS' assessment within twenty-four (24) hours of receipt**.**

d. The NPS shall take into account the SHPO's, and other consulting parties' recommendations on eligibility and treatment of the discovery and determine which actions, if any, are appropriate for the Permittee to take with regard to the discovery. The NPS shall notify and provide documentation to the Permittee regarding any such appropriate actions that are required within twenty-four (24) hours of receiving recommendations. The Permittee must comply with the required actions and provide the NPS and consulting parties with a report on the actions after completion.

e. Data recovery activities will not extend outside the support of excavation for RiverRenew construction activities.

f. Construction activities may proceed in the area of the discovery, when the NPS has determined that implementation of the actions undertaken to address the discovery pursuant to Stipulations V.a-d are complete.

VI. HUMAN REMAINS

a. In the event gravesites are unexpectedly discovered, the Permittee shall make all reasonable efforts to avoid disturbing gravesites, including those containing Native American human remains and associated funerary artifacts. The Permittee shall treat all human remains in a manner consistent with the ACHP's *Policy Statement Regarding Treatment of*

Burial Sites, Human Remains and Funerary Objects (February 23, 2007; http://www.achp.gov/docs/hrpolicy0207.pdf).

b. If removal is proposed, the Permittee shall apply for a permit from the SHPO for the removal of human remains in accordance with the regulations stated above. The Permittee shall ensure that any removed human skeletal remains and associated funerary objects encountered during the course of actions taken as a result of this PA shall be treated in accordance with the Regulations Governing Permits for the Archaeological Removal of Human Remains (Virginia Register 390-01-02) found in the *Code of Virginia* (10.1-2305, et seq., Virginia Antiquities Act).

c. The Permittee shall make a good faith effort to ensure that the general public is excluded from viewing any Native American burial site or associated funerary artifacts. The consulting parties to this PA shall release no photographs of any Native American burial site or associated funerary artifacts to the press or general public. The NPS shall notify the appropriate Federally-recognized Tribe(s), and/or appropriate State recognized tribal leaders when Native American burials, human skeletal remains, or funerary artifacts are encountered on the project, prior to any analysis or recovery. The Permittee shall deliver any removed Native American human skeletal remains and associated funerary artifacts recovered pursuant to this PA to the appropriate tribe to be reinterred. The disposition of any other human skeletal remains and associated funerary artifacts shall be governed as specified in any permit issued by the SHPO or any order of the local court authorizing their removal. The Permittee will be responsible for all reasonable costs associated with treatment of human remains and associated funerary objects.

VII. CURATION

a. Following approval by the NPS and the SHPO of all final technical report reports resulting from work carried out under this PA, the Permittee shall deposit all archaeological materials and appropriate field and research notes, maps, drawing and photographic records collected as a result of archaeological investigations arising from this PA (with the exception of human skeletal remains and associated funerary objects) for permanent curation with the NPS, National Capital Region.

b. All artifacts shall be processed and cataloged in accordance with the revised NPS' *Museum Handbook in Accessioning and Cataloging Museum Objects* and all artifacts cataloged using the Interior Collection Management System (ICMS).

VIII. QUALIFICATIONS

All archaeological work carried out pursuant to this PA shall be conducted by or under the direct supervision of an individual or individuals who meets, at a minimum, the Secretary of the Interior's *Professional Qualifications Standards* (48 FR 44738-9, September 29, 1983) in the appropriate discipline.

IX. DISPUTE RESOLUTION

a. Should any party to this PA object in writing to the NPS regarding any action carried out or proposed with respect to any undertakings covered by this PA or to implementation of this PA, the NPS shall consult with the objecting party to resolve the objection.

b. If after initiating such consultation, the NPS determines that the objection cannot be resolved through consultation, the NPS shall forward all documentation relevant to the objection to the ACHP, including the proposed response to the objection.

c. Within thirty (30) days after receipt of all pertinent documentation, the ACHP shall exercise one (1) of the following options:
    1. Advise the NPS that the ACHP concurs with the NPS' proposed response to the objection, whereupon the NPS shall respond to the objection accordingly; or
    2. Provide the NPS with recommendations, which the NPS shall take into account in reaching a final decision regarding its response to the objection; or
    3. Notify the NPS that the objection will be referred for comment pursuant to 36 CFR § 800.7(a)(4), and proceed to refer the objection and comment. The Corps shall take the resulting comment into account in accordance with 36 CFR § 800.7(c)(4) and Section 110(l) of the NHPA.

d. Should the ACHP not exercise one (1) of the above options within thirty (30) days after receipt of all pertinent documentation, the NPS may assume the ACHP's concurrence in its proposed response to the objection.

e. The NPS shall take into account any ACHP recommendation or comment provided in accordance with this stipulation with reference only to the subject of the objection; the NPS' responsibility to carry out the actions under this PA for which it is otherwise responsible and that are not the subjects of the objections shall remain unchanged.

f. At any time during implementation of the measures stipulated in this PA, should an objection pertaining to this PA be raised by a member of the public, the NPS shall notify the parties to this PA and take the objection

into account, consulting with the objector and, should the objector so request, with any of the parties to this PA to consider the objection.

X. AMENDMENTS AND TERMINATION

a. Any signatory party to this PA may propose to the NPS that the PA be amended, whereupon the NPS shall consult with the other parties to this PA to consider such an amendment. All signatories to the PA must agree to the proposed amendment in accordance with 36 CFR § 800.6(c)(7).

b. The Permittee, upon completion of Stipulations I-VII and all ground disturbing activities, may request from the SHPO, the NPS, and the other signatories to this PA that the PA be terminated.

c. If the Permittee decides it will not proceed with the Project, it shall so notify the signatories and the other consulting parties and this PA shall become null and void.

d. If the Permittee determines that it cannot implement the terms of this PA, or if the signatories determine that the PA is not being properly implemented, the Permittee, the NPS, or the SHPO may propose to the other parties to this PA that it be amended or terminated.

e. This PA may be terminated by any signatory to the PA in accordance with the procedures described in 36 CFR § 800.6(c)(8). Termination shall include the submission of a technical report or other documentation by the Permittee on any work done up to and including the date of termination. If the NPS is unable to execute another PA following termination, the NPS may choose to modify, suspend, or revoke the NPS Special Use Permit.

XI. DURATION OF PA

This PA shall continue in full force and effect until July 1, 2025. The Permittee shall fulfill the requirements of this PA prior to and in conjunction with the work authorized by the NPS permit. All obligations under this PA must be complete before expiration of this PA. Failure of the NPS to pursue such violation is NOT a waiver. At any time in the six (6)-month period prior to expiration of this PA, the NPS may request the signatory parties to consider an extension or modification of this PA. No extension or modification will be effective unless all parties to the PA have agreed with it in writing.

XII. REPORTING REQUIREMENTS

a. Upon the completion of all of its stipulations under this PA, the Permittee shall provide to the NPS, the SHPO and other consulting parties a signed memorandum documenting that the Permittee has fulfilled all its responsibilities under this PA.

b. The NPS, the SHPO, and other consulting parties shall provide the Permittee with concurring and/or objecting opinions within fifteen (15) days of receipt of a signed memorandum documenting that the Permittee has fulfilled all its responsibilities under this PA. Any objections will be addressed through the Dispute Resolution process outlined in Stipulation VI.

c. Should any party fail to provide an opinion within the fifteen (15)-day review period, the Permittee may assume that the non-responding party has no objections and that all responsibilities under the PA have been fulfilled.

XIII. MISCELLANEOUS PROVISIONS

a. This PA shall be effective on the date it has been signed by all signatory parties.

b. This PA may be executed in counterparts, with a separate page for each signatory. The NPS will ensure that each signatory party is provided with a copy of the fully executed PA.

c. Execution of this PA by the NPS and the SHPO and its submission to the ACHP in accordance with 36 CFR § 800.6(b)(1)(iv), shall, pursuant to 36 CFR § 800.6(c), be considered to be a PA pursuant to the regulations issued by the ACHP for the purposes of Section 110(l) of the NHPA.

d. Execution and submission of this PA, and implementation of its terms, evidence that the NPS has afforded the ACHP an opportunity to comment on the proposed undertaking and its effect on historic properties and that the NPS has taken into account the effect of the undertaking on historic properties.

e. Compliance with the terms and provisions of this PA will be required as a condition to the permit which the NPS may issue to the Permittee for the Project. Failure by the Permittee to comply with such terms and provisions will constitute a violation of the permit, and the NPS may seek all available remedies for such violations, including enforcement. Failure by the NPS to pursue any such violation is NOT a waiver of the NPS' right or authority to do so in the future.

[*Remainder of page intentionally left blank; signature pages follow*]

SIGNATORY:

NATIONAL PARK SERVICE

By: _____ Date: 4/2/2020

Charles Cuvelier, Superintendent
George Washington Memorial Parkway

[*Signature pages continue*]

SIGNATORY:

VIRGINIA STATE HISTORIC PRESERVATION OFFICER

By: Julie V. Langan Date: 9-8-2020

Julie V. Langan, Director
Department of Historic Resources

[*Signature pages continue*]

INVITED SIGNATORY:

PERMITTEE

City of Alexandria, Virginia Sanitation Authority d/b/a Alexandria Renew Enterprises

By: _____ Date: 4·2·2020

Karen Pallansch, General Manager
Alexandria Renew Enterprises

[*Signature pages continue*]

CONCURRING PARTY:

CITY OF ALEXANDRIA
a political subdivision of the Commonwealth of Virginia, represented by the Office of Historic Alexandria

By: Eleanor Breen Date: 4/7/2020

Eleanor Breen, City Archaeologist
Office of Historic Alexandria/Alexandria Archaeology

ATTACHMENT A: Project Area of Potential Effects


Legend
AlexRenew
APE for NPS Programmatic
Study Area
Pendleton Street
Oronoco Bay
N. Washington Street
Outfall 1 Insert
Holland Lane
Hooffs Run
Duke Street
S. Washington Street
S. Fairfax Street
S. Lee Street
S. Union Street
Potomac River
AlexRenew
Green Street
I-495/I-95
Church Street
Jones Point Park
Woodrow Wilson Memorial Bridge
Hunting Creek
Outfall 2 Insert
N
W
E
S
RiverRenew
0
1,250
2,500
Feet
APE for NPS Programmatic Agreement
Overall Map: Figure 1 of 3
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


Legend
APE for NPS Programmatic
Study Area
Potomac River
Oronoco Bay
Pendleton St
Oronoco St
VIRGINIA
DISTRICT OF COLUMBIA
N
W
E
S
RiverRenew
0
200
400
Feet
APE for NPS Programmatic Agreement
Outfall 1 Map: Figure 2 of 3
Sources: Esri, HERE, Garmin, USGS, Intermap, IN P, NRCan, Esri Japan, METI, Es (Hong Kong), Esri Korea, iland), NGCC, © OpenStreetMap contributors, and the GIS User Community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


Legend
APE for NPS Programmatic
Study Area
S Royal St
Green St
Green St
S Lee St
Lee Ct
St Mary's
High Center
Capital Beltway
95
495
N
W
E
S
RiverRenew
0
200
400
Feet
APE for NPS Programmatic Agreement
Outfall 2 Map: Figure 3 of 3
Sources: Esri, HERE, Garmin, USGS, Intermap, IN P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, iland), NGCC, © OpenStreetMap contributors, and the GIS User Community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

ATTACHMENT B: Public Comment Request and List of Responders

Correspondence ID: 1 Project: 83140 Document: 96338

Received: Jun,19 2019 14:39:17

Correspondence Type: Web Form

Correspondence: Request for St. Asaph Square Condominium and Cardinal Management Group, Inc. to be advised of the Combined Direct and Indirect Affects residents at St. Asaph Square may experience during construction. Cardinal should also be notified if there are any preventative or maintenance issues that need to be done before or during construction. Thank you.

Correspondence ID: 2 Project: 83140 Document: 96338

Received: Jun,26 2019 07:43:05

Correspondence Type: Web Form

Correspondence: June 26, 2019

Re: RiverRenew Stormwater Project at Jones Point Park Environmental Assessment

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

Biotics historically documents the presence of natural heritage resources within the project boundary including a 100ft buffer. However, due to the scope of the activity we do not anticipate that this project will adversely impact these natural heritage resources.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from http://vafwis.org/fwis/ or contact Ernie Aschenbach at 804-367-2733 or Ernie.Aschenbach@dgif.virginia.gov.

Should you have any questions or concerns, please contact me at 804-225-2429. Thank you for the opportunity to comment on this project.

Correspondence ID: 3 Project: 83140 Document: 96338

Received: Jul,02 2019 16:44:14

Correspondence Type: Web Form

Correspondence: I am concerned about the contaminated soil at the site of Outfall 001. The soil has been contaminated by the blooms of 4 past industrial factories. The contaminants include leaking buried fuel tanks, coal tar distillates and arsenic.

Our neighborhood had been promised that the soil would be barged away but are now being told that it might be trucked away.

The residents of our neighborhood have not had good experiences when it comes to construction trucking companies. They have failed to keep their word to clean their tires before leaving a site, to travel along their designated route and torespect working hours.

I am asking that all contaminated soil should be barged out of the construction area of Outfall 001 for the health and welfare of our neighborhood.

Correspondence ID: 4 Project: 83140 Document: 96338

Received: Jul,03 2019 04:55:36

Correspondence Type: Web Form

Correspondence: The contaminated soil (which contains arsenic, buried fuel tank, coal tar distillates) from Outfill 001 should be barged out, not trucked. The trucks in this community have not followed city rules/regulations. I live at Duke and Union Streers across from the Robinson Landing construction and the trucks often do not follow protocol. They drive down Duke which is restricted, drive into my courtyard, idle for long periods of time, track dirt (it often blows in the air when they run) and construction crews don't respond when there are safety concerns. I've seen trucks hit barriers. They often leave dirt uncovered, which is a violation. When I emailed Emilio Pundavela and Adam Thormahlen about unauthorized truck idling and dirt, I didn't even get a response. The trucks can't be trusted to follow the rules and therefore, will put our community at risk by tracking contaminated soil into our parks, residents, homes and schools. Our city officials can't be trusted to respond to the residents they are hired to serve. I have a 2 year old son who plays in parks around the river. Children are more susceptible to contaminants and cancer. I urge the city to be responsible to our children and protect them and even if more expensive, barge contaminated soil out of the city. Thank you for your consideration.

Correspondence ID: 5 Project: 83140 Document: 96338

Received: Jul,03 2019 08:53:56

Correspondence Type: Web Form

Correspondence: I am concerned about the contaminated soil at the site of Outfall 001. The soil has been contaminated by the blooms of 4 past industrial factories. The contaminants include leaking buried fuel tanks, coal tar distillates and arsenic.

Our neighborhood had been promised that the soil would be barged away but are now being told that it might be trucked away.

The residents of our neighborhood have not had good experiences when it comes to construction trucking companies. They have failed to keep their word to clean their tires before leaving a site, to keep their material contained, to travel along their designated route and to respect working hours.

I am asking that all contaminated soil should be barged out of the construction area of Outfall 001 for the health and welfare of our neighborhood.

Correspondence ID: 6 Project: 83140 Document: 96338

Received: Jul,03 2019 13:46:13

Correspondence Type: Web Form

Correspondence: The perpendicular wall that will be built into the Oronoco Bay to contain the new sewage treatment pipes and tunnel is now planned to be faced with white stone. I think that wall of stone, in full sunlight from dawn until noon every summer day, will generate enough heat to warm much of the Bay and perhaps affect the Potomac. Algae, plants, fish, foul will all eventually be affected by the heated water.

I understand the need for essentially a retaining wall, but is it possible to mitigate the heat gain by tilting the wall ever so slightly? Or by setting the stones at slight angles? Or by providing planters of jasmine, Virginia creeper, wild grape and any other hanging vine that does not attach to the stone?

What can be done to preserve as much bay life as possible and, frankly, to make a glaring white wall more pleasant on the eye.

Correspondence ID: 7 Project: 83140 Document: 96338

Received: Jul,07 2019 13:22:57

Correspondence Type: Web Form

Correspondence: Outfall 002 Diversion Facility Option 3 - Royal Street South should be selected, along with a tunnel alignment beneath St. Mary's cemetery. River Renews own assessment states that this provides the least danger to existing structures by being the greatest distance from those structures

"This option locates the proposed structures at the greatest distance from residential areas, the community gardens, and the Basilica School, but requires the tunnel to be routed under a large number of St. Mary's Cemetery graves to connect to the drop shaft."

I do not intend to discount the Church's concerns. However, the risks to the many residences should outweigh the interests of the Church, which appear to be more of a bullying nature.

Correspondence ID: 8 Project: 83140 Document: 96338

Received: Jul,19 2019 14:10:34

Correspondence Type: Web Form

Correspondence: Fairfax County Department of Transportation provides the following comment:

"Fairfax County would like an opportunity to review the Maintenance of Traffic Plans in advance of construction for closures and detours that would affect drivers and cyclists traveling to or from Fairfax County."

Correspondence ID: 9 Project: 83140 Document: 96338

Received: Jul,19 2019 21:43:01

Correspondence Type: Web Form

Correspondence: While nearly a comprehensive review of the impacts associated with the CSO project, there are two significant omissions that should be considered and included in the final version of the EA - - the adequacy of the system capacity in light of anticipated increases in precipitation attributable to climate change and the availability of the river as a construction haul route for construction materials removed from contaminated sites.

The EA fails to identify and adequately address all effects of climate change on the system. In particular, the EA is silent on the anticipated increases in the precipitation attributable to climate change and how those increases would affect capacity requirements for the system.

References to climate change in the document are limited. Appendix A to the EA identifies the effects of climate change as one of the issues that was excluded from detailed analysis in the EA. Specifically, on p. A-2: Issue: The proposed tunnel and sewer systems could be impacted by climate change. The proposed action is designed to account for anticipated water elevation increases due to climate change. It is not anticipated to be a significant source of greenhouse gas emissions, or be a contributing factor to climate change. In addition, on p. 12 of the EA, In order to achieve operational requirements, provide resiliency, and plan for impacts associated with climate change, the ground surface associated with each alternative would be raised to elevation 14, approximately two (2) feet above the 100-year floodplain elevation.

The EA acknowledges the anticipated effects of climate change on water elevation (i.e., surface structures will be at a height that accounts for predicted sea level rise), but it does not address, or even acknowledge, how the system capacity could be affected by increases in precipitation attributable to climate change. This omission is a significant oversight, and the document should be revised to reflect the considerable knowledge that is available (e.g., https://www.epa.gov/climate-indicators/climate-change-indicators-us-and-global-precipitation) on the anticipated increases in precipitation and how the proposed alternative is (or is not) designed to account for these increases.

The EA also omits an additional construction haul route for materials that could pose a health risk to those individuals who live, work, or play along the possible construction haul routes - barge in the Potomac River. Barges have been used or considered for a number of construction projects along the river, and with the concerns over possible contaminated soil being trucked through the streets of Old Town Alexandria, omitting the barge option for at least the most contaminated soils is glaring. The EA should be amended to include this as one of the construction haul routes considered in order to mitigate potential environmental health impacts for the community during construction activities.

Demographics - Demographics Report - PEPC ID: 83140

ATTACHMENT C: Definitions

Area of Potential Effects: The geographic area or areas within which the undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. For this undertaking the area includes lands over which the NPS has administrative authority; i.e. within Jones Point Park and the bed of the Potomac River within the District of Columbia (see Attachment A)

Near-Surface Excavations: All soil disturbances to a depth of 15 feet from the present ground surface.

APPENDIX F: WETLAND/FLOODPLAIN STATEMENT OF FINDING

Statement of Findings

for

Executive Order 11990 "Wetland Protection"

And

Executive Order 11988 "Floodplain Management"

George Washington Memorial Parkway

RiverRenew Environmental Assessment

RECOMMENDED:

Charles Cuvelier — 3-12-2020

Charles Cuvelier — Date
Superintendent, George Washington Memorial Parkway

CERTIFICATION OF TECHNICAL ADEQUACY AND SERVICEWIDE CONSISTENCY:

F. Edwin Harvey — 03-16-2020

Forrest Harvey — Date
Chief, Water Resources Division

APPROVED:

Lisa A Mendelson-Ielmini — April 14, 2020

Lisa A. Mendelson-Ielmini — Date
Acting Director Region 1 -National Capital Area

Wetland Statement of Findings

Introduction

The City of Alexandria was established in 1749 along the western bank of the Potomac River. Alexandria has a high percentage of impervious surfaces and a mixture of combined and separate sewer systems. There are four combined sewer outfalls (Outfalls 001-004) within the City that discharge rainwater mixed with untreated sewage into the Potomac River and its tributaries when the capacity of the combined sewer system is exceeded during wet weather storm events. Alexandria Renew Enterprises (AlexRenew), with support from the City of Alexandria is proposing to implement RiverRenew, a major infrastructure project designed to substantially reduce combined sewer discharges to the Potomac River, Hunting Creek, and Hooffs Run. RiverRenew is needed to comply with the Commonwealth of Virginia's 2017 Legislation which requires that Alexandria's four existing combined sewer outfalls be brought into compliance with Virginia law by July 1, 2025. A portion of the study area, as shown in **Figure D-1**, falls within Jones Point Park, George Washington Memorial Parkway and the bed of the Potomac River, which are administrative units of the National Park Service (NPS).

Figure D-1. RiverRenew Study Area

Pursuant to the National Environmental Policy Act of 1969 (NEPA), AlexRenew and the NPS are evaluating the proposed construction of RiverRenew through an Environmental Assessment (RiverRenew Environmental Assessment 2019). Additionally, Executive Order (EO) 11990 – Protection of Wetlands requires the NPS and other federal agencies to consider the potential impacts to wetlands that may result from implementing the project. This Statement of Findings was prepared per Director's Order #77-1: *Wetland Protection* for the proposed RiverRenew project and documents compliance with NPS wetland protection procedures. A Statement of Findings has been completed because some of the proposed construction associated with Outfall 001 improvements would take place in the Potomac River, and some of the Outfall 002 improvements would take place in jurisdictional waters of the US (WOTUS) within Jones Point Park.

Proposed Action

The proposed action would include a combination of surface facilities, deep shafts, tunnels, diversion sewers and treatment facility upgrades to store, pump and treat flows from Outfalls 001-004 along

two separate areas; one to capture both Outfalls 001 and 002 along the Potomac River and Hunting Creek, and the other to capture Outfalls 003 and 004 along Hooffs Run. The tunnel system will capture and redirect combined sewer discharges from the existing combined sewer system to a new storage and conveyance tunnel system when the capacity of the existing sewer system is exceeded during rain events. Captured combined sewer flows would be conveyed by gravity to the AlexRenew Water Resource Recovery Facility (WRRF) for treatment prior to discharge. Other infrastructure, including upgrades to the WRRF, wet weather treatment facility, pumping stations, ventilation control facilities, and residuals management systems would also be constructed in support of RiverRenew. It is anticipated that implementation of RiverRenew would capture 98% of combined sewer flows and limit discharges to 4-6 times per year, based on the average climate period of 2000-2016, resulting in significant water quality benefits. RiverRenew construction activities will include surface disturbance at four distinct locations: Outfall 001 Diversion Facility, Outfall 002 Diversion Facility, Outfall 003/4 Diversion Sewer and the WRRF Upgrades. Construction of the Outfall 001 and 002 Diversion Facilities would result in impacts to riverine and palustrine wetlands, respectively, on NPS lands. These impacts would require Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act (CWA) permits from the U.S. Army Corps of Engineers (USACE), Section 401 of the Clean Water Act water quality certification from the Virginia Department of Environmental Quality (VDEQ), and would require compliance with NPS Director's Order #77-1: *Wetland Protection*. Construction of the Outfall 003/4 Diversion Sewer and WRRF Upgrades would result in impacts to palustrine wetlands and other tidal and non-tidal WOUS; however, these activities are not located on NPS lands. These impacts would require Section 10 of the Rivers and Harbors Act and Section 404 of the CWA permits, as well as Section 401 of the CWA water quality certification.

Wetland Delineations

In order to assess impacts of the project alternatives on riverine, tidal and non-tidal wetlands, the project team conducted jurisdictional wetland and waters delineations within the study area April 2018 and December 2018. These delineations were conducted in accordance with methodology set forth in the *1987 U.S. Army Corps of Engineers Wetland Delineation Manual* and the 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region* and associated guidance documents. Additionally, riverine wetlands were identified in accordance with the Federal Geographic Data Committee Wetlands Classification Standard (FGDC-STD-004-2013). The FGDC Wetlands Classification Standard defines riverine wetlands as the areas within a waterway of a depth of 2.5 meters (8.2 feet) or less at low water, or at the limits of emergent or woody vegetation extending beyond this depth. Riverine wetlands were identified utilizing the National Oceanic and Atmospheric Administration (NOAA) predicted Mean High Water at the Alexandria Station and measured approximately 3.25 feet above Mean Low Water Station ID 8634214. Extents of jurisdictional wetlands and waters of the United States (as regulated under Section 401 and 404 of the CWA as well as Section 10 of the Rivers and Harbor Act) are depicted on **Figure D-2.**

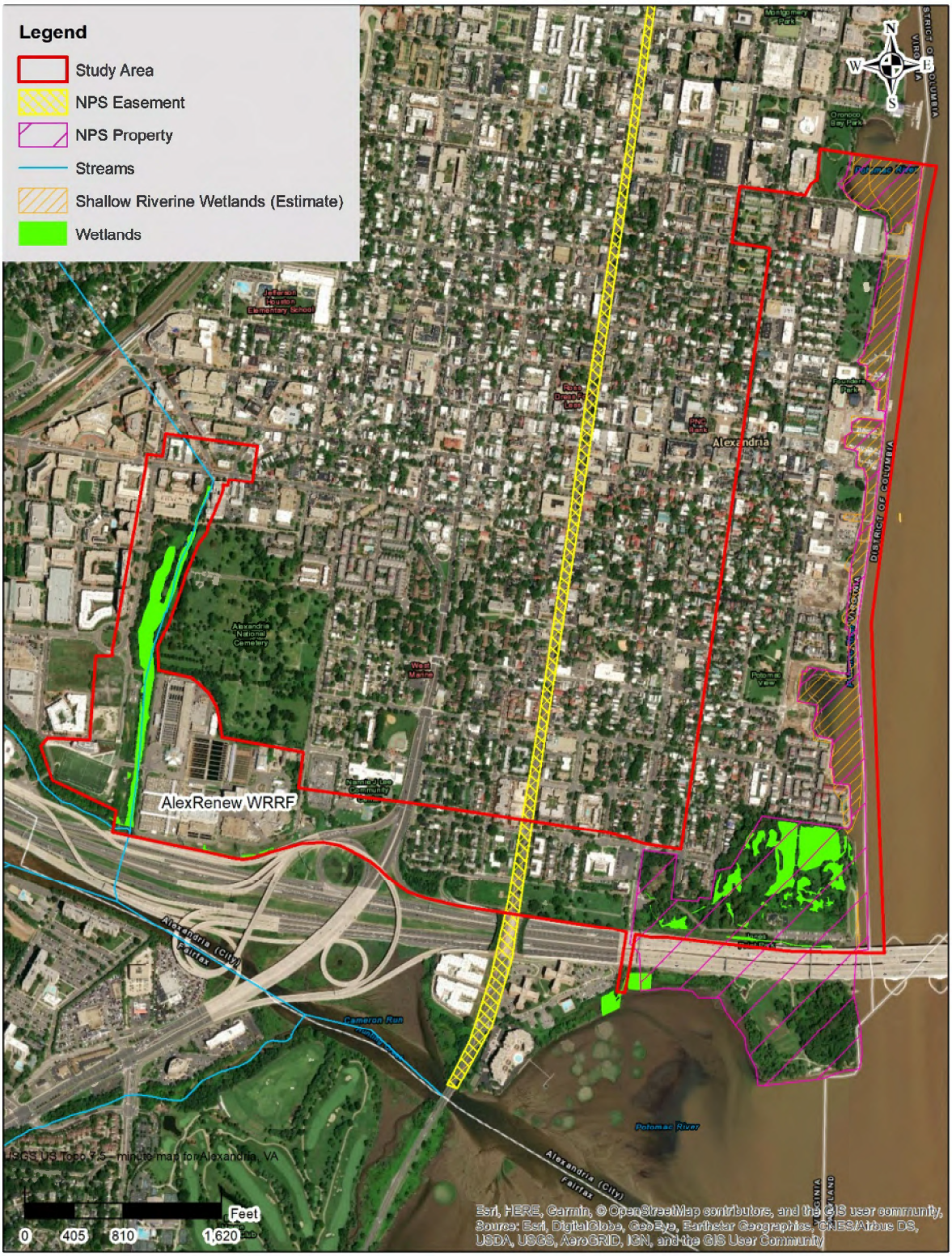

Figure D-2. Jurisdictional Wetlands in the Study Area

Table D-1 provides a summary of the types of wetlands located in the project study area utilizing the Cowardin classification[1], and the approximate sizes/lengths of the wetland areas are noted in parentheses.

Table D-1. Types and Sizes of Wetlands in the Study Area

RiverRenew Surface Disturbance Locations	Number and Approximate Area (acres) of Wetlands						Number and Approximate Length (linear feet) of WOUS			
	PFO	PEM	PSS	POW	EEM	R1EM	EPH	R4	R1/ R3	R2-UB3
Outfall 001 Diversion Facility (Potomac River)	-	-	-	-	-	1 (8.11)	-	-	-	-
Outfall 002 Diversion Facility (Jones Point Park)	15 (6.21)	5 (0.91)	2 (0.28)	1 (0.32)	-	3 (0.38)	1 (297)	3 (452)	-	1 (167)
Total Number of Wetlands and Acres/LF	**15 (6.21)**	**5 (0.91)**	**2 (0.28)**	**1 (0.32)**	**-**	**4 (8.49)**	**1 (297)**	**3 (452)**	**-**	**1 (167)**

Evaluation of Wetland Functions and Values

A functional assessment has been conducted in general accordance with a combination of several methodologies that utilize common primary analysis topics and professional judgement. Functional Assessment methodologies utilized include the NC–CREWS Functional Assessment (NCDEQ), North Carolina Wetland Assessment Method, (NCWAM version 5) NCDEQ, U.S. Fish and Wildlife Service Habitat Evaluation Procedures (1980), and the Ohio Rapid Assessment Method (ORAM) Ohio EPA 2/2001. Given the highly urbanized nature of the study area and the long history of manipulation within the project area wetlands, no wetland areas were classified as "exceptional".

Riverine Wetlands - Potomac River (Outfall 001 Diversion Facility)

Given the highly urbanized landscape of Alexandria, many wetland functions have been previously impacted through shoreline hardening with riprap and bulkheads, channelization of streambeds and shorelines, invasive species domination, and existing infrastructure. The shoreline areas of the Potomac River along the Alexandria waterfront (including Oronoco Bay Park) are hardened with bulkheads, riprap, steel and concrete, and only support sparsely vegetated rubble areas. While

[1] *The Cowardin classification system is based on the type of primary hydrologic regime and setting of the wetland or Waters of the U.S. (WOTUS) as well as the predominant vegetation community found in the wetland or WOUS. The first letter denotes the setting of the wetland and includes R=Riverine, P=Palustrine, E= Estuarine, and even EPH= ephemeral (only flows during storm events). The following letters represent the vegetation types: FO=Forest, EM=Emergent, SS=Scrub Shrub, OW=Open Water, UB=unconsolidated bottom. Numbers are associated with the hydrologic frequency, the lower the number the larger the order of the system (e.g. R4 is an intermittent riverine tributary, whereas R1/2 represents the Potomac River in tidal and non-tidal sections, respectively).*

shoreline erosion prevention is addressed by the hardening, the performance of other important functions typically associated with tidal riverine wetlands including, fish and shellfish nurseries, and sediment retention have been limited by the prior hardening. Aquatic productivity in the Potomac River at the Outfall 001 Diversion Facility project area is low due to prior industrial uses and existing combined sewer discharges into Oronoco Bay. Recreation does occur, but is limited to activities along the upland shoreline within the proposed limits of work. An assessment of the wetland functional values before and after project implementation are summarized in the tables below.

Table D-2. Impacts to Functional Value for Potomac River

Riverine Systems: Outfall 001 –R1EM		
Functional Value Parameter	**Score Before Project**	**Score After Project**
Water Storage/Flood Protection	Medium	Medium
Water Quality	Low	Medium
Shoreline Erosion Control	Medium	Medium
Aquatic Productivity	Low	Medium
Fish and Wildlife Habitat	Low	Low/Medium
Vegetative Composition & Aesthetics	Low/Medium	Medium
Recreation	Low	Medium/High
Average Score	**Medium**	**Medium**

Palustrine Wetlands - Jones Point Park (Outfall 002 Diversion Facility – Royal Street North Option)

The proposed surface area wetland impacts at Jones Point Park are located within an undeveloped passive use portion of the park absent of trails or pathways for access. It has heavy urban intrusions from the adjacent recycling area, overhead and underground utilities and the adjacent Woodrow Wilson Bridge (WWB). However, the area around the wetland is forested with a multistoried canopy. The wetland area contains a straightened intermittent (R4) channel, which conveys roadside drainage from Royal Street and drainage from the Jones Point Park Royal Street Garden plot, through a culvert under Jones Point Drive, south toward flatter topography where a palustrine forested (PFO) wetland is found. This PFO wetland then drains into a culvert where it abuts the utility corridor and easement adjacent to the WWB. The proposed project may increase recreation in the project area as access is difficult through the shrubs and invasive species.

Table D-3. Impacts to Functional Value for Jones Point Park PFO Wetland Systems

Wetland Systems: Outfall 002 Royal Street North - PFO		
Functional Value Parameter	Score Before Project	Score After Project
Water Storage/Flood Protection	Medium	Medium
Water Quality	Low/Medium	Low/Medium
Shoreline Erosion Control	Low	Low
Aquatic Productivity	Low	Low
Fish and Wildlife Habitat	Medium	Medium
Vegetative Composition & Aesthetics	Medium	Medium
Recreation	Low	Medium
Average Score	Medium	Medium

Table D-4. Impacts to Functional Values for Jones Point Park R4 WOTUS Systems

WOTUS Systems: Outfall 002 Royal Street North System LL - Intermittent Stream (R4)		
Functional Value Parameter	Score Before Project	Score After Project
Water Storage/Flood Protection	Medium	Medium
Water Quality	Low	Low
Shoreline Erosion Control	Low	Low
Aquatic Productivity	Low	Low
Fish and Wildlife Habitat	Medium	Medium
Vegetative Composition & Aesthetics	Medium	Medium
Recreation	Low	Medium
Average Score	Medium	Medium

Impacts to Wetlands and other WOTUS

Potential impacts to wetlands and other WOTUS are detailed in the **Tables D-5** and **D-6**, and depicted on **Figures D-3** through **D-6** for each surface disturbance area within NPS lands. Note that the tunnel that would connect to the Outfall 001 and 002 Diversion Facilities would be located over 100 feet below the ground surface, and therefore is not anticipated to impact any riverine or palustrine wetlands or other WOTUS.

Only the wetland impacts associated with the preferred alternative are included as the no-action alternative would not cause direct impacts to wetlands. Wetland impacts are based on preliminary design and may vary slightly from the final design. Wetland impact numbers will be well defined at the

project permitting stage. The project design has minimized impacts to wetlands and other WOTUS to the maximum extent practicable; however, due to the locations of existing sewers and outfalls, some impacts are unavoidable.

Table D-5. Outfall 001 Diversion Facility – Two Possible Options (Potomac River Bed)

Wetland/WOTUS Cowardin Classification (Design Option)	Temporary		Permanent	
	Acres	Stream Length (ft)	Acres	Stream Length (ft)
R1EM (Robinson Terminal North Alternative)	0.12	N/A	0.28	N/A
R1EM (Oronoco Bay East Alternative)	0.73	N/A	0.29	N/A

**Note: Only one of the above options will be constructed.

Table D-6. Outfall 002 Diversion Facility – Royal Street North Option (Jones Point Park)

Wetland/WOTUS Cowardin Classification	Temporary		Permanent	
	Acres	Stream Length (ft)	Acres	Stream Length (ft)
R4	N/A	N/A	0.01	107
PFO	N/A	N/A	N/A	N/A

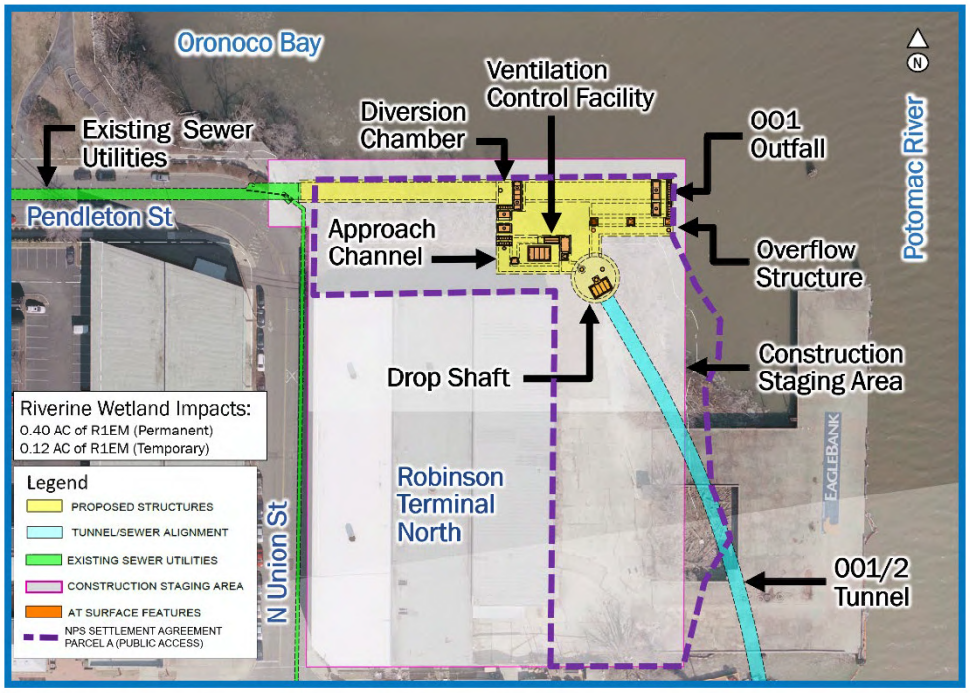

Figure D-3. Riverine Wetland Impacts, Outfall 001 Diversion Facility – Robinson Terminal North Option

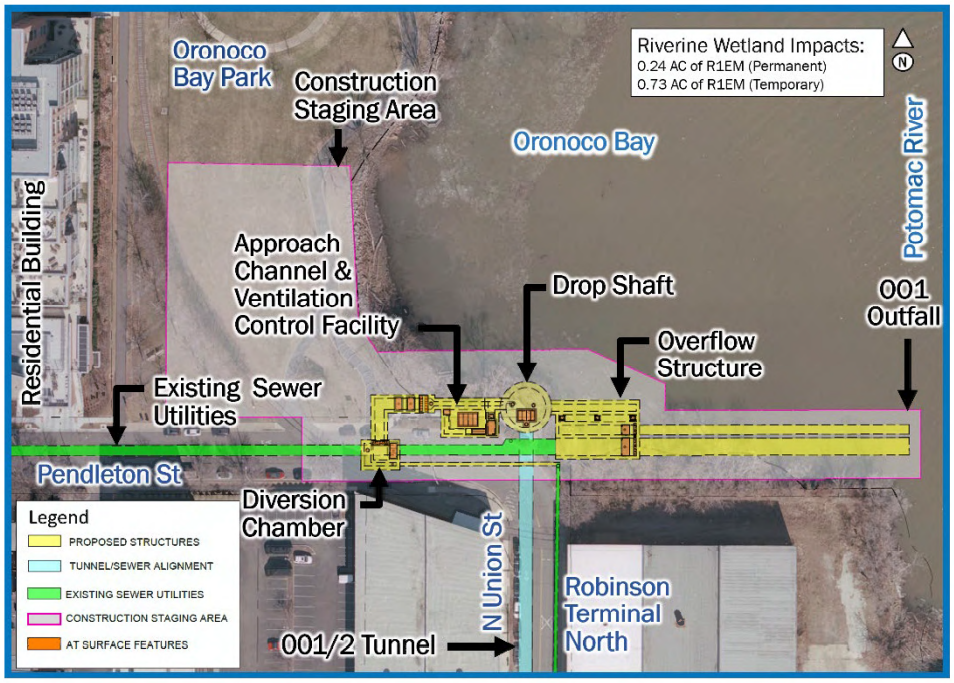

Figure D-4. Riverine Wetland Impacts, Outfall 001 Diversion Facility – Oronoco Bay East Option

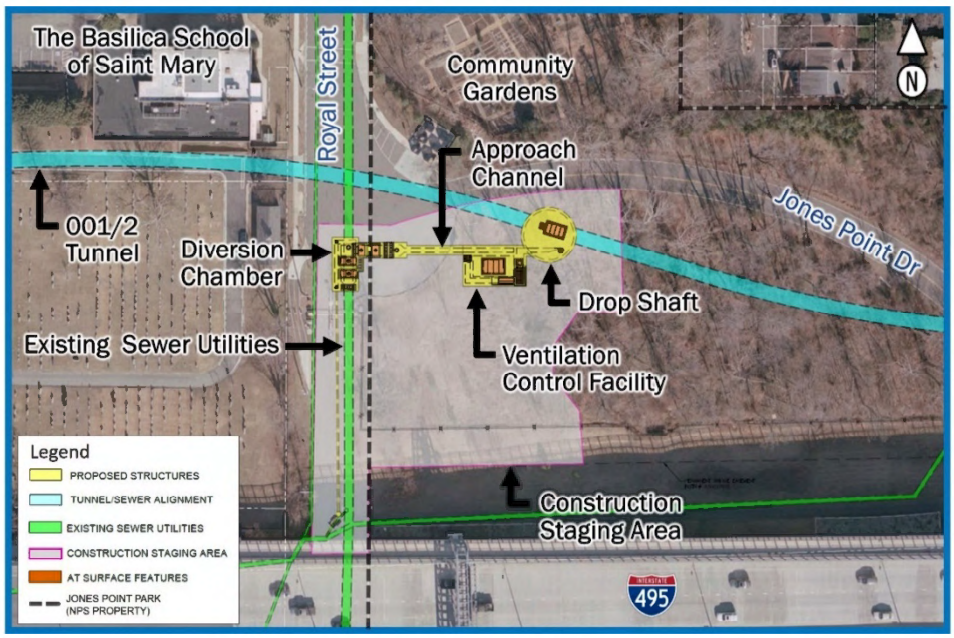

Figure D-5. Palustrine Wetland and other WOTUS Impacts, Outfall 002 Diversion Facility – Royal Street North Option

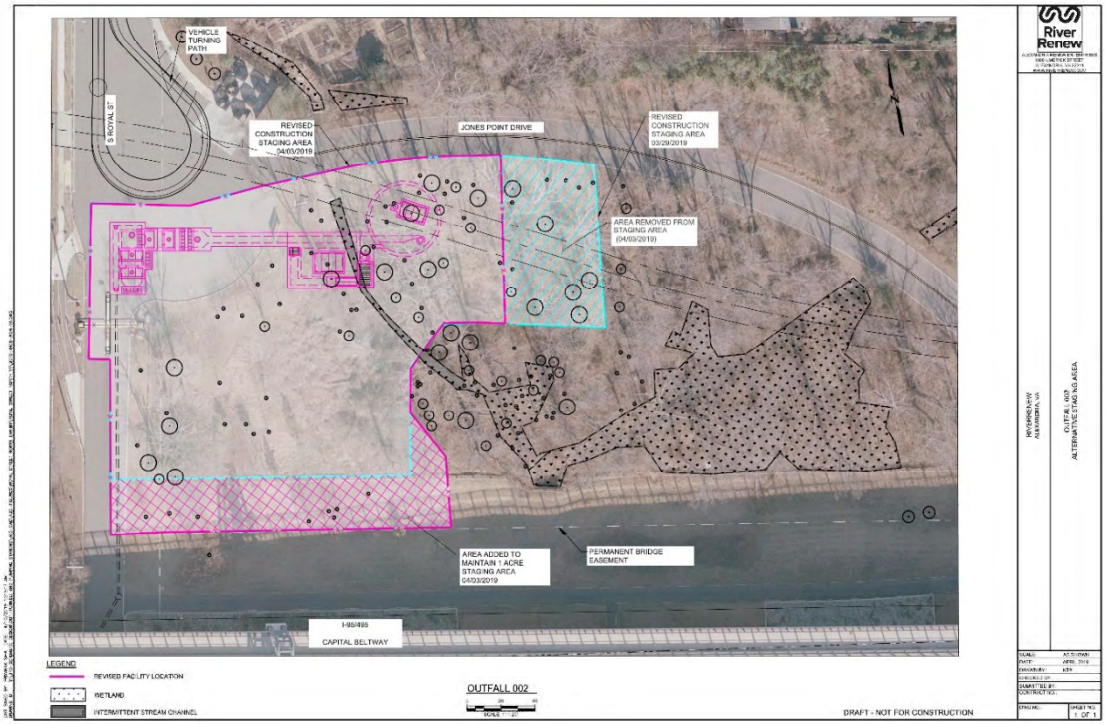

Figure D-6. Outfall 002 Diversion Facility – Royal Street North Option (Revised Construction Staging Area to Minimize Tree Clearing)

Wetland Impacts

Construction activities associated with the Outfall 001 Diversion Facility would result in impacts to the bed of the Potomac River. A new diversion chamber would be retrofitted to the existing 7-foot by 6-foot combined sewer underneath Pendleton Street to divert wet weather flor to a new approach channel that would convey flow to the drop shaft and ultimately the deep tunnel. Pending detailed design, a below-ground ventilation control vault would be constructed to mitigate fugitive emissions from the drop shaft. Approximately 12,100 square feet (0.28 acre) of permanent riverbed impacts are anticipated for the proposed alternative.

Construction activities associated with the Outfall 002 Diversion Facility would result in impacts to approximately 107 linear feet (0.01 acre) of intermittent stream channel within Jones Point Pari. Given the fill required to raise the grade up to elevation +14 feet and keep the structural access points above the 100-year floodplain elevation, it would be difficult to realign the stream channel around the diversion facility. The current plan would place the stream in a culvert through the work area; essentially tying into and extending the existing culvert under Jones Point Drive, and daylighting the stream on the southeast side of the diversion facility into the downstream wetland swale.

Mitigation

Avoidance and minimization measures were incorporated throughout the project design to reduce impacts to sensitive resources, including a big reduction in permanent loss of riverbed and tree clearing, as well as complete avoidance of palustrine forested wetlands within Jones Point Park. General mitigative measures would also include the use of standard best management practices and erosion and sediment control measures throughout the construction period.

Floodplain Mitigation

It is not anticipated that the proposed action would significantly alter the natural and beneficial functions of the floodplain; therefore, no floodplain mitigation would be required. Proposed infrastructure would be designed to be resistant to flood flows and velocities (it would be raised to approximately elevation +14 feet to be approximately 2 feet above the 100-year floodplain), and the design would ensure that there would be no increase to the 100-year water surface on adjoining properties.

Wetland Mitigation

The proposed activity would result in approximately 12,100 square feet (0.28 acre) of unavoidable permanent impacts to the river bed of the Potomac River. As Per D.O. #77-1, NPS would compensate for unavoidable impacts to wetlands through a mitigation project. Because the wetlands are classified as riverine and open water tidal wetlands, it is inherently difficult to restore the functions and values for these types of wetlands (i.e., open water, unconsolidated river bottom). The difficulty lies in restoring lost wetland functions on the bottom of the Potomac River over a relatively small area when compared to the total area comprised of these types of wetland, and the fact that it's in a riverine system creates a situation where the potential for success is low. In addition, if the Virginia Marine Resources Commission (VMRC) does not allow further wetland creation at Dyke Marsh, the Park would be out of locations to create wetlands.

As a result, it was determined that in lieu of a typical 1:1 mitigation ratio for the restoration of lost wetland functions and values, NPS would employ a 10:1 mitigation ratio (requiring 2.8 acres minimum) aimed at improving the overall functionality and values of near-by wetlands through the removal of invasive plant species. The NPS has identified approximately 4.41 acres of available wetlands in the proximity of Jones Point Park for removal of invasive plant species (see **Figure D-7** for details).

The invasive species removal within Jones Point Park would target Ampelopsis brevipedunculata (Porcelain Berry), Hedera helix (English Ivy), Euonymus fortunei (Winter Creeper), and Phragmites australis (Common Reed). The Common Reed is located in the newly created tidal wetlands, which were made as part of the Woodrow Wilson Bridge Project, as well as wetlands along the shoreline. Prior to implementation, the Park would determine which wetlands would be treated and timing of treatment to best meet the required mitigations and to maximize the potential treatment of the invasive plant species. This treatment would commence within one year of the completion of the project, and last for 2-5 years (with at least two treatments a year). Any pesticides or other treatment types used would have to be approved in advance by NPS. Pesticide Use Log maintained for all applications would be required and submitted to NPS.

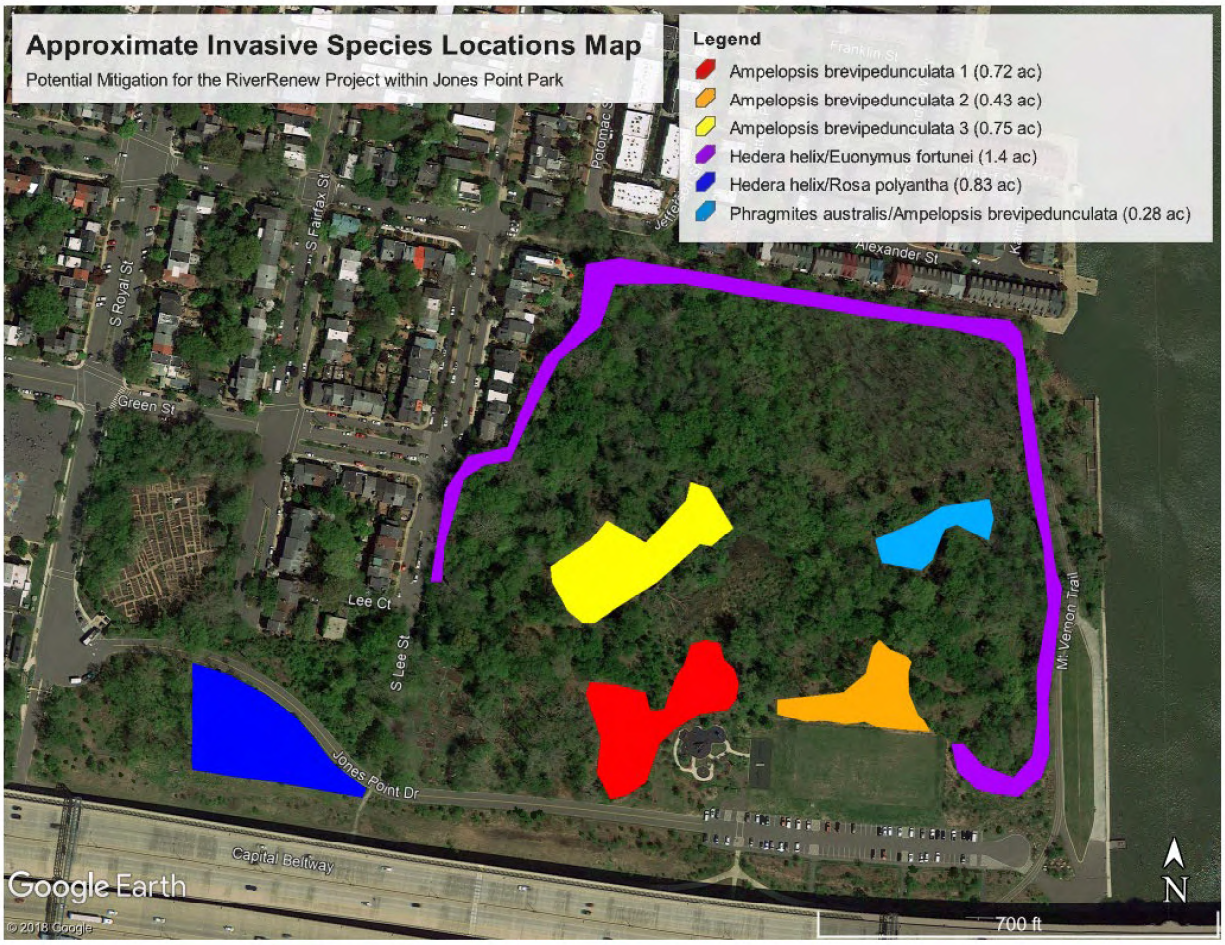

Figure D-7. Approximate Invasive Species Locations at Jones Point Park

Conclusion

As part of the RiverRenew project, AlexRenew would construct the Outfall 001 Diversion Facility along the west bank of the Potomac River at Oronoco Bay, and the Outfall 002 Diversion Facility in Jones Point Park that would impact wetlands and other WOTUS on NPS lands. The construction of the Outfall 001 Diversion Facility (Option 4 – Robinson Terminal North) would result in approximately 0.28 acre of permanent impact and 0.12 acre of temporary impact to riverine wetlands. The construction of the Outfall 002 Diversion Facility (Option 2 – Royal Street North) would result in permanent impacts to approximately 107 linear feet (0.01 acre) of intermittent stream channel. To mitigate for these impacts, AlexRenew would conduct invasive plant species removal activities, covering a minimum of 2.8 acres of wetlands within Jones Point Park. Note that these impacts would also require authorization through the issuance of permits from the NPS, USACE and/or VDEQ.