

**FUNCTIONS AND VALUES ASSESSMENT**  
**Land Adjacent to the Intelligence Community Campus-Bethesda**  
**Chesapeake and Ohio National Historical Park**  
**George Washington Memorial Parkway**

## **1 INTRODUCTION**

This report has been prepared by AECOM on behalf of the U.S. Department of the Interior, National Park Service (NPS), and provides a functional assessment of the water feature resources that may be ecologically up-lifted by the proposed stormwater improvement project. This assessment is designed to address uplift to on-site streams by evaluating the potential for the alteration of the functions and values of those water features that currently provide a public benefit.

AECOM environmental scientists conducted a field investigation on January 22-23, 2018 to determine the extent of wetlands and waters within a 27.6-acre study area on NPS land. The study area is located in Montgomery County, Maryland. This report is prepared in support of an Environmental Assessment and Assessment of Effect for the restoration of channels, and stormwater conveyances on NPS land. Four riverine wetlands and two palustrine wetlands were delineated within the study area. AECOM environmental scientists conducted an additional field investigation on May 7, 2018 to assess the functions and values of the three riverine wetlands directly affected by the proposed project.

The proposed project is designed to restore channels and stormwater conveyances on NPS land located near Intelligence Community Campus - Bethesda (ICC-B). Proposed restoration activities for one or more of the three riverine wetlands include site-wide removal of invasive plants in order to prevent expansion, removal of tree debris and large rocks blocking channels and culverts, stabilization of bank slopes using native vegetation, restoration of bank scour using riprap, placement of stone at culvert outfalls to minimize erosion, and removal of sediment.

This Wetlands Functions and Values Assessment includes all the wetlands proposed to be affected that are potentially under federal jurisdiction. Federally jurisdictional Waters of the United States are subject to United States Army Corps of Engineers (USACE) permitting under Section 404 of the Clean Water Act (CWA) and Water Quality Certification under Section 401 of the CWA. Jurisdictional determination for federal wetlands is typically established as part of the USACE permitting process. This assessment is designed to evaluate all wetland areas potentially under federal jurisdiction that may be affected by the proposed stormwater improvement project.

## **2 FUNCTIONS AND VALUES ASSESSMENT METHODOLOGY**

This functional assessment was conducted in accordance with the U.S. Army Corps of Engineers, New England District publication “The Highway Methodology Workbook Supplement: Wetland Functions and Values, A Descriptive Approach” (2015). The method is descriptive and designed to provide a flexible approach that incorporates wetland science along with human judgment regarding more subjective values and benefits. As part of this method, the evaluator takes into account a number of “Considerations/Qualifiers” that can be used as indicators or descriptors of particular functions and values.

Appendix A of the supplement identifies from two to as many as 32 “Considerations/Qualifiers” that may

be possible indicators of different wetland resource functions and values. Ultimately, the “Considerations/Qualifiers” are designed to be flexible and based on best professional judgment, taking into account other relevant site-specific observations of the evaluator. This flexibility allows the methodology to be appropriately applied to water features, such as streams and canals. Using these indicators, the evaluator determines which functions and values are present in the wetland/water feature, and which are the principal functions and values that make up the important physical aspects and/or are of special value due to their economic importance, their uniqueness, or their local, regional, and/or national significance.

Functions relate to ecological significance without regard to subjective human values. They are considered to be the result of the biologic, geologic, hydrologic, biogeochemical and/or physical processes that take place within a wetland/water feature. Eight functions are included in this methodology:

1. Groundwater Recharge/Discharge
2. Floodflow Alteration
3. Fish and Shellfish Habitat
4. Sediment/Toxicant/Pathogen Retention
5. Nutrient Removal/Retention/Transformation
6. Production (Nutrient) Export
7. Sediment/Shoreline Stabilization
8. Wildlife Habitat

Values are considered to be the perceived benefits to society that can be derived from the ecosystem functions and/or other characteristics of a wetland/water feature. These values may depend on considerations such as location of the water feature, accessibility, human disturbance or pressures, economics, surrounding land uses, and cultural or historic information. Five values are included in this methodology:

1. Recreation
2. Education/Scientific Value
3. Uniqueness/Heritage
4. Visual Quality/Aesthetics
5. Threatened or Endangered Species Habitat

### **3 EXISTING WATER FEATURES**

Three water features were identified within the study area. All three water features delineated within the study area qualify as Riverine Wetlands according to the FGDC Wetlands Classification Standard, and they are therefore subject to NPS Director’s Order #77-1: Wetland Protection.

Two unnamed perennial streams were delineated within the study area and are identified as Riverine Wetlands AA/AB and BA/BB. These riverine wetlands are relatively permanent non-navigable tributaries of the Chesapeake and Ohio Canal (C&O Canal).

The largest water feature within the study area is the C&O Canal, identified for the purposes of this delineation as Riverine Wetland CA/CB. The C&O Canal is a perennial waterway.

A summary of the water features within the study area follows.

### **3.1 Riverine Wetland AA/AB**

Riverine Wetland AA/AB originates off-site, northeast of Wapakoneta Road, and flows southwest where it enters a 6-foot diameter culvert and continues to flow under MacArthur Boulevard. Riverine Wetland AA/AB continues to the southwest of MacArthur Blvd for approximately 125 feet and flows through a 7-foot-wide box culvert beneath the Clara Barton Parkway. Riverine Wetland AA/AB continues to flow southwest for approximately 55 ft to a drop inlet culvert that drains underneath the C&O Canal. The drop inlet is filled with sediment and appeared to accept only a small portion of Riverine Wetland AA/AB's stream flow. The remainder of Riverine Wetland AA/AB's stream flow drains another 55 ft west to its confluence with the C&O Canal. The portion of Riverine Wetland AA/AB's stream flow that enters the drop inlet culvert drains underneath the C&O canal and emerges as surface flow on the western side of the C&O canal. The width of Riverine Wetland AA/AB varies from approximately 5 feet to 20 feet. Ordinary high water mark indicators include a clear, natural line impressed on the bank, leaf litter disturbed, water staining, and presence of flood litter/debris. Riverine Wetland AA/AB is designated as riverine upper perennial rock bottom rubble (R3RB2) stream.

### **3.2 Riverine Wetland BA/BB**

Riverine Wetland BA/BB originates just off-site at stormwater outfalls on ICC-B property and flows southwest, where it enters a 4-foot diameter culvert and continues to flow under MacArthur Boulevard. Riverine Wetland BA/BB continues to the southwest of MacArthur Boulevard for approximately 200 feet and flows through a 3.5-foot-wide box culvert beneath the Clara Barton Parkway. Riverine Wetland BA/BB continues to flow southwest for approximately 85 feet and discharges to the C&O Canal. The width of Riverine Wetland BA/BB varies from approximately 3 feet to 17 feet. Ordinary high water mark indicators include a clear, natural line impressed on the bank, leaf litter disturbed, water staining, and presence of flood litter/debris. Riverine Wetland BA/BB is designated as riverine, upper perennial, rock bottom rubble (R3RB2) stream.

### **3.3 Riverine Wetland CA/CB**

Riverine Wetland CA/CB is the C&O Canal. Riverine Wetland CA/CB drains southeast along the western edge of the study area. Riverine Wetland CA/CB ranges from 45 feet to 55 feet wide within the study area. Ordinary high water mark indicators include a clear, natural line impressed on the bank; matted vegetation; leaf litter disturbed; sediment deposition; water staining; and presence of flood litter/debris. Riverine Wetland CA/CB is designated as riverine, lower perennial, unconsolidated, permanently flooded, excavated (R2UBHx) wetland.

## **4 ADJACENT UPLANDS**

Characteristics of surrounding upland landscape have the potential to influence the significant functions and values that may be provided by each surface water area. The vast majority of the study area is comprised of uplands consisting predominately of forested uplands, along with roadways, maintained/mowed shoulders, the Chesapeake & Ohio Canal (C&O) Canal towpath, and stormwater conveyances. Observed plant species within the upland forest include northern red oak (*Quercus rubra*), box elder (*Acer negundo*), American beech (*Fagus grandifolia*), tulip poplar (*Liriodendron tulipifera*), black locust (*Robinia pseudoacacia*), sweetgum (*Liquidambar styraciflua*), and American sycamore (*Platanus occidentalis*). Land uses in upland areas upslope of the study area include institutional developments, residential, and forested landscapes.

## 5 SITE WATER FEATURE FUNCTIONS AND VALUES

Functions and values of the water features proposed for restoration within the study area depend on their physical, geographic, and environmental characteristics. Influencing factors can include: size and proximity of water features to ongoing development activity, geologic setting, channel characteristics, presence and duration of hydrology, landscape position, vegetation cover type, and dominant ecological community type. The effects of any changes to these physical characteristics are evaluated in assessing whether the proposed restoration would have a significant effect on water feature functions and values.

Six of the eight wetland functions are performed by one or more of the water features within the study area. In addition, four of the five values are associated with one or more of the water features within the study area. **Table 1** lists each of the water features proposed for restoration, along with the functions and values that may be provided by the water feature.

The significance of various “Consideration/Qualifiers” for water features within the study area is described below.

### 5.1 Groundwater Recharge/Discharge

#### Existing Conditions

Groundwater in the study area may be found in unconsolidated deposits of sand and gravel (surficial geology) and bedrock formations. Aquifer recharge may occur from precipitation directly on the land, by seepage from the tributary streams, flowing across the aquifer, and by seepage from bedrock and deposits of low permeability adjacent to the aquifers. Streams also receive groundwater discharge typically where the water table is high relative to the water feature elevation.

Water features in the study area are perennial watercourses that may contribute groundwater baseflow when the water table is low and/or the stream may receive groundwater discharge when the water table is high. Water features in the study area that function in groundwater recharge/discharge were observed to have characteristics such as seepage slopes, riffle-pools, and constricted channels and/or outlets.

Wetlands with the Groundwater Recharge/Discharge function often lack an inlet or outlet, or have a constricted outlet. For the study area, outlets within all three water features are constricted by the presence of culverts under roadways and downed trees within the channels. Riverine Wetland CA/CB (C&O Canal) is a low-gradient, excavated, perennial canal with minimal flow. It has a constricted outlet by the presence of a lock system and therefore has the potential to contribute to groundwater recharge. Water flowing to the C&O Canal from sheetflow runoff, precipitation, and tributaries is retained and infiltrates into the groundwater.

Riverine Wetlands AA/AB and BA/BB are high-gradient water features with riffle-pool sequences and coarse-grained soils. The pools and slow-moving areas have potential for aquifer recharge/discharge. Groundwater seepage was also observed from the bank of Riverine Wetland BA/BB.

#### Evaluation of Uplift with Proposed Parkland Restoration

The proposed project to restore channels and stormwater conveyances would provide uplift to Groundwater Recharge/Discharge function for Riverine Wetland BA/BB, but not for Riverine Wetlands AA/AB and CA/CB. The reformation of rock step pools in Riverine Wetland BA/BB would slow water velocity, create pools, and provide opportunity for groundwater recharge. However, the removal of fallen

**Table 1: Functions and Values of Water Features within Study Area**

<b>Feature ID</b>	<b>Cowardin Classification</b>	<b>Area (Square Feet)</b>	<b>Linear Distance (Feet)</b>	<b>Summary</b>	<b>Functions and Values</b>
AA/AB	R3RB2	9,465	914	High-gradient, incised, perennial stream adjacent to Wapakoneta Road and upland forest. Riffle-pool sequences, sediment deposits, woody debris, and detritus present. Crayfish and passerine birds observed. Flows through historic culverts and discharges to C&O Canal (CA/CB).	Groundwater recharge/discharge, sediment/toxicant retention, nutrient removal, production export*, wildlife habitat*, recreation, education/scientific value*, uniqueness/heritage*, visual quality/aesthetics
BA/BB	R3RB2	11,359	1,124	High-gradient, incised, perennial stream adjacent to upland forest. Riffle-pool sequences, sediment deposits, woody debris, and detritus present. Deer tracks, mammal scat, and passerine birds observed. Flows through historic culverts and discharges to C&O Canal (CA/CB).	Groundwater recharge/discharge, sediment/toxicant retention, nutrient removal, production export*, wildlife habitat*, recreation, education/scientific value, uniqueness/heritage*, visual quality/aesthetics
CA/CB	R2UBHx	4,150	83	Low-gradient, excavated, perennial canal adjacent to towpath and upland forest. Sediment deposits, submergent vegetation, and detritus present. Snails, minnows, water birds, turtles, deer tracks, carp, and bass observed. Minimal flow due to historic locks; discharges to Potomac River.	Groundwater recharge/discharge*, floodflow alteration*, fish and shellfish habitat*, sediment/toxicant retention*, nutrient removal*, production export, wildlife habitat*, recreation*, education/scientific value, uniqueness/heritage*, visual quality/aesthetics

trees and woody debris from Riverine Wetlands AA/AB and BA/BB may result in increased channel velocities.

## **5.2 Floodflow Alteration**

### Existing Conditions

Riverine Wetlands AA/AB and BA/BB convey collected sheetflow runoff and precipitation to Riverine Wetland CA/CB (C&O Canal) during storm events. These incised, perennial streams have minimal ability to function for Floodflow Alteration. These high-gradient water features have high channel flow velocities during storms, as evidenced by the severely eroded stream banks. Downed trees and culverts within the channels may constrict flow and dissipate energy, reducing the potential for downstream damage. However, these two water features convey water and provide no flood storage.

Riverine Wetland CA/CB (C&O Canal) is in a relatively flat area and receives, detains, and slows floodwaters. The steep banks, available storage volume, and constricted outfall provide a high potential for the C&O Canal to function for Floodflow alteration. This is a principal function of the C&O Canal. This function is especially important in urban areas where the watershed contains largely impermeable surfaces that cannot absorb waters during storm events, and economic consequences or other damage to downstream properties may result from flooding events. The C&O Canal collects stormwaters and/or floodwaters from multiple receiving waters, including Riverine Wetlands AA/AB and BA/BB, that are attenuated by the lock system before entering downstream waterway (Potomac River).

### Evaluation of Uplift with Proposed Parkland Restoration

The proposed project would provide uplift to Floodflow Alteration function for C&O Canal, but not for Riverine Wetlands AA/AB and BA/BB. The removal of sediment from C&O Canal would increase potential stormwater storage volume.

## **5.3 Fish and Shellfish Habitat**

### Existing Conditions

Fish and Shellfish Habitat are typically associated with perennial streams and forested land. However, Riverine Wetlands AA/AB and BA/BB are high-gradient water features with no evidence of fish observed. Crayfish were observed in Riverine Wetland AA/AB. Streamside vegetation overhanging the banks provides shading for suitable habitat and cover objects such as cobbles, boulders or woody debris in the substrate may also improve habitat quality. All three water features were included as contributing to potential fish/shellfish habitat, as perennial waterbodies that eventually discharge to the Potomac River. Minnows, carp, and bass were observed in the C&O Canal.

### Evaluation of Uplift with Proposed Parkland Restoration

The proposed project would provide uplift to Fish and Shellfish Habitat within C&O Canal, but not for Riverine Wetlands AA/AB and BA/BB. Removing sediment from the C&O Canal would create deepwater habitat and improve water quality for fish.

## **5.4 Sediment/Toxicant/Pathogen Retention**

### Existing Conditions

All three water features in the study area are suitable to function in the retention of excessive sediments or pathogens that may be carried by surface water runoff within the drainage, and Riverine Wetland CA/CB (C&O Canal) has this as a principal function. The Potomac River is a downstream drinking water source. The C&O Canal has organic soils that drain slowly and Riverine Wetlands AA/AB and BA/BB have riffle-pool sequences. Where the water is pooled or moves slowly within the water feature, sediments, toxicants and/or pathogens settle out. Submergent and emergent vegetation that is present in the C&O Canal can also assist in trapping sediment.

Excess sediments/toxicants are carried downstream, by Riverine Wetlands AA/AB and BA/BB, and deposited in C&O Canal during flooding events. During other times, the watercourses have a visible decrease in velocity, allowing sediment and other materials to be deposited.

Suspected potential sources of excess sediment or toxicants, such as construction sites, roadways, industrial activities, and/or other developments, in the watershed above the wetland may increase the importance of this function.

The proposed project to restore channels and stormwater conveyances would provide uplift to Sediment/Toxicant/Pathogen Retention function for C&O Canal, but not for Riverine Wetlands AA/AB and BA/BB. The removal of sediment from C&O Canal would improve water quality and create storage volume for future sediment deposition. However, the removal of fallen trees and woody debris from Riverine Wetlands AA/AB and BA/BB would remove opportunities for sediment trapping and sediment accumulation, and may increase channel velocity and flushing.

## **5.5 Nutrient Removal/Retention/Transformation**

### Existing Conditions

The three water features in the study area are suitable for Nutrient Removal/Retention/Transformation and Riverine Wetland CA/CB has it as a principal function. These wetlands share many of the characteristics that also assist in sediment trapping and sediment retention, such as riffle-pool steps and deepwater habitats, fine-grained mineral or organic soils, and presence of coarse, woody debris for sediment trapping. Although Riverine Wetlands AA/AB and BA/BB are high-gradient perennial streams, they showed a decline in water velocity within the channels, primarily due to larger rocks and downed woody debris.

Because significant portions up-slope of the study area are under developed land uses, the Nutrient Removal/Retention/Transformation function is particularly important in helping reduce the input of excess nutrients to downstream watercourses (e.g., Potomac River). Excess nutrients in waterbodies can be associated with increased productivity, eutrophication, and lowered dissolved oxygen, which may lower water quality, alter aquatic habitat, and adversely impact fish and other aquatic species.

### Evaluation of Uplift with Proposed Parkland Restoration

The proposed project to restore channels and stormwater conveyances would not provide uplift to Nutrient Removal/Retention/Transformation function. The removal of fallen trees and woody debris from Riverine Wetlands AA/AB and BA/BB would remove traps for nutrients and may increase channel velocity and flushing.

## **5.6 Production Export**

### Existing Conditions

This function relates to the ability of a wetland to produce resources that may be consumed or used by wildlife and humans. In order to perform this function, wetlands usually have high productivity levels. Often, these wetlands are also associated with the wildlife habitat function, as wildlife at the higher trophic levels consume and export vegetation, invertebrates and/or other wildlife at lower trophic levels that are using the wetland.

All three water features in the study area are associated with some production export function. Forested stream banks serve this function due to the availability of wildlife food sources such as berries and acorns, and contributing organic material. Water features with pools and shallows serve as breeding areas for amphibians, fish, and insects that are consumed by other wildlife. Production export also occurs from detritus development and flushing during storm events.

### Evaluation of Uplift with Proposed Parkland Restoration

The proposed project to restore channels and stormwater conveyances would not provide uplift to Production Export function. The removal of fallen trees and woody debris from Riverine Wetlands AA/AB and BA/BB would remove shade and cover for aquatic habitats, as well as organic input (nutrients).

## **5.7 Sediment/Shoreline Stabilization**

### Existing Conditions

Sediment/Shoreline Stabilization is a function of Riverine Wetland CA/CB, but not for Riverine Wetlands AA/AB and BA/BB which are high gradient, deeply incised, and display eroded banks and other evidence of high erosive forces, especially during storm events when water is moving quickly. Riverine Wetlands AA/AB and BA/BB discharge to Riverine Wetland CA/CB (C&O Canal), which acts to absorb energy during flood events. Other evidence of the Sediment/Shoreline Stabilization function observed within the C&O Canal included sedimentation or siltation within the water feature.

### Evaluation of Uplift with Proposed Parkland Restoration

The proposed project would provide uplift to Sediment/Shoreline Stabilization function for Riverine Wetland CA/CB (C&O Canal). Removal of sediment proposed for the C&O Canal would improve water quality and create storage volume for future sediment deposition.

## **5.8 Wildlife Habitat**

### Existing Conditions

The onsite water features have Wildlife Habitat functions and exhibit species diversity, structural diversity, and/or wildlife food sources. Wildlife use or evidence of wildlife use was directly observed during field surveys in all three water features. Crayfish, cardinals and other passerine bird species, and mammal scat were seen in Riverine Wetland AA/AB; passerine birds, deer tracks, and scat were seen in Riverine Wetland BA/BB; and egrets, snails, minnows, carp, bass, turtles, and deer tracks were seen in Riverine Wetland CA/CB during field surveys.



Riverine Wetlands AA/AB and BA/BB have riffle-pool sequences that can provide aquatic breeding habitats for amphibians, as well as breeding areas for insects and other invertebrates that provide food sources for higher trophic levels. Riverine Wetland CA/CB is slow moving and has shallow areas also suitable aquatic habitats for amphibians, insects, and other invertebrates.

The vegetated banks and immediately adjacent upland forests are also of particular habitat value for mammals and some species of birds. Shrubs and trees that produce soft mast, such as box elder, tulip poplar, and American sycamore, may be used by birds and mammals. Hard-mast tree species (e.g. oaks, beech) produce acorns and nuts, which are often consumed or cached by mammal species.

With the exception of certain institutional and residential areas, much of the landscape in the Study area consists of undeveloped forested lands. All three water features have an undeveloped buffer on at least one side, providing a habitat matrix for wildlife and overland access to other upland or wetland habitats. The jurisdictional waters in the Study area are connected watercourses, providing a large and relatively undisturbed hydrologic system.

Human activity due to the presence of the C&O Canal towpath, roadways and associated culverts, and other development has caused habitat fragmentation and the creation of barriers to wildlife movement. These affects tend to have greater impact on the larger wildlife, wildlife that require an extensive home range or territory containing appropriate habitat, and species such as certain amphibians that need both aquatic and terrestrial habitats for portions of their life cycle. Even in areas fragmented by development, however, water features provide important riparian corridors for wildlife.

#### Evaluation of Uplift with Proposed Parkland Restoration

The proposed project would provide uplift to Wildlife Habitat function for Riverine Wetlands AA/AB, BA/BB, and CA/CB (C&O Canal). Removal of site-wide invasive species, such as bamboo (*Phyllostachys* spp.) and Japanese honeysuckle (*Lonicera japonica*), would aid in the prevention of further colonization. However, the current extent of invasive species onsite is minor; therefore, the potential uplift is minimal. At Riverine Wetlands AA/AB and BA/BB, stabilizing the banks with native vegetation would provide ecological uplift by adding forage and cover opportunity. At Riverine Wetland BA/BB, the reforming rock step pools would provide additional habitat for invertebrates and breeding insects and amphibians.

## **5.9 Recreation**

#### Existing Conditions

The three water features in the study area are considered suitable for recreation, as they are located on NPS lands. Riverine Wetland AA/AB and Riverine Wetland BA/BB may have some recreational value to hikers, wildlife observers, and other passive users. Considerations that may increase the value to these recreational users include the use by wildlife, aesthetic value, and the presence of perennial watercourses. Riverine Wetland CA/CB (C&O Canal) accommodates fishing and provides a visual/aesthetic quality for the adjacent towpath, which is a popular recreation destination for cycling, running, hiking, and other outdoor activities.

#### Evaluation of Uplift with Proposed Parkland Restoration

The proposed project would provide minimal uplift to Recreational value through the removal of sediment from the C&O Canal. Sediment removal would create deepwater habitat and improve water quality for fish, thereby improving recreational fishing.

## **5.10 Educational/Scientific Value**

### Existing Conditions

The three water features in the study area have the potential to provide educational/scientific value, as they are located on NPS lands near Washington Waldorf School with available or safe public access and parking. Any outreach or education programs currently conducted by the NPS could be extended within the study area. Additionally, the potential exists for scientific use associated with the study area within NPS lands for research relating to wildlife species and habitats.

### Evaluation of Uplift with Proposed Parkland Restoration

The proposed project to restore channels and stormwater conveyances would not be anticipated to provide uplift to Educational/Scientific value. The site-wide removal of invasive plants may provide minimal uplift to Educational/Scientific Value in and around Riverine Wetland AA/AB, especially in the area of the footbridge and path between Wapakoneta Road and Washington Waldorf School.

## **5.11 Uniqueness/Heritage**

### Existing Conditions

The Uniqueness/Heritage value takes into account the special value of a site in the context of the overall landscape, cultural features, and the rarity of the wetland/habitat type in the local area. The three water features in the study area have Uniqueness/Heritage value due to being on NPS lands. Also, the stormwater structures in place within Riverine Wetland AA/AB and Riverine Wetland BA/BB are more than 50 years old. One cross-drain was inscribed with “Nov. 1855.” Additionally, Riverine Wetland CA/CB (C&O Canal) has historical significance, as do the adjacent towpath, locks, and lock houses.

### Evaluation of Uplift with Proposed Parkland Restoration

The proposed project may provide minimal uplift to Uniqueness/Heritage value. Within Riverine Wetland AA/AB, removing blockages from Culvert #2 and culvert under the C&O Canal may reduce erosion around headwall of historically-significant Culvert #2 and allow the culvert under C&O Canal to function as originally designed more than 50 years ago.

## **5.12 Visual Quality/Aesthetics**

### Existing Conditions

The three water features in the study area provide visual quality/aesthetic value as a result of being located on NPS lands (see above). Riverine Wetland AA/AB is easily accessible for viewing from a pedestrian bridge and Riverine Wetland CA/CB (C&O Canal) can be viewed from the adjacent towpath.

### Evaluation of Uplift with Proposed Parkland Restoration

The proposed project to restore channels and stormwater conveyances would not be anticipated to provide uplift to Visual Quality/Aesthetics value.