Joint Permit Application

Potomac Yard Metrorail Station

Alexandria, VA

October 2017

Kimley»Horn

Contents

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1. PROJECT LOCATION AND DESCRIPTION

1.1. PROJECT LOCATION

The proposed project consists of the construction of the Potomac Yard Metrorail Station. The Potomac Yard Metrorail Station will be a new Metrorail station located in the City of Alexandria along existing Metrorail lines between the existing Ronald Reagan Washington National Airport and Braddock Road stations. The new Metrorail station will be along the Blue and Yellow lines in the vicinity of the Potomac Yard. Potomac Yard was a historic railyard that was converted to a high density, mixed-use area. The proposed improvements and construction area are comprised of ±17 acres. A portion of the proposed project is located on the George Washington Memorial Parkway (GWMP), which is listed on the National Register of Historic Places (NRHP) and is owned and administered by the National Park Service (NPS) or the Green Scenic Area Easement (GSAE), which is owned by the City and administered by NPS. Up to 0.33 acre of NPS property and 1.94 acres of GSAE will be permanently transferred from NPS to the City for the proposed project in exchange 6.32 acres of City property. An additional area of up to 0.42 acres of NPS land and up to 3.09 acres of GSAE will be temporarily utilized for the proposed project for construction staging, but its ownership/administration will be retained by NPS.

The Joint Permit Application (JPA) Form is provided in Appendix A. JPA figures are provided in Appendix B. Photographs of the project location are included in Appendix C.

1.2. PROJECT DESCRIPTION

The proposed project will consist of the construction of the following elements:

1.2.1. Metrorail Station – A 600-foot-long Metrorail station will be constructed at-grade with a side platform layout. Design elements for the station include mezzanines, side platform, below platform service rooms, interior station lighting, mechanical and electrical services and equipment, restrooms, WMATA systems equipment, and signage and graphics.

1.2.2. AC Room Building – A separate building (± 2,750 sq. ft.) will be constructed west of the existing Metrorail lines, and adjacent to the existing Traction Power Substation. This building is sized and equipped to fully accommodate the electric power functions of a WMATA Metrorail station and the electrically-powered third rail and track.

1.2.3. Pedestrian Bridges – Two pedestrian bridges will be constructed from the proposed station over the CSX railroad and WMATA tracks to the existing and planned development at Potomac Yard. The 16-foot southern bridge will provide pedestrian/bike access between Potomac Yard Park and the Potomac Greens neighborhood. The 12-foot northern bridge will provide access and connectivity from existing and future commercial development in Potomac Yard to the Metrorail station.

1.2.4. Entrance Pavilions – Two entrance pavilions will be provided on the west side of the tracks for passenger access from neighborhood streets, planned development and parks to the station. The pavilions will be located at the base of each pedestrian bridge. The pavilions will include escalators, elevators and stairs for access to the bridges.

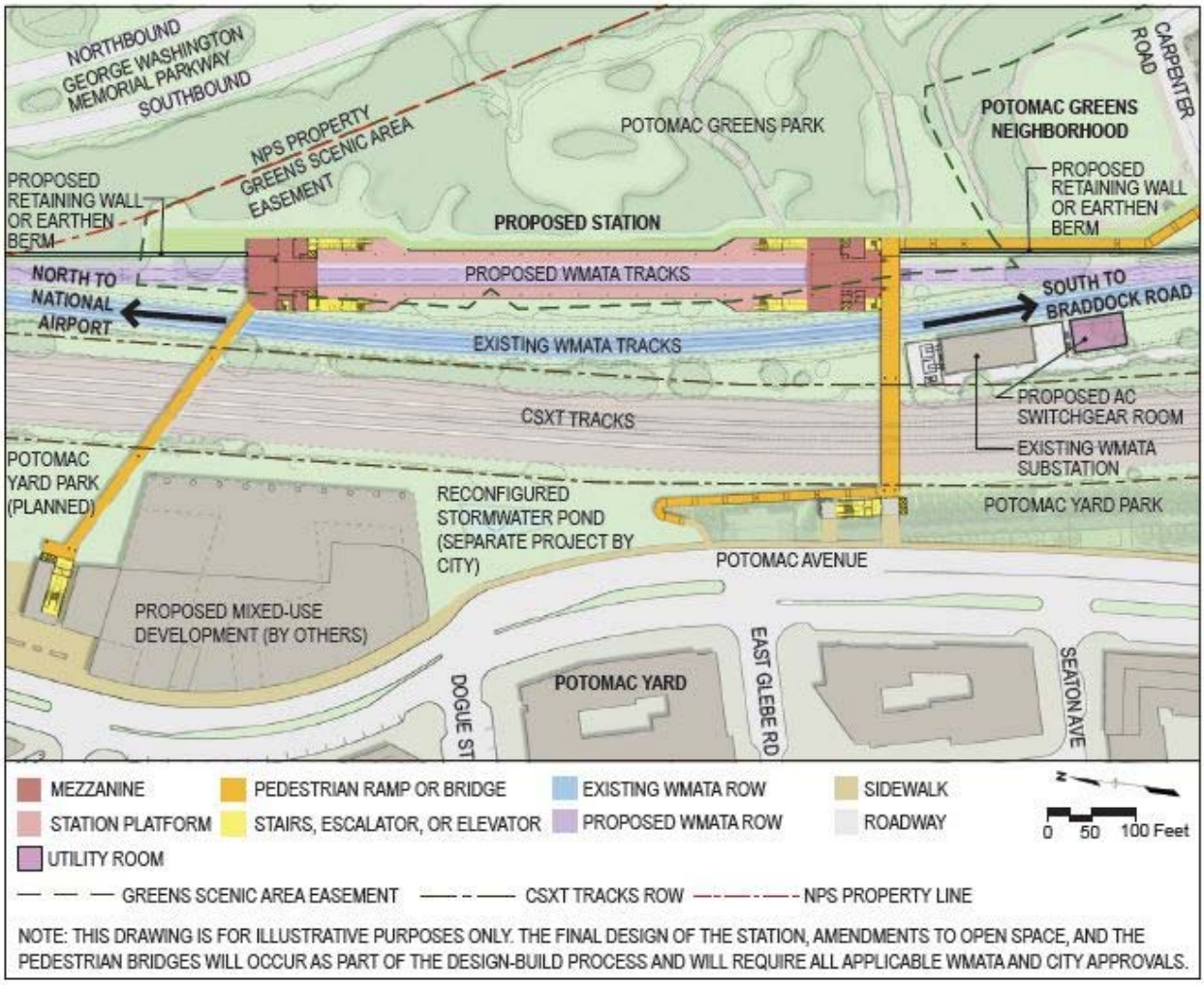
1.2.5. Bicycle Parking Facilities – bike parking facilities will be located at each station entrance.

1.2.6. Stormwater Management – Stormwater quantity and quality will be addressed through methods such as dry swales, storm filters and other innovative measures.

1.2.7. Re-aligned Track –±3,750-foot of new or re-aligned track will be constructed to provide a straight section of track for the proposed station location per design standards. This new, realigned track will be constructed east of, and adjacent to, the existing Metrorail tracks. The new tracks will include several unique design characteristics such as a double crossover (special track work) approximately 100 feet north of the station that allows for trains to move from one track to the other for single-tracking operations and maintenance. An earthen berm will be constructed to support the realigned track and screen the lower part of the eastern station wall. The existing tracks and ties not needed for the proposed project will be left in place.

The proposed project utilizes federal funds and a Final Environmental Impact Statement (FEIS) was prepared for compliance with the National Environmental Policy Act (NEPA). The FEIS is further described in the sections below. The Federal Transit Administration (FTA) and the City of Alexandria, in cooperation with the Washington Metropolitan Area Transit Authority (WMATA or Metro) and the National Park Service (NPS) prepared the FEIS. FTA serves as the lead federal agency and NPS is a cooperating agency. The City of Alexandria will be responsible for the construction of the station. WMATA will accept and operate the Metrorail Station. The proposed project is anticipated to begin in late 2017, with construction lasting for approximately 3 years. A detailed drawing of the proposed station as shown in the Final Environmental Impact Statement (FEIS) is provided below.

The wetland impacts are shown on the project figures contained in Appendix B and further detailed in Section 5 below. Photos of the project area can be seen in Appendix C.



2. PROJECT BACKGROUND AND HISTORY

In the 1960s and 1970s the project area was identified by the Metrorail system as a site for a new station that would benefit future development. In the 1980s, the *Alexandria 2020* plan proposed a new mixed-use development with a Metrorail station around the existing railroad yard, which was being phased out. In 1992/1999, the City's *Potomac Yard/Potomac Greens Small Area Plan* identified the benefit of the proposed Metrorail station. In 2010, further investigation and alternatives studies were conducted by the City, resulting in plans for the high-density, transit-oriented neighborhood at Potomac Yard. As such, in 2011 the project began the formal process outlined by NEPA as the City of Alexandria planned on seeking federal funding for a portion of the project. A FEIS, *Potomac Yard Metrorail Station: Final Environmental Impact Statement*¸ dated June 2, 2016, for compliance with NEPA has been prepared. As part of development of the FEIS, coordination and studies were conducted regarding the project's purpose and need, alternatives analysis, wetlands, threatened and endangered species, and historic resources which are summarized in sections below. Other key documents related to the NEPA process include:

- FTA Record of Decision (ROD) dated October 31, 2016
- NPS ROD dated November 1, 2016
- NPS Statement of Findings (SOF) for Protected Wetlands and Floodplain Management dated November 1, 2016
- Agreement Regarding Potomac Yard Metrorail Station between NPS and the City dated November 1, 2016
- Agreement Regarding Wetland Mitigation for the Potomac Yard Metro between NPS and the City dated November 1, 2016
- Memorandum of Agreement between the FTA, City of Alexandria, VA, MWAA, NPS, and the Virginia State Historic Preservation Office, Regarding the Potomac Yard Metrorail Station dated October 24, 2016

As RODs and Agreements have been accepted and signed by the NPS, accepting the selected alternative for the Potomac Yard Metrorail Station, no further NEPA action is required. Sections below highlight information in the FEIS, RODs, and other important documentation. Copies of these documents can be provided upon request.

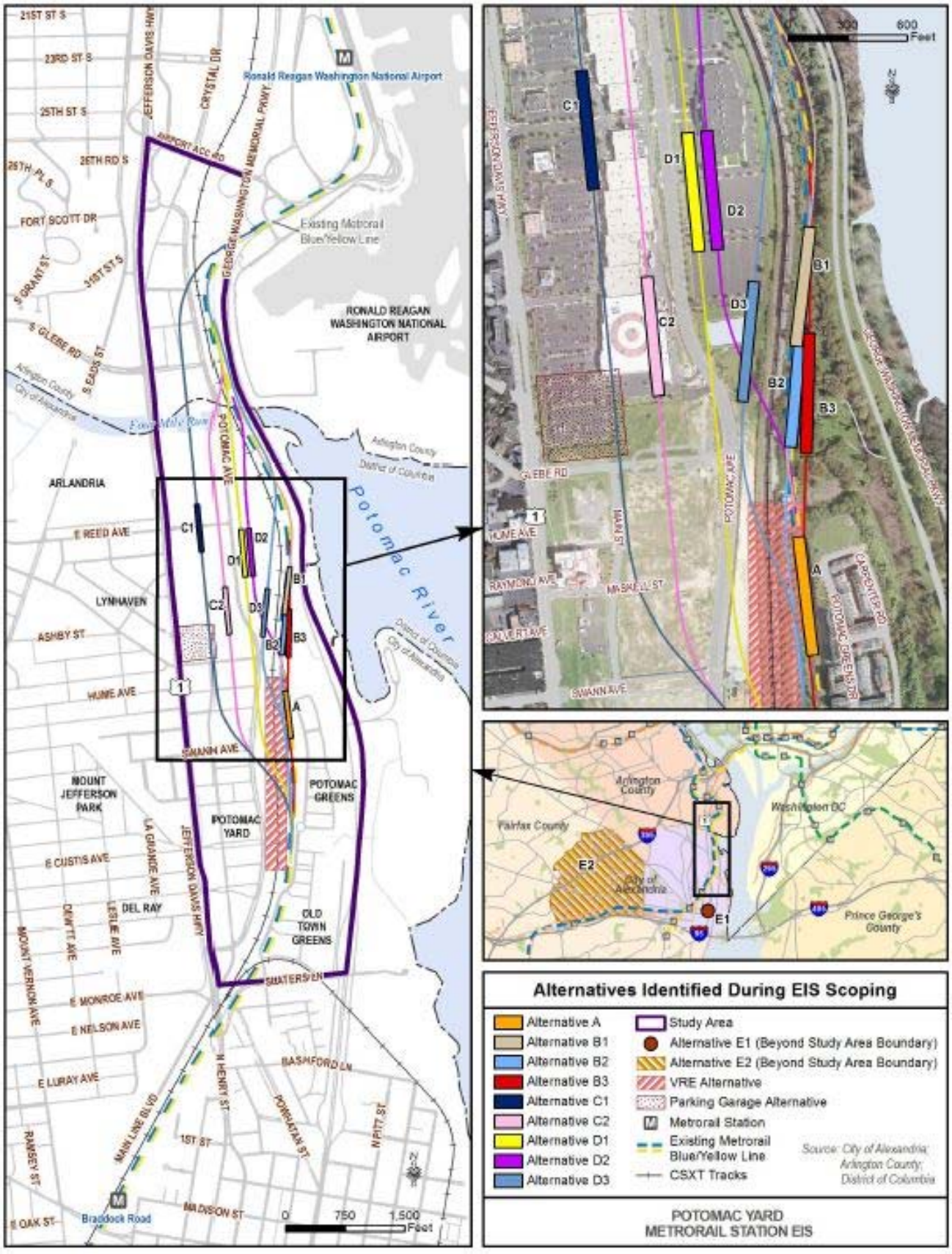
2.1. PURPOSE AND NEED

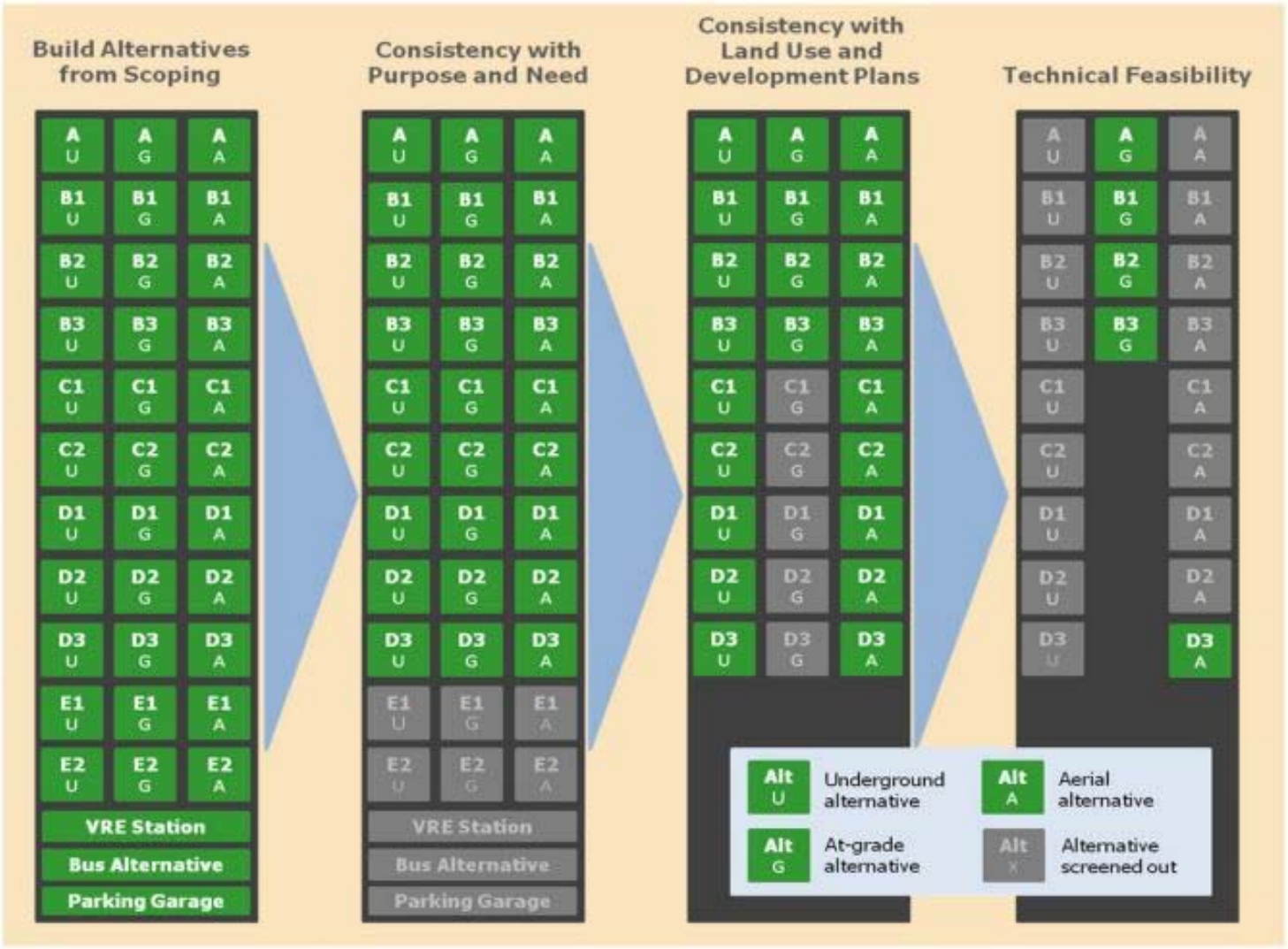
The project purpose and need was developed and defined in the FEIS. As stated in the FEIS, "the project is proposed to improve local and regional transit accessibility to and from the Potomac Yard area adjacent to the U.S. Route 1 corridor for current and future residents, employees, and businesses." The proposed project is needed for the following reasons:

- The area does not currently have direct access to regional transit services
- Regional trips will be promoted via existing local bus service connection to transit service
- To reduce vehicular traffic on U.S. Route 1 therefore decreasing congestion and emissions
- The proposed project supports the City's redevelopment plans
- Additional transportation options are necessary to accommodate travel demand in area

2.2. ALTERNATIVES ANALYSIS

Extensive alternatives were evaluated for the location and structure of the proposed project's station. A total of 36 alternatives were considered and evaluated against consistency with purpose and need, consistency with land use and development plans, and technical feasibility. Graphics depicting these studies from the FEIS are below.


Ronald Reagan Washington National Airport
Existing Metrorail Blue/Yellow Line
RONALD REAGAN WASHINGTON NATIONAL AIRPORT
ARLANDRIA
LYNHAVEN
MOUNT JEFFERSON PARK
POTOMAC YARD
POTOMAC GREENS
OLD TOWN GREENS
DEL RAY
Potomac River
Four Mile Run
Arlington County
District of Columbia
City of Alexandria
Braddock Road
0 750 1,500 Feet
0 300 600 Feet
Arlington County
Fairfax County
Washington DC
Prince George's County
E1
E2
Alternatives Identified During EIS Scoping
Alternative A
Alternative B1
Alternative B2
Alternative B3
Alternative C1
Alternative C2
Alternative D1
Alternative D2
Alternative D3
Study Area
Alternative E1 (Beyond Study Area Boundary)
Alternative E2 (Beyond Study Area Boundary)
VRE Alternative
Parking Garage Alternative
Metrorail Station
Existing Metrorail Blue/Yellow Line
CSXT Tracks
Source: City of Alexandria; Arlington County; District of Columbia
POTOMAC YARD METRORAIL STATION EIS



After the scoping process, alternatives in areas A, B, and D as well as the No-Build alternatives were considered. Build alternatives were considered for at-grade, aboveground, and underground station options. They are briefly described in Table 1 below.

Table 1: Summary of Alternatives Analysis		
Name	Location/ Description	Conclusions/ Recommendations
No Build	Includes the existing transportation network plus projects within the study area that will be in place by 2040	Does not serve the project's purpose and need
A	Located generally within the existing Metrorail Reservation site at the north end of Potomac Greens	Location not within proximity of Potomac Yard development; Access required from GWMP

Table 1: Summary of Alternatives Analysis		
B (Selected Alternative)	Located north of Potomac Greens between the GWMP and the CSX railroad tracks	Best serves purpose and need; best reduces vehicular trips; best serves highest amount of people
B-CSX	Located between the GWMP and the CSX railroad tracks relocated to west	On land currently planned for development, thereby reducing development, and therefore employees/residents using the station; Affects current CSX operations
D	Located west of the CSX railroad tracks near the existing Potomac Yard Shopping Center	On land currently planned for development, thereby reducing development, and therefore employees/residents using the station; Access required from GWMP which is not allowed by NPS

The graphic to the right depicts the locations of the alternatives advanced for study in the FEIS. A more detailed graphic is included in Appendix D.

In May 2015, after a public hearing and comment period for the Draft EIS (DEIS), Alternative B was selected as the preferred alternative (proposed project) because the alternative best meets the project's purpose and need and provides the following:

- Supports the high-density mixed-use development planned at Potomac Yard and adjacent communities and realizing the transportation, economic development, and fiscal benefits to the community.
- New direct access point to the regional transit system and maximizes potential transit ridership, the shift of automobile trips to other modes, and accessibility to the regional transit system for the greatest number of area residents and employees.

The FTA determined in its ROD that the Preferred Alternative is also the environmentally preferable alternative. It was selected because it best meets the purpose and need while providing the environmental benefits to the GWMP through the Net Benefits Agreement with NPS. The selection of the environmentally preferable alternative is based on the overall benefits of the Preferred Alternative and the beneficial impact of the mitigation commitments for the Preferred Alternative make in environmentally preferable to the No Build Alternative and other Build Alternatives.

Two construction access options were proposed. The Access without connection to the GWMP was selected, Construction Access Option 2. Construction Access Option 2 was specified in the MOA with the Virginia Department of Historic Resources (VDHR) and NPS as commercial vehicles are prohibited on the GWMP.

Additionally, two design options were evaluated for the preferred design regarding the station walls. Design Option 1 included full retaining and station walls whereas Design Option 2 included an earthen berm along the station wall and under the maintenance access easement around the station. This berm screens the maintenance access easement and realigned track beds from view. Although additional wetland impacts are proposed with Design Option 2 versus Design Option 1, Design Option 2 is preferred because it reduces the visual impacts on the GWMP. Design Option 1 has greater construction and visual impacts to the NRHP listed GWMP.

2.3. WETLANDS

A wetlands and waters delineation was conducted by AECOM, Inc. in 2011 per the *1987 USACE Wetlands Delineation Manual* and *Interim Regional Supplement to the USACE Wetland Delineation Manual: Atlantic Gulf and Coastal Plan Region*. Additionally, lands owned and administered by NPS were also delineated using the methods described in the *National Park Service Procedural Manual #77-1: Wetland Protection (2011 edition)*. This investigation was field confirmed by the USACE and resulted in an Approved Jurisdictional Determination (AJD) issued from the USACE on September 28, 2012 and reissued on September 27, 2017. A copy of this AJD is included in Appendix E with drawings reflecting USACE and NPS jurisdictional features.

The delineation limits consisted of 117.8-acre area. The delineation conducted in accordance to the USACE methodology identified a total of 12.42 acres of non-tidal wetlands and 2.66 acres or 2,191 linear feet of waters. Additionally, 5.92 acres of wetlands were identified within the delineation limits that would be jurisdictional to the NPS, but not to the USACE. To note, the 17-acre project area is a portion of the 117.8-acre delineation area.

There are no wetlands, open water, streams, or associated upland buffers within the proposed project corridor or compensation areas that are under a deed restriction, conservation easement, restrictive covenant, or other land use protective instrument (protected areas).

2.4. ASSESSMENT OF FUNCTIONS AND VALUES

A functions and values assessment was completed in 2015 as part of the FEIS and found that the onsite wetlands provide the functions and values described in Table 2 below. A copy of the functions and values assessment can be provided upon request.

Table 2: VIMS Functional Assessment Summary

FUNCTION	COMMENT
Flood Protection	The wetlands appear to provide flood protection from surface water detention, and the wetlands abate a small degree of storm surge. The watershed contains a high percentage of impervious surfaces and the effective flood storage is small or non-existent upslope of or above the

Table 2: VIMS Functional Assessment Summary	
	wetland. The developed nature of the surrounding landscape provides few opportunities for natural flood protection.
Sediment and toxicant retention	The wetlands may also provide sediment/toxicant retention as the wetland outflow is into the Potomac River, which is used for drinking water. Phase I and Phase II Environmental Site Assessments have been conducted for the project. Subsurface soil and fill material consisting primarily of fly ash and some ballast with elevated metals content (arsenic), and residual petroleum-impacted soils near the former freight rail yard's oil/water separator ponds, have been identified within the project site. No soils exhibiting hazardous waste characteristics were identified. Shallow groundwater in the vicinity of the project site is likely contaminated with residual levels of petroleum hydrocarbons and metals.
Wildlife habitat	While the wetlands contain numerous invasive species, decreasing habitat stratification and food source variety, the relative value of the wetland as a habitat island surrounded by development is beneficial. Deer tracks, beaver marks, frogs, birds, and insects were observed on-site.
Recreational value	A multi-use trail is located within the wetland complex. Visitors were observed using these trails for walking. A positive indicator of this value is that the wetland is within a short drive or safe walk from highly populated public and private areas. This wetland provides value through highly accessible recreational opportunities.
Scientific and educational value	This feature has a paved trail for handicap access and informative plaques placed along the trail.
Uniqueness/heritage	The wetland complex is surrounded by developed residential transportation, and commercial uses which are further increasing in density. These factors mean that the opportunity for visitors to experience a typical wetland class is limited for this geographic location, and the wetland complex provides value through the special experience not afforded elsewhere.

2.5. COMPENSATORY MITIGATION

An agreement on compensatory mitigation was reached with the NPS regarding impacts to parklands and impacts to wetlands within NPS land which total 4.37 acre. The details of this agreement are outlined in the NPS ROD. Mitigation related to wetland impacts is summarized in Section 5 below. Non-wetland related mitigation includes:

2.5.1. USE OF NPS PARKLAND

Mitigation for use of NPS parkland is completed by the City of Alexandria's $12M contribution to NPS Impact Fund Account per the Agreement Regarding Potomac Yard Metrorail Station between NPS and the City dated November 1, 2016, also known as the Net Benefits Agreement.

2.5.2. GWMP PROPERTY

Up to 0.33 acre of GWMP property will be permanently required to accommodate the connecting track, and up to 0.42 acre of GWMP property will be temporarily used to accommodate construction access and staging. Up to 1.94 acres of the GSAE will be permanently required to accommodate the station building and connecting track, and up to 3.09 acres of GSAE will be temporarily used to accommodate construction access and staging. Mitigation for these loses by NPS will be provided via land-swap between NPS and the City. The land provided to NPS as part of this exchange must be of equal or greater value than the land conveyed by NPS to the City. Additionally, the City will convey the remaining 6.32 acres of the GSAE to NPS.

2.5.3. OTHER

Further mitigation measures for Threatened and Endangered Species and Historic Resource considerations are further described below.

2.6. THREATENED AND ENDANGERED SPECIES

As part of the FEIS, an evaluation of impacts to ecosystems and federally and state protected species was conducted and presented in a technical memorandum. The technical memorandum identified four listed species that have the potential to occur within the FEIS project study area. The species are listed below in Table 3 with their protections status and the conclusion in the FEIS. As a result of the research on the above-mentioned species, no further coordination was conducted as a part of the FEIS. A copy of the FTA's correspondence with applicable regulatory agencies as part of the FEIS is included in Appendix D.

Table 3: FEIS Threatened and Endangered Species Summary

Species		**Status**	**Analysis Conclusion**	**FEIS Action**
Sensitive Joint- Vetch	*Aeschynomene virginica*	Federally Listed as Threatened	Species Not Present	A survey was completed and no species was identified within the study area
Bald Eagle	*Haliaeetus leucocephalus*	Bald and Golden Eagle Protection Act of 1940	Unlikely to disturb nesting bald eagles	No nests were identified by the Center for Conservation Biology (CCB) Eagle Nest Mapper within 660 feet for the proposed project

Table 3: FEIS Threatened and Endangered Species Summary				
Species		**Status**	**Analysis Conclusion**	**FEIS Action**
Appalachian Springsnail	*Fontigens bottimeri*	State Listed as Endangered	No suitable habitat present.	VDGIF did not provide comment
Wood Turtle	*Glyptemys insculpta*	State Listed as Threatened	Potential habitat present	VDGIF did not provide comment

2.7. HISTORIC RESOURCES

The Section 106 process was undertaken as part of the development of the FEIS. In e-mail correspondence dated March 15, 2011 the USACE indicated intent to be a participating party in the FEIS process and in a letter dated May 19, 2015, USACE designated FTA as the lead federal agency on Section 106 coordination. This correspondence is included in Appendix F. As part of the Section 106 process, a Memorandum of Agreement (MOA) was developed and subsequently signed on October 24, 2016 by FTA, the City, WMATA, the Virginia Department of Historic Resources (VDHR) and NPS to address adverse impacts to historic resources. A copy of the MOA is provided in Appendix D.

In the MOA, five historic properties are considered within the proposed project's Area of Potential Effect (APE). The FTA determined, and VDHR concurred, that the proposed project will result in an adverse effect on four resources: the GWMP, Mount Vernon Memorial Highway (MVMH), Parkways of the National Capitol Region (PNCR), and the GSAE as a contributing resource to the aforementioned resources. The adverse effect is due to the removal of contributing vegetative features of the GWMP and MVMH for construction and staging, permanent and temporary use of the GWMP and GSAE land for construction, and permanent construction of rail facilities within the National Register boundaries of the GWMP and MVMH. Abington Apartments were reviewed as part of the determination of effect. A No Adverse Effect was determined and concurred upon.

Two archaeological resources (44AX0221 and 44AX0222) were noted within the vicinity of the proposed project's APE. All work occurring during construction near these two resources, will be monitored by a Professional Archaeologist. Specifically, the installation of protective fencing around these areas and any ground disturbing activities within their vicinity. The archaeologist will review any design drawings from excavation within 50-feet of these areas and specify type and procedures for installation of protective fencing. As such, no impacts to these resources are proposed.

3. EXISTING SITE DESCRIPTION

3.1. SITE DESCRIPTION

The proposed project area is approximately 17 acres, and is located east of the existing Potomac Yard Shopping Center and CSX railroad, and west of the GWMP. It is currently undeveloped, except for the existing metrorail lines which the new tracks will tie into. A system of walking paths can be found in the

middle of the area with both paved paths and boardwalk areas. Photographs of the project corridor are contained in Appendix C.

3.2. TOPOGRAPHY AND SURFACE DRAINAGE

The project area is shown on the Alexandria, Virginia U.S.G.S. quadrangle digital topographic map. The map identifies the proposed project area around 40 feet in elevation (NAVD88). The proposed project is located within the Potomac River basin (HUC 02070010). The onsite stormwater flows west to east, and south through depressional areas, offsite, and into the Potomac River.

3.3. FLOODPLAIN

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Alexandria, Virginia, Community Panel Number 5155190033E, dated June 16, 2011 the proposed project is located within the 100-year floodplain (Zone AE). A copy of the map is included in Appendix G. Considerations were taken in the FEIS to address impacts to floodplains including locating the station facilities, tracks, storage and utilities above the 100-year and 500-year floodplain areas, and the station's orientation parallel to floodwater flow, generally following the edge of the floodplain.

3.4. THREATENED AND ENDANGERED SPECIES DATABASE UPDATE

The Virginia Department of Game and Inland Fisheries' (VDGIF) Virginia Fish and Wildlife Information Service (VaFWIS), VDGIF's Northern Long-Eared Bat (NLEB)Winter Habitat and Roost Trees Application, VDGIF's Little Brown Bat (MYLU) and Tri-colored (PESU) Bat Winter Habitat and Roosts Application, U.S. Fish and Wildlife Service's (USFWS) Information, Planning, and Conservation system (IPaC), and Center for Conservation Biology (CCB) Bald Eagle Mapping Portal were reviewed for updated information regarding known federal or state threatened or endangered (T&E) species, wildlife or plant resources that have been documented within the project limits or a two-mile radius. A copy of the database results is presented in Appendix H.

3.4.1. VDGIF

The Virginia Department of Game and Inland Fisheries' (VDGIF) Virginia Fish and Wildlife Information System (VAFWIS) was reviewed to identify documented occurrences of federal or state listed threatened and endangered species within the project limits or a 2-mile radius of the proposed project area. No occurrences were identified on the VAFWIS Search Report dated August 18, 2017.

VDGIF's Northern Long-Eared Bat (NLEB) Winter Habitat and Roost Trees Application was reviewed to identify winter habitat within 0.25 mile of the proposed project or known maternity roost trees within 150 feet of the proposed project (accessed August 18, 2017). No known NLEB winter hibernaculum or maternity roost trees were identified within the proposed project area or referenced ranges. Therefore, it is not anticipated that the proposed project would have an adverse impact on this species.

VDGIF's Little Brown Bat and Tri-colored Bat Winter Habitat and Roosts Application was reviewed to identify little brown bats (MYLU) and tri-colored bats (PESU) hibernaculum within 0.25 mile of the proposed project and known roost trees within 150 feet of the proposed project (accessed August 18, 2017). No known MYLU or PESU winter hibernaculum or maternity roost trees were identified within the

proposed project area or referenced ranges. Therefore, it is not anticipated that the proposed project would have an adverse impact on these species.

3.4.2. USFWS

The Official Species List dated August 18, 2017 did not document threatened, endangered, or candidate species. In addition, no critical habitat was identified within the proposed project area.

3.4.3. CCB

The CCB's Eagle Nest Mapper was reviewed (accessed August 18, 2017) to determine the presence of known bald eagles' nests within the vicinity of the proposed project area. No nests were identified.

3.5. HISTORIC RESOURCES DATABASE UPDATE

VDHR's Virginia Cultural Resource Information System (V-CRIS) was reviewed to determine if any additional resources within the proposed project area have been listed on the National Register of Historic Places (NRHP) (accessed June 2, 2017). One resource, Richmond, Fredericksburg, and Potomac Railroad (VDHR ID# 500-0001), was identified as not evaluated for listing within the proposed project area. This resource appears to be the same as the existing CSX railroad lines, and to have been evaluated in 2016 through a Phase I Architectural Survey for the Virginia High Speed Rail project. The surveyor recommended the resource as potentially eligible for listing on the NRHP under Criterion A: resources "that are associated with events that have made a significant contribution to the broad patterns of our history." As this the proposed project does not intend to alter the CSX railroad line, and the impacts will be limited to pedestrian bridges over the resource, no effects are anticipated on the resource. A copy of the database report is included in Appendix I.

Additionally, the proposed project is within a City-regulated zoning district, the "Old and Historic Alexandria District", however this is a local district and not regulated by VDHR.

4. WETLAND IMPACTS

The proposed project will result in unavoidable permanent impacts to 1.65 acres of non-tidal vegetated wetlands. The proposed project will also result in temporary impacts to 2.97 acres of non-tidal vegetated wetlands. While 4.62 acres of impacts are regulated by the USACE/VDEQ, 4.37 acres of these wetlands are on NPS property. The project impacts are summarized in Tables 4 and 5 below and shown in the project figures contained in Appendix B.

Table 4: Wetlands and Waters Impact Details													
			*USACE/VDEQ and NPS Jurisdictional**				*USACE/VDEQ Jurisdictional ONLY***				*NPS Jurisdictional ONLY****			
Impact Site	**Sheet No.**	**Impact Description**	**Permanent Impact Quantities (AC)**		**Temporary Impact Quantities (AC)**		**Permanent Impact Quantities (AC)**		**Temporary Impact Quantities (AC)**		**Permanent Impact Quantities (AC)**		**Temporary Impact Quantities (AC)**	
			PEM	**PFO**	**PEM**	**PFO**	**PEM**	**PFO**	**PEM**	**PFO**	**PEM**	**PFO**	**PEM**	**PFO**
A	4	F, S, NT, PE, V	0.100	0.000	0.000	0.000	0.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000
B	4, 5	F, S, NT, PE, V, MC	0.470	0.880	0.000	0.000	0.000	0.130	0.000	0.000	0.000	0.000	0.000	0.000
C	4, 5	F, NT, TE, V, MC	0.000	0.000	1.590	1.290	0.000	0.000	0.000	0.090	0.000	0.000	0.000	0.040
Total Impacts			0.570	0.880	1.590	1.290	0.070	0.130	0.000	0.090	0.000	0.000	0.000	0.040
F=fill; EX=excavation; S=Structure; T=tidal; NT=non-tidal; TE=temporary; PE=permanent; PR=perennial; IN=intermittent; SB=subaqueous bottom; DB=dune/beach; IS=hydrologically isolated; V=vegetated; NV=non-vegetated; MC=Mechanized Clearing of PFO														
* These wetland impacts are jurisdictional to the USACE, VDEQ, and NPS.														
** These wetland impacts are jurisdictional to the USACE and VDEQ, and not NPS.														
***These wetland impacts are jurisdictional to the NPS, and not USACE and VDEQ.														

Table 5: Summary of Impacts							
Agency Jurisdiction	**Permanent Impact Quantities (AC)**			**Temporary Impact Quantities (AC)**			**TOTAL IMPACTS (AC)**
	PEM	**PFO**	**TOTAL**	**PEM**	**PFO**	**TOTAL**	
USACE & VDEQ Jurisdictional Impacts	0.640	1.010	1.650	1.590	1.380	2.970	4.620
NPS Jurisdictional Impacts	0.570	0.880	1.450	1.590	1.330	2.920	4.370

Impact Sites A and B are permanent impacts due to the structures associated with the station and infrastructure. Permanent impacts are limited to the station footprint and grading for the station. Impact Site C consists of temporary impacts from the construction access and laydown requirements.

4.1. METHOD/SEQUENCE OF CONSTRUCTION

It is anticipated that the major construction activities will take place as follows:

- Clearing and grading to prepare the construction site and staging areas;
- Relocating any utilities
- Constructing foundations and walls for the station;
- Constructing the station structure, platforms, mezzanines, and roof;
- Completing the trackwork for the new mainline segment through the station
- Establishing the train control systems and traction power systems;
- Connecting the new track segment to existing mainline and re-routing trains along the new track;
- Completing station architectural finishes;
- Grading and landscaping the station area; and,
- Restoring the natural areas and cultural landscape elements within construction staging areas (including restoring the temporarily impacted wetlands).

5. COMPENSATORY MITIGATION

5.1. USACE AND VDEQ PROPOSED COMPENSATORY MITIGATION

The proposed project exceeds a 0.10 ac of wetlands impacts or 300 linear feet of stream impacts. Therefore, compensatory mitigation for the proposed project impacts is required and proposed. A summary of the required compensatory mitigation utilizing the USACE and VDEQ standard ratios is provided below in Table 6.

Table 6: USACE/VDEQ Compensatory Mitigation Summary					
	Permanent Impact Quantities (AC) & Cowardin Classification		**Temporary Impact Quantities (AC) & Cowardin Classification**		**Total Credits**
	PEM	**PFO**	**PEM**	**PFO**	
Total Impacts (AC)	0.64	1.01	1.59	1.38	
Compensatory Mitigation Ratio (X:1)	1	2	1	1	
Required Compensatory Mitigation	0.64	2.02	1.59	1.38	5.63

The Environmental Protection Agency's Compensatory Mitigation Rule outlines a preference for mitigation bank or in-lieu fee program credit purchase over permittee-responsible mitigation. However, the restoration proposed at Dyke Marsh lies approximately 3 miles south of the proposed project area within the same watershed and provides mitigation in regard to function and value. Freshwater tidal marsh exists in that area and will be expanded, enhanced and restored. As such this is the ecologically preferable mitigation scenario for the proposed project. The project is overseen by NPS including monitoring and success criteria evaluations. Further information regarding the Dyke Marsh Contribution can be found in section 5.2.1 below.

Compensatory mitigation is being provided by the City of Alexandria through a contribution of $1M per acre (4.37 ac) of a total of $4.37M to NPS for the restoration at Dyke Marsh. Per the standard USACE and VDEQ mitigation ratios, mitigation required for permanent impacts totals 5.63 credits. Research was conducted to obtain current market value of compensatory mitigation credits from privately-owned compensatory mitigation banks serving the project's watershed. Based on a conservative estimate of $100,000 per credit, the cost for the project's required compensatory mitigation credits would be approximately $563,000. The contribution to Dyke Marsh would allow for the purchase of 43.7 credits from a privately owned compensatory mitigation bank at the expected cost, totaling nearly 8 times the required 5.63 credits. As such, the City of Alexandria believes the contribution to Dyke Marsh provides compensatory mitigation in excess of the standard requirements, and should therefore be sufficient to meet the compensatory mitigation requirements for the project.

Restoration of onsite temporary impacts as part of the compensatory mitigation is not proposed for the USACE or VDEQ permits, but is required by the NPS and will be monitored by NPS.

5.2. NPS REQUIRED COMPENSATORY MITIGATION

An agreement with the NPS regarding compensatory mitigation was developed as part of the development of the FEIS. Per the *Agreement Regarding Wetland Mitigation for the Potomac Yard Metro* between NPS and the City dated November 1, 2016, the following compensatory mitigation is required for the project:

5.2.1. DYKE MARSH CONTRIBUTION

The City of Alexandria will contribute up to $1,000,000 per acre of impacts, not to exceed $4.37M, into the NPS Impact Fund Account for the restoration of Dyke Marsh Wildlife Preserve (Dyke Marsh) as compensatory mitigation for 1.45 acres of permanent impacts to 0.57-acre PEM and 0.88 acre PFO wetlands at a 1:1 ratio and for temporal mitigation for temporary wetland impacts to 2.92 acres (1.59 acres PEM and 1.33 acres PFO).

The Dyke Marsh project's proposed restoration and creation is for freshwater tidal marsh restoration and creation of bottomland hardwood forest restoration. Dyke Marsh is one of the few remaining freshwater marshes on the Potomac River. Such marshes provide habitat for many species of plants and animals, including rare species and species of state concern. Before 1972, the marsh was extensively dredged for its underlying gravel deposits, which resulted in accelerated erosion and loss of marsh. Significant federal legislation resulted in the end to this practice, as Dyke Marsh was described as "an area of irreplaceable wetlands near the Nation's Capital which is valuable for the production and preservation of wildlife." According to historical document, the marsh and adjacent land covered approximately 650 acres, but is currently about 60 acres, plus 15-20 acres west of the GWMP. The NPS is required to restore Dyke Marsh, under Public Law 93-251, and the Water Resources Development Act of 2007. A ROD for the Dyke Marsh Restoration and Long-term Management Plan/ EIS was signed June 9, 2016. The preferred alternative, "Hydrologic Restoration and Fullest Possible Extent of Wetland Restoration" was selected for implementation. The wetland restoration and creation will change the sediment transport, enhance wildlife habitat, and reduce threats via erosion to threatened and endangered species. The first phase of this restoration includes:

- Installation of a breakwater
- Establishment of marsh in the footprint of the historic promontory
- Placement of fill in the deep channels within park boundaries
- Restoration of marsh along edge of existing marsh in waters less than 4 feet deep (40 acres) to stabilize marsh and protect Hog Island Gut

It should be noted that the USACE accepted a contribution to the Dyke Marsh project as a form of compensatory mitigation for the Ronald Reagan Washington National Airport Runway Safety Area Enhancement. This contribution provided the funding for a portion of the first phase of restoration.

5.2.2. RESTORATION OF TEMPORARY IMPACTS

The City of Alexandria will restore 2.92 acres of temporary impacts to 1.59 acres PEM and 1.33 acres PFO wetlands within the GSAE and GWMP by preparing a mitigation plan for temporary impacts and 5 years of monitoring consisting of two monitoring events for the first three years, one monitoring event the last two years. This on-site restoration is for temporary construction impacts to wetlands jurisdictional by the NPS. Restoration of temporary impacts is not proposed as mitigation for temporary impacts to USACE and VDEQ jurisdictional wetlands.

5.2.3. SUMMARY

A summary of provided and agreed upon NPS required mitigation measures is included in Table 7 below.

Table 7: NPS Compensatory Mitigation Summary					
	Permanent Impact Quantities (AC)		**Temporary Impact Quantities (AC)**		**Total Credits/ Acreage Provided**
	PEM	**PFO**	**PEM**	**PFO**	
Total NPS Wetland Impacts (AC)	0.57	0.88	1.59	1.33	
Required Contribution to Dyke Marsh (X:1)	1	1	1	1	
Required Restoration of Temporary Impacts (X:1)	0	0	1	1	
Total	0.57	0.88	3.18	2.66	7.29

6. PUBLIC INVOLVEMENT

6.1. PUBLIC INVOLVEMENT TO DATE

Public involvement was an integral part of the FEIS process. A public comment period and series of community meetings between March 31, 2015 and May 18, 2015 aided the City in determining the preferred location of the proposed station. The community meetings included three subject-specific Community Open Houses, the second of which focusing on "Wetlands, GSAE, City Parkland, NPS Land, Visual Resources, and Cultural Resources." Additionally, a public hearing as part of the FEIS took place before the WMATA board on April 30, 2015, and at the City Council on May 16, 2015. The project was also discussed by the following City boards:

- Board of Architectural Review
- Environmental Policy Commission
- Planning Commission
- Potomac Yard Metrorail Implementation Work Group

6.2. ADJACENT PROPERTY OWNER MAILING ADDRESSES

A list of property owners adjacent to the proposed project area can be found in Appendix J.

APPENDIX A. JOINT PERMIT APPLICATION FORM

FOR AGENCY USE ONLY	
	Notes:
JPA#	

APPLICANTS

PLEASE PRINT OR TYPE ALL ANSWERS. If a question does not apply to your project, please print N/A (not applicable) in the space provided. ***If additional space is needed, attach extra 8 ½ x 11 inch sheets of paper.***

Check all that apply			
Pre-Construction Notification (PCN) ☐ NWP # _____ (*For Nationwide Permits ONLY - No DEQ-VWP permit writer will be assigned*)	SPGP ☐	DEQ Reapplication ☐ Existing permit number: _____	Receiving federal funds ■ Agency providing funding: Federal Transit Administration

PREVIOUS ACTIONS RELATED TO THE PROPOSED WORK (Include all federal, state, and local pre-application coordination, site visits, previous permits, or applications whether issued, withdrawn, or denied)

Historical information for past permit submittals can be found online with VMRC - https://webapps.mrc.virginia.gov/public/habitat/ - or VIMS - http://ccrm.vims.edu/perms/newpermits.html

Agency	Action / Activity	Permit/Project number, including any non-reporting Nationwide permits previously used (e.g., NWP 13)	Date of Action	If denied, give reason for denial
USACE	AJD	2012-02012	9/28/2012	

1. APPLICANT, AGENT, PROPERTY OWNER, AND CONTRACTOR INFORMATION
The applicant(s) is/are the legal entity to which the permit may be issued (see How to Apply at beginning of form). The applicant(s) can either be the property owner(s) or the person/people/company(ies) that intend(s) to undertake the activity. The agent is the person or company that is representing the applicant(s). If a company, please also provide the company name that is registered with the State Corporation Commission (SCC), or indicate no registration with the SCC.

Legal Name(s) of Applicant(s)			Agent (if applicable)		
City of Alexandria c/o Jason Kacamburas			Kimley-Horn c/o Katie Crum, Elizabeth Atherton		
Mailing address			Mailing address		
301 King Street, Suite 3200			11400 Commerce Park Drive, Suite 400		
City	State	ZIP Code	City	State	ZIP Code
Alexandria	VA	22314	Reston	VA	20191
Phone number w/area code	Fax		Phone number w/area code	Fax	
703-746-4049			757-355-6672		
Mobile	E-mail		Mobile	E-mail	
	jason.kacamburas@alexandriava			katie.crum@kimley-horn.com	
State Corporation Commission Name and ID number (if applicable)			State Corporation Commission Name and ID number (if applicable)		

Certain permits or permit authorizations may be provided via electronic mail. If the applicant wishes to receive their permit via electronic mail, please provide an e-mail address here: jason.kacamburas@alexandriava.gov; katie.crum@kimley-h

1. APPLICANT, AGENT, PROPERTY OWNER, AND CONTRACTOR INFORMATION (Continued)

Property owner(s) legal name, if different from applicant See Applicant Info			Contractor, if known Not Yet Selected		
Mailing address			Mailing address		
City	State	ZIP code	City	State	ZIP code
Phone number w/area code	Fax		Phone number w/area code	Fax	
Mobile	E-mail		Mobile	E-mail	
State Corporation Commission Name and ID number (if applicable)			State Corporation Commission Name ID number (if applicable)		

2. PROJECT LOCATION INFORMATION

(Attach a copy of a detailed map, such as a USGS topographic map or street map showing the site location and project boundary, so that it may be located for inspection. Include an arrow indicating the north direction. Include the drainage area if the SPGP box is checked on Page 7.)

Street Address (911 address if available) Potomac Greens Drive	City/County/ZIP Code Alexandria, VA 22305
Subdivision	Lot/Block/Parcel #

Name of water body(ies) within project boundaries and drainage area (acres or square miles).
N/A

Tributary(ies) to: Potomac River
Basin: Fourmile Run Sub-basin: Fourmile Run
(*Example: Basin: James River Sub-basin: Middle James River*)

Special Standards (based on DEQ Water Quality Standards 9VAC25-260 et seq.): _____

Project type (check one)

- ☐ Single user (private, non-commercial, residential)
- ☑ Multi-user (community, commercial, industrial, government)
- ☐ Surface water withdrawal

Latitude and longitude at center of project site (decimal degrees): 38.8315 / -77.0464
(Example: 37.33164/-77.68200)

USGS topographic map name: Alexandria, VA

8-digit USGS Hydrologic Unit Code (HUC) for your project site (See http://cfpub.epa.gov/surf/locate/index.cfm): 02070010
If known, indicate the 10-digit and 12-digit USGS HUCs (see *http://dswcapps.dcr.virginia.gov/htdocs/maps/HUExplorer.htm* :
0207001003 020700100301

Name of your project (*Example: Water Creek driveway crossing*) Potomac Yard Metrorail Station

Is there an access road to the project? ☑ Yes ☐ No. If yes, check all that apply: ☑ public ☐ private ☐ improved ☐ unimproved

Total size of the project area (in acres): 17 Acres

2. PROJECT LOCATION INFORMATION (Continued)

Provide driving directions to your site, giving distances from the best and nearest visible landmarks or major intersections:

North of the Potomac Greens Neighborhood, East of the Potomac Yard Development and CSX Railroad, West of the George Washington Memorial Parkway

Does your project site cross boundaries of two or more localities (i.e., cities/counties/towns)? ☐ Yes ☑ No
If so, name those localities:

3. DESCRIPTION OF THE PROJECT, PROJECT PRIMARY AND SECONDARY *PURPOSES*, PROJECT *NEED*, INTENDED USE(S), AND ALTERNATIVES CONSIDERED (Attach additional sheets if necessary)

- The purpose and need must include any new development or expansion of an existing land use and/or proposed future use of residual land.
- Describe the physical alteration of surface waters, including the use of pilings (#, materials), vibratory hammers, explosives, and hydraulic dredging, when applicable, and *whether or not tree clearing will occur* (include the area in square feet and time of year).
- Include a description of alternatives considered and measures taken to avoid or minimize impacts to surface waters, including wetlands, to the maximum extent practicable. Include factors such as, but not limited to, alternative construction technologies, alternative project layout and design, alternative locations, local land use regulations, and existing infrastructure
- For utility crossings, include both alternative routes and alternative construction methodologies considered
- For surface water withdrawals, public surface water supply withdrawals, or projects that will alter in-stream flows, include the water supply issues that form the basis of the proposed project.

Tree clearing will occur in approximately 4 acres (174,240 square feet) See Environmental Support Document (ESD)

Date of proposed commencement of work (MM/DD/YYYY)	Date of proposed completion of work (MM/DD/YYYY)
2018	2022
Are you submitting this application at the direction of any state, local, or federal agency? ☑ Yes ☐ No	Has any work commenced or has any portion of the project for which you are seeking a permit been completed? ☐ Yes ☑ No

If you answered "yes" to either question above, give details stating when the work was completed and/or when it commenced, who performed the work, and which agency (if any) directed you to submit this application. In addition, you will need to clearly differentiate between completed work and proposed work on your project drawings.

Applicant is City of Alexandria

Are you aware of any unresolved violations of environmental law or litigation involving the property? ☐ Yes ☑ No
(If yes, please explain)

4. PROJECT COSTS

Approximate cost of the entire project, including materials and labor: $ 316M

Approximate cost of only the portion of the project affecting state waters (channelward of mean low water in tidal areas and below ordinary high water mark in nontidal areas): $ 0

5. PUBLIC NOTIFICATION (Attach additional sheets if necessary)

Complete information for all property owners adjacent to the project site and across the waterway, if the waterway is less than 500 feet in width. If your project is located within a cove, you will need to provide names and mailing addresses for all property owners within the cove. If you own the adjacent lot, provide the requested information for the first adjacent parcel beyond your property line.

Failure to provide this information may result in a delay in the processing of your application by VMRC.

Property owner's name	Mailing address	City	State	ZIP code
See ESD				

Name of newspaper having general circulation in the area of the project: Washington Post

Address and phone number (including area code) of newspaper Rebecca Haase, 202-334-7778

Have adjacent property owners been notified with forms in Appendix A? ☐ Yes ☑ No (attach copies of distributed forms)

6. THREATENED AND ENDANGERED SPECIES INFORMATION

Please provide any information concerning the potential for your project to impact state and/or federally threatened and endangered species (listed or proposed). Attach correspondence from agencies and/or reference materials that address potential impacts, such as database search results or confirmed waters and wetlands delineation/jurisdictional determination. Include information when applicable regarding the location of the project in Endangered Species Act-designated or -critical habitats. Contact information for the U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration, Virginia Dept. of Game and Inland Fisheries, and the Virginia Dept. of Conservation and Recreation-Division of Natural Heritage can be found on page 4 of this package.

7. HISTORIC RESOURCES INFORMATION

Note: Historic properties include but are not limited to archeological sites, battlefields, Civil War earthworks, graveyards, buildings, bridges, canals, etc. Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the USACE from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the USACE, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.

Are any historic properties located within or adjacent to the project site? ☑ Yes ☐ No ☐ Uncertain
If Yes, please provide a map showing the location of the historic property within or adjacent to the project site.

Are there any buildings or structures 50 years old or older located on the project site? ☐ Yes ☑ No ☐ Uncertain
If Yes, please provide a map showing the location of these buildings or structures on the project site.

Is your project located within a historic district? ☐ Yes ☑ No ☐ Uncertain

If Yes, please indicate which district: _____

7. HISTORIC RESOURCES INFORMATION (Continued)

Has a survey to locate archeological sites and/or historic structures been carried out on the property?
☑ Yes ☐ No ☐ Uncertain

If Yes, please provide the following information: Date of Survey: 2013

Name of firm: AECOM

Is there a report on file with the Virginia Department of Historic Resources? ☑ Yes ☐ No ☐ Uncertain

Title of Cultural Resources Management (CRM) report: _____

Was any historic property located? ☑ Yes ☐ No ☐ Uncertain

8. WETLANDS, WATERS, AND DUNES/BEACHES IMPACT INFORMATION

Report each impact site in a separate column. If needed, attach additional sheets using a similar table format. Please ensure that the associated project drawings clearly depict the location and footprint of each numbered impact site. For dredging, mining, and excavating projects, use Section 17.

	Impact site number 1	Impact site number 2	Impact site number 3	Impact site number 4	Impact site number 5
Impact description (use all that apply): F=fill EX=excavation S=Structure T=tidal NT=non-tidal TE=temporary PE=permanent PR=perennial IN=intermittent SB=subaqueous bottom DB=dune/beach IS=hydrologically isolated V=vegetated NV=non-vegetated MC=Mechanized Clearing of PFO (*Example: F, NT, PE, V)*	F, S, NT, PE, V	F, S, NT, PE, V, MC	F, NT, TE, V, MC		
Latitude / Longitude (in decimal degrees)	38.8315/-77.0464	38.8315/-77.0464	38.8315/-77.0464		
Wetland/waters impact area (square feet / acres)	0.17	1.48	2.97		
Dune/beach impact area (square feet)					
Stream dimensions at impact site (length and average width in linear feet, and area in square feet)	--	--	--		
Volume of fill below Mean High Water or Ordinary High Water (cubic yards)	--	--	--		

8. WETLANDS/WATERS IMPACT INFORMATION (Continued)					
Cowardin classification of impacted wetland/water or geomorphological classification of stream *Example wetland: PFO; Example stream: 'C' channel and if tidal, whether vegetated or non-vegetated wetlands per Section 28.2-1300 of the Code of Virginia*	0.17 PEM	0.47 PEM/1.01 PFO	1.59 PEM/1.38 PFO		
Average stream flow at site (flow rate under normal rainfall conditions in cubic feet per second) and method of deriving it (gage, estimate, etc.)	--	--	--		
Contributing drainage area in acres or square miles (*VMRC cannot complete review without this information*)	--	--	--		
DEQ classification of impacted resource(s): Estuarine Class II Non-tidal waters Class III Mountainous zone waters Class IV Stockable trout waters Class V Natural trout waters Class VI Wetlands Class VII http://leg1.state.va.us/cgi-bin/legp504.exe?000+reg+9VAC25-260-50	--	--	--		
For DEQ permitting purposes, also submit as part of this section a wetland and waters boundary delineation map – see (3) in the Footnotes section in the form instructions.					
For DEQ permitting purposes, also submit as part of this section a written disclosure of all wetlands, open water, or streams that are located within the proposed project or compensation areas that are also under a deed restriction, conservation easement, restrictive covenant, or other land-use protective instrument.					

9. APPLICANT, AGENT, PROPERTY OWNER, AND CONTRACTOR CERTIFICATIONS

READ ALL OF THE FOLLOWING CAREFULLY BEFORE SIGNING

PRIVACY ACT STATEMENT: The Department of the Army permit program is authorized by Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act, and Section 103 of the Marine Protection Research and Sanctuaries Act of 1972. These laws require that individuals obtain permits that authorize structures and work in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters prior to undertaking the activity. Information provided in the Joint Permit Application will be used in the permit review process and is a matter of public record once the application is filed. Disclosure of the requested information is voluntary, but it may not be possible to evaluate the permit application or to issue a permit if the information requested is not provided.

CERTIFICATION: I am hereby applying for permits typically issued by the DEQ, VMRC, USACE, and/or Local Wetlands Boards for the activities I have described herein. I agree to allow the duly authorized representatives of any regulatory or advisory agency to enter upon the premises of the project site at reasonable times to inspect and photograph site conditions, both in reviewing a proposal to issue a permit and after permit issuance to determine compliance with the permit.

In addition, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

9. APPLICANT, AGENT, PROPERTY OWNER, AND CONTRACTOR CERTIFICATIONS (Continued)

Is/Are the Applicant(s) and Owner(s) the same? ☑ *Yes* ☐ *No*

Legal name & title of Applicant: Anthony Gammon CITY OF ALEXANDRIA c/o Deputy Director, DPI	Second applicant's legal name & title, if applicable
Applicant's signature	Second applicant's signature
Date 9/29/17	Date
Property owner's legal name, if different from Applicant	Second property owner's legal name, if applicable
Property owner's signature, if different from Applicant	Second property owner's signature
Date	Date

CERTIFICATION OF AUTHORIZATION TO ALLOW AGENT(S) TO ACT ON APPLICANT'S(S') BEHALF (IF APPLICABLE)

I (we), ANTHONY GAMMON (and) _____.
APPLICANT'S LEGAL NAME(S) – *complete the second blank if more than one Applicant*

hereby certify that I (we) have authorized ELIZABETH ATHERTON (and) KATIE CRUM
AGENT'S NAME(S) – *complete the second blank if more than one Agent*

to act on my (our) behalf and take all actions necessary to the processing, issuance, and acceptance of this permit and any and all standard and special conditions attached. I (we) hereby certify that the information submitted in this application is true and accurate to the best of my (our) knowledge

Applicant's signature	Second applicant's signature, if applicable
Date 9/29/17	Date
Agent's signature and title	Second agent's signature and title, if applicable
Date 8/17/17	Date 8/18/17

CONTRACTOR ACKNOWLEDGEMENT (IF APPLICABLE)

I (we), _____ (and) _____.
APPLICANT'S LEGAL NAME(S) – *complete the second blank if more than one Applicant*

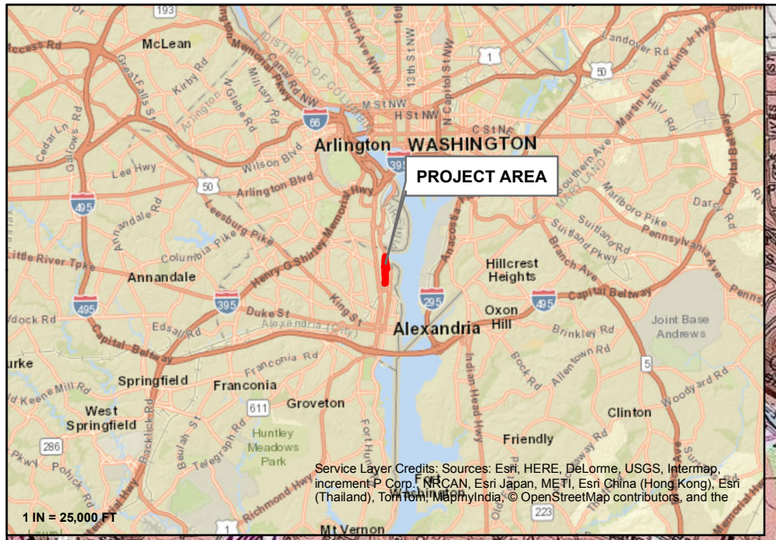
have contracted _____ (and) _____
CONTRACTOR'S NAME(S) – *complete the second blank if more than one Contractor*

to perform the work described in this Joint Permit Application, signed and dated _____.

I (we) will read and abide by all conditions as set forth in all federal, state, and local permits as required for this project. I (we) understand that failure to follow the conditions of the permits may constitute a violation of applicable federal, state, and local statutes and that we will be liable for any civil and/or criminal penalties imposed by these statutes.
In addition, I (we) agree to make available a copy of any permit to any regulatory representative visiting the project site to ensure permit compliance. If I (we) fail to provide the applicable permit upon request, I (we) understand that the representative will have the option of stopping our operation until it has been determined that we have a properly signed and executed permit and are in full compliance with all of the terms and conditions.

Contractor's name or name of firm (printed/typed)	Contractor's or firm's mailing address	
Contractor's signature and title	Contractor's license number	Date
Applicant's signature	Second applicant's signature, if applicable	
Date	Date	

APPENDIX B. JOINT PERMIT APPLICATION FIGURES


PROJECT AREA
1 IN = 25,000 FT
Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the

PROJECT AREA
1 IN = 2,000 FT
LEGEND
PROJECT AREA
N
WASHINGTON NATIONAL AIRPORT
BOLLING AIR FORCE BASE
U S NAVAL RESERVATION
U S NAVAL RESEARCH LABORATORY
Blue Plains
Discontinued Spoil Area
Hunter Point
Giesboro Pt
Hains Point
Shepherds Landing
Marbury Pt
Goose Island
Daingerfield Island
Washington Sailing Marina
Yacht Basin
Alexandria
Arlington
WASHINGTON
Oakcrest
Parkfairfax
Lynhaven
Warwick Village
St Elmo
Rosemont
Del Ray
Braddock Heights
Chinquapin Village
College Park
Cameron Valley
Shooters Hill
Beverley Hills
Addison Heights
Hillcrest Heights
Oxon Hill
Congress Heights
Forest Heights
Bellevue
Baldwin Hill
Glassmanor
Washington Highlands
OXON HILL CHILDRENS FARM
POTOMAC YARD METRORAIL STATION
ALEXANDRIA, VA
JOINT PERMIT APPLICATION
AERIAL PHOTOGRAPH
PREPARED FOR:
CITY OF ALEXANDRIA
DEPARTMENT OF
PROJECT IMPLEMENTATION
DATE
DESCRIPTION
MARK
APPR.
DATE:
JUNE 5, 2017
SHEET
REFERENCE
NUMBER
1

MARK	DESCRIPTION	DATE	APPR.

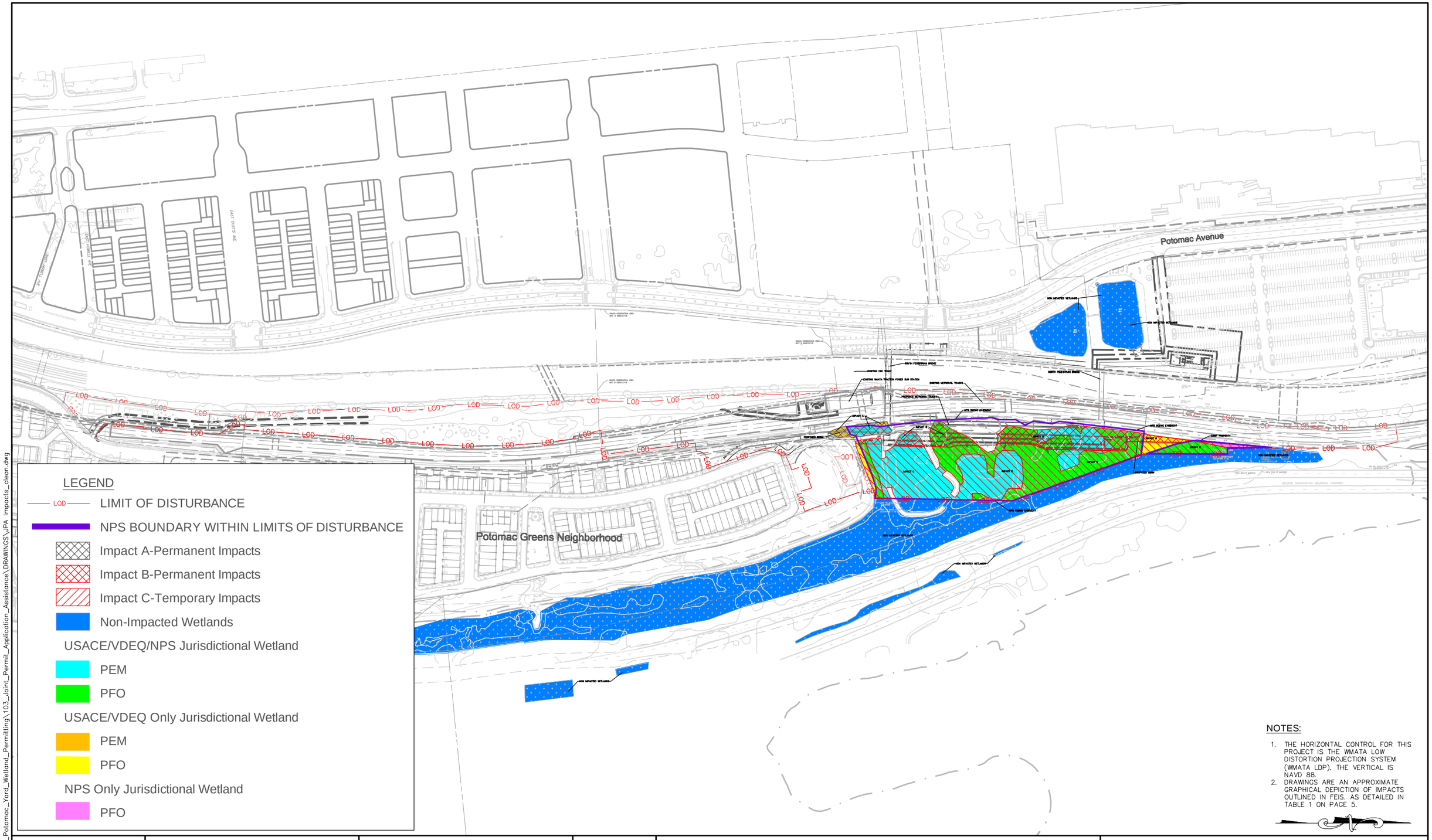
POTOMAC YARD METRORAIL STATION
ALEXANDRIA, VA

JOINT PERMIT APPLICATION
AERIAL PHOTOGRAPH

DATE:
JUNE 5, 2017

PREPARED FOR:
CITY OF ALEXANDRIA
DEPARTMENT OF
PROJECT IMPLEMENTATION

SHEET
REFERENCE
NUMBER
2



LEGEND

- LOD — LIMIT OF DISTURBANCE
- NPS BOUNDARY WITHIN LIMITS OF DISTURBANCE
- Impact A-Permanent Impacts
- Impact B-Permanent Impacts
- Impact C-Temporary Impacts
- Non-Impacted Wetlands

USACE/VDEQ/NPS Jurisdictional Wetland

- PEM
- PFO

USACE/VDEQ Only Jurisdictional Wetland

- PEM
- PFO

NPS Only Jurisdictional Wetland

- PFO

NOTES:

1. THE HORIZONTAL CONTROL FOR THIS PROJECT IS THE WMATA LOW DISTORTION PROJECTION SYSTEM (WMATA LDP). THE VERTICAL IS NAVD 88.
2. DRAWINGS ARE AN APPROXIMATE GRAPHICAL DEPICTION OF IMPACTS OUTLINED IN FEIS. AS DETAILED IN TABLE 1 ON PAGE 5.

PREPARED FOR:
CITY OF ALEXANDRIA
DEPARTMENT OF
PROJECT IMPLEMENTATION

JOINT PERMIT APPLICATION
WETLAND IMPACT FIGURES

POTOMAC YARD METRORAIL STATION
ALEXANDRIA, VA

SHEET INDEX

SCALE		SHEET NO.
1" = 150'	AUGUST 8, 2017	3

Aug 21,2017 - 4:24pm
K:\VAB_ENV\110104036_Potomac_Yard_Wetland_Permitting\103_Joint_Permit_Application_Assistance\DRAWINGS\JPA Impacts_clean.dwg

LEGEND

LOD — LIMIT OF DISTURBANCE

NPS BOUNDARY WITHIN LIMITS OF DISTURBANCE

Impact A-Permanent Impacts

Impact B-Permanent Impacts

Impact C-Temporary Impacts

Non-Impacted Wetlands

USACE/VDEQ/NPS Jurisdictional Wetland

PEM

PFO

USACE/VDEQ Only Jurisdictional Wetland

PEM

PFO

NPS Only Jurisdictional Wetland

PFO

Table 4. Wetlands and Waters Impact Details

			USACE/VDEQ and NPS Jurisdictional*				USACE/VDEQ Jurisdictional ONLY**				NPS Jurisdictional ONLY***			
Impact Site	Sheet No.	Impact Description	Permanent Impact Quantities (AC)		Temporary Impact Quantities (AC)		Permanent Impact Quantities (AC)		Temporary Impact Quantities (AC)		Permanent Impact Quantities (AC)		Temporary Impact Quantities (AC)	
			PEM	PFO	PEM	PFO	PEM	PFO	PEM	PFO	PEM	PFO	PEM	PFO
A	4	F, S, NT, PE, V	0.100	0.000	0.000	0.000	0.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000
B	4, 5	F, S, NT, PE, V, MC	0.470	0.880	0.000	0.000	0.000	0.130	0.000	0.000	0.000	0.000	0.000	0.000
C	4, 5	F, NT, TE, V, MC	0.000	0.000	1.590	1.290	0.000	0.000	0.000	0.090	0.000	0.000	0.000	0.040
Total Impacts			0.570	0.880	1.590	1.290	0.070	0.130	0.000	0.090	0.000	0.000	0.000	0.040

F=fill; EX=excavation; S=Structure; T=tidal; NT=non-tidal; TE=temporary; PE=permanent; PR=perennial; IN=intermittent; SB=subaqueous bottom; DB=dune/beach; IS=hydrologically isolated; V=vegetated; NV=non-vegetated; MC=Mechanized Clearing of PFO

* These wetland impacts are jurisdictional to the USACE, VDEQ, and NPS.

** These wetland impacts are jurisdictional to the USACE and VDEQ, and not NPS.

***These wetland impacts are jurisdictional to the NPS, and not USACE and VDEQ.

POTOMAC AVENUE

NON IMPACTED WETLANDS

W/E 20.3

SOUTH PEDESTRIAN BRIDGE

EXISTING CSX TRACK

NORTH PEDESTRIAN BRIDGE

EXISTING WMATA TRACTION POWER SUB STATION

EXISTING METRORAIL TRACKS

PROPOSED METRORAIL TRACKS

NPS SCENIC EASEMENT

PROPOSED AC SWITCHGEAR ROOM

RPA (50 FT BUFFER)

RPA (100 FT BUFFER)

IMPACT A

IMPACT B

PROPOSED BERM

IMPACT C

IMPACT B

IMPACT C

IMPACT C

CARPENTER ROAD

100 YR. BASE FLOOD ELEVATION =

500 YR. BASE FLOOD ELEVATION = 15.8

NPS SCENIC EASEMENT

NOTES:

1. THE HORIZONTAL CONTROL FOR THIS PROJECT IS THE WMATA LOW DISTORTION PROJECTION SYSTEM (WMATA LDP). THE VERTICAL IS NAVD 88.
2. DRAWINGS ARE AN APPROXIMATE GRAPHICAL DEPICTION OF IMPACTS OUTLINED IN FEIS. AS DETAILED IN TABLE 1 ON PAGE 5.

PREPARED FOR:
CITY OF ALEXANDRIA
DEPARTMENT OF
PROJECT IMPLEMENTATION

JOINT PERMIT APPLICATION
WETLAND IMPACT FIGURES

POTOMAC YARD METRORAIL STATION
ALEXANDRIA, VA

SHEET 4

SCALE		SHEET NO.
1" = 40'	AUGUST 8, 2017	4

Aug 21,2017–4:25pm
K:\VAB_ENV\110104036_Potomac_Yard_Wetland_Permitting\103_Joint_Permit_Application_Assistance\DRAWINGS\JPA Impacts_clean.dwg

Table 4. Wetlands and Waters Impact Details													
			USACE/VDEQ and NPS Jurisdictional*				USACE/VDEQ Jurisdictional ONLY**				NPS Jurisdictional ONLY***			
Impact Site	Sheet No.	Impact Description	Permanent Impact Quantities (AC)		Temporary Impact Quantities (AC)		Permanent Impact Quantities (AC)		Temporary Impact Quantities (AC)		Permanent Impact Quantities (AC)		Temporary Impact Quantities (AC)	
			PEM	PFO	PEM	PFO	PEM	PFO	PEM	PFO	PEM	PFO	PEM	PFO
A	4	F, S, NT, PE, V	0.100	0.000	0.000	0.000	0.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000
B	4, 5	F, S, NT, PE, V, MC	0.470	0.880	0.000	0.000	0.000	0.130	0.000	0.000	0.000	0.000	0.000	0.000
C	4, 5	F, NT, TE, V, MC	0.000	0.000	1.590	1.290	0.000	0.000	0.000	0.090	0.000	0.000	0.000	0.040
Total Impacts			0.570	0.880	1.590	1.290	0.070	0.130	0.000	0.090	0.000	0.000	0.000	0.040

F=fill; EX=excavation; S=Structure; T=tidal; NT=non-tidal; TE=temporary; PE=permanent; PR=perennial; IN=intermittent; SB=subaqueous bottom; DB=dune/beach; IS=hydrologically isolated; V=vegetated; NV=non-vegetated; MC=Mechanized Clearing of PFO

* These wetland impacts are jurisdictional to the USACE, VDEQ, and NPS.

** These wetland impacts are jurisdictional to the USACE and VDEQ, and not NPS.

***These wetland impacts are jurisdictional to the NPS, and not USACE and VDEQ.

LEGEND

- LOD — LIMIT OF DISTURBANCE
- NPS BOUNDARY WITHIN LIMITS OF DISTURBANCE
- Impact A-Permanent Impacts
- Impact B-Permanent Impacts
- Impact C-Temporary Impacts
- Non-Impacted Wetlands

USACE/VDEQ/NPS Jurisdictional Wetland

- PEM
- PFO

USACE/VDEQ Only Jurisdictional Wetland

- PEM
- PFO

NPS Only Jurisdictional Wetland

- PFO

NON IMPACTED WETLANDS

NPS SCENIC EASEMENT

GWMP PROPERTY

IMPACT B

IMPACT C

PROPOSED BERM

RPA (100 FT BUFFER)

RPA (50 FT BUFFER)

100 YR. BASE FLOOD ELEVATION = 10

500 YR. BASE FLOOD ELEVATION = 15

SPEED LIMIT 60 MPH

GEORGE WASHINGTON MEMORIAL PARKWAY

GEORGE WASHINGTON MEMORIAL PARKWAY (R/W VARIES)

NOTES:

1. THE HORIZONTAL CONTROL FOR THIS PROJECT IS THE WMATA LOW DISTORTION PROJECTION SYSTEM (WMATA LDP). THE VERTICAL IS NAVD 88.
2. DRAWINGS ARE AN APPROXIMATE GRAPHICAL DEPICTION OF IMPACTS OUTLINED IN FEIS.

PREPARED FOR:
CITY OF ALEXANDRIA
DEPARTMENT OF
PROJECT IMPLEMENTATION

JOINT PERMIT APPLICATION
WETLAND IMPACT FIGURES

POTOMAC YARD METRORAIL STATION
ALEXANDRIA, VA

SHEET 5

SCALE 1" = 40'

AUGUST 8, 2017

SHEET NO. 5

Aug 21,2017 - 4:33pm
K:\VAB_ENV\110104036_Potomac_Yard_Wetland_Permitting\103_Joint_Permit_Application_Assistance\DRAWINGS\JPA Impacts_clean.dwg

APPENDIX C. PHOTOGRAPHIC LOG

Kimley»Horn
4500 Main Street, Suite 500
Virginia Beach, VA 23462

Potomac Yard Metrorail Station
Photograph Sheet

KHA Job No.: 110104036
KHA Rep.: E. Atherton
Date: April 10, 2017
Page: 1 of 3

Photo No. 1

Remarks: View of proposed project location and existing WMATA substation.

Location: Proposed Project Area
Orientation: West

Photo No. 2

Remarks: Wetlands proposed for temporary/permanent impact as a result of construction

Location: Proposed Project Area
Orientation: Southeast

Kimley»Horn
4500 Main Street, Suite 500
Virginia Beach, VA 23462

Potomac Yard Metrorail Station
Photograph Sheet

KHA Job No.: 110104036
KHA Rep.: E. Atherton
Date: April 10, 2017

Photo No. 3

Remarks: View of proposed project area and wetlands.

Location: Proposed Project Area
Orientation: North

Photo No. 4

Remarks: View of proposed project area and wetlands. WMATA substation can be seen in the distance.

Location: Proposed Project Area
Orientation: Northwest

Kimley»Horn
4500 Main Street, Suite 500
Virginia Beach, VA 23462

Potomac Yard Metrorail Station
Photograph Sheet

KHA Job No.: 110104036
KHA Rep.: E. Atherton
Date: April 10, 2017
Page: 3 of 3

Photo No. 5

Remarks: View of proposed project area and wetlands.

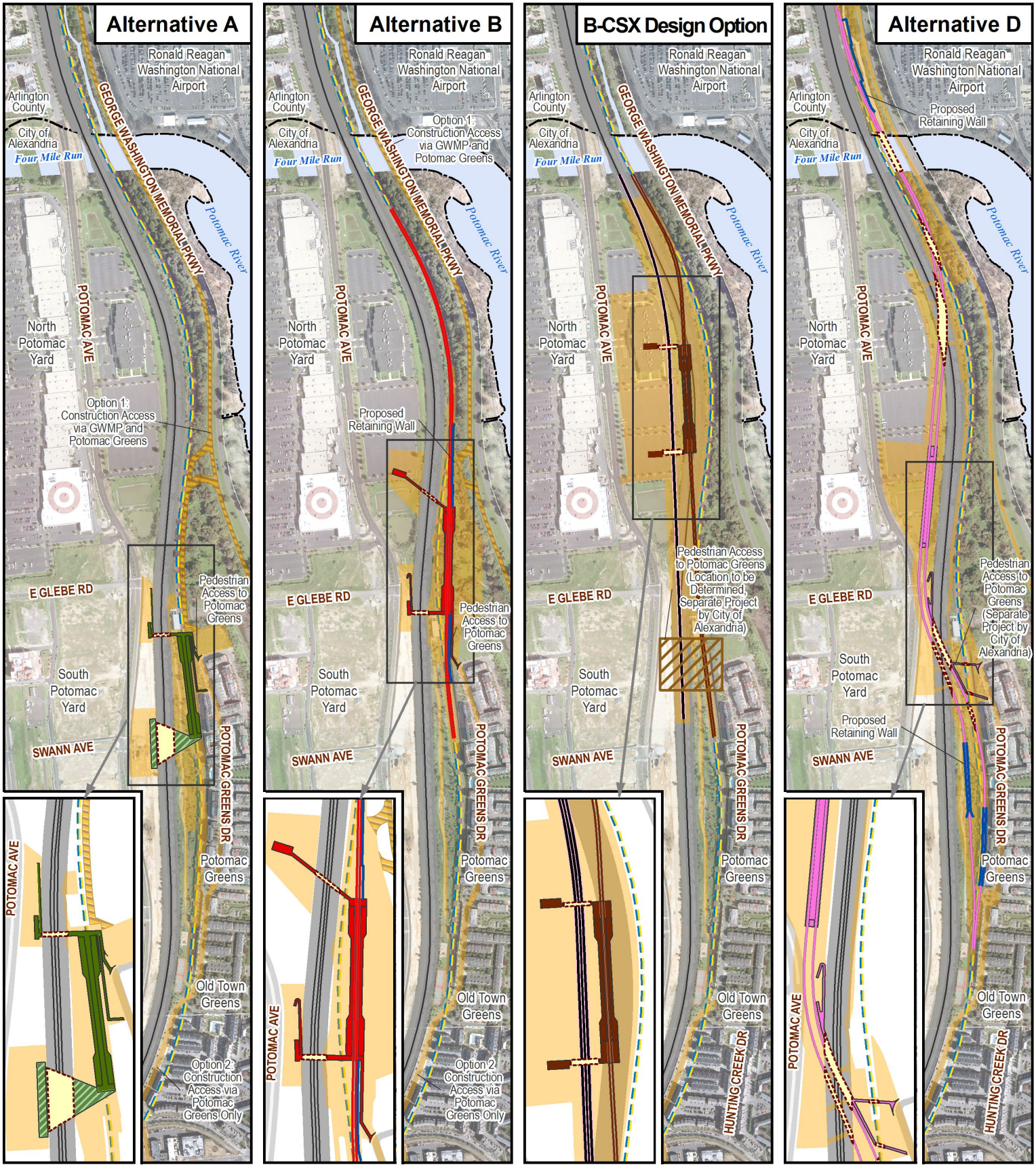
Location: Proposed Project Area
Orientation: Northeast

Photo No. 6

Remarks: View of proposed project area and wetlands with existing trails/boardwalk.

Location: Proposed Project Area
Orientation: North

APPENDIX D. INFORMATION FROM THE FEIS



Alternative A - Platform & Facilities
Alternative A - Range of Potential Pedestrian Crossings
Alternative B - Platform & Facilities
Alternative B - New Metrorail Track
B-CSX Design Option - Platform & Facilities
B-CSX Design Option - New Metrorail Track
B-CSX Design Option - Realigned CSXT Track
Alternative D - Platform & Facilities
Alternative D - New Metrorail Track
Aerial Structure over Railroad or Water
Construction Access and Impact Area
Alternative A and B - Option 1: Additional Construction Access and Impact Area
Existing Metrorail Blue/Yellow Line
Existing CSXT Tracks
Existing CSXT Right-of-Way

0 300 600 Feet (INSETS)

Source: City of Alexandria; Arlington County; District of Columbia; WMATA

Build Alternatives

N

0 450 900 Feet

POTOMAC YARD METRORAIL STATION EIS

U.S. Department
of Transportation
**Federal Transit
Administration**

OCT 2 2012

REGION III
Delaware, District of
Columbia, Maryland,
Pennsylvania, Virginia,
West Virginia

1760 Market Street
Suite 500
Philadelphia, PA 19103-4124
215-656-7100
215-656-7260 (fax)

U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061

Re: Online Project Review Certification Potomac Yard Metrorail Station Environmental Impact Statement City of Alexandria and Arlington County, Virginia

To Whom It May Concern:

The Federal Transit Administration (FTA) has reviewed the above-referenced project in accordance with the Virginia Field Office's online project review process and Section 7 of the Endangered Species Act (ESA). The FTA completed its review on September 12, 2012, and is submitting this project review package in accordance with the instructions. The Online Project Review Certification is provided as Attachment 1 and species conclusions table is provided in Table 1.

The proposed action consists of the construction of a new Metrorail Station located at Potomac Yard within the City of Alexandria. The Station would be along the existing Metrorail Blue and Yellow Lines between the Ronald Reagan Washington National Airport Station and the Braddock Road Station. The location of the project and the action area is provided in Attachment 2.

This project review is needed for the preparation of an Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act and the ESA. The enclosed project review documentation was used to identify federally-listed species, critical habitat, and bald eagles. The project review documentation includes the search results of the IPaC query for the study area, bald eagles nest locator project query and a habitat photo log. Project review documentation is provided in Attachment 3.

The IPaC search indicated the potential for the presence of a federally-listed plant species within the study area, the Sensitive Joint Vetch (*Aeschynomene virginica*). To confirm the presence or absence of this plant species, consultants on behalf of FTA conducted a field survey for the Sensitive Joint Vetch within the approved survey timeframe. On August 15, 2012, the survey was completed by a USFWS qualified surveyor, John Brooks of Resource International, Ltd. No Sensitive Joint Vetch plant was identified by the surveyor, and the surveyor concluded there is marginal habitat potential for the Sensitive Joint Vetch within the study area. The survey report is provided in Attachment 4.

Both the Virginia Department of Conservation and Recreation (VDCR) and Department of Game and Inland Fisheries (VDGIF) were contacted to provide comment on the project. VDCR concluded that natural heritage resources would not be impacted by this project. VDCR and VDGIF correspondence and project determinations are provided in Attachment 5.

For additional information regarding this project or letter, please contact Daniel Koenig, Environmental Protection Specialist, of my staff at daniel.koenig@dot.gov or (202) 219-3528. Thank you for your cooperation.

Sincerely,

Brigid Hynes-Cherin,
Regional Administrator

Enclosures:

1) Table 1: Species Conclusion Table
2) Attachment 1: USFWS Online Project Review Certification Letter
3) Attachment 2: Project Description and Location Map
4) Attachment 3: Project Review Documentation
5) Attachment 4: Field Survey For Sensitive Joint Vetch Report
6) Attachment 5: VDCR and VDGIF Project Review and Correspondence

Attachment 1

On Line Project Review Certification Letter

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
6669 Short Lane
Gloucester, Virginia 23061

Date: Sep 12, 2012

Online Project Review Certification Letter

Project Name: Potomac Yard Metrorail Station Environmental Impact Statement

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Virginia Field Office online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the referenced project in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be mailed to the address on the letterhead for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. These conclusions resulted in "no effect" and/or "not likely to adversely affect" determinations for listed species and critical habitat and/or "no Eagle Act permit required" determinations for eagles regarding potential effects of your proposed project. We certify that the use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the "no effect" and "not likely to adversely affect" determinations for listed species and critical habitat and "no Eagle Act permit required" determinations for eagles. Additional coordination with this office is not needed.

Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species.

Should project plans change or if additional information on the distribution of listed species, critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for one year.

Information about the online project review process including instructions and use, species information, and other information regarding project reviews within Virginia is available at our website http://www.fws.gov/northeast/virginiafield/endspecies/project_reviews.html. If you have any questions, please contact Kimberly Smith of this office at (804) 693-6694, extension 124.

Sincerely,

/s/ Cynthia A. Schulz

Cindy Schulz
Supervisor
Virginia Field Office

Enclosures - project review package

Attachment 2

Project Description and Location Map

Project Description

1.0 INTRODUCTION

The Federal Transit Administration (FTA), as the lead federal agency, and the City of Alexandria, as the project sponsor and joint lead agency, prepared a Draft Environmental Impact Statement (Draft EIS) in accordance with the National Environmental Policy Act (NEPA) for the proposed Potomac Yard Metrorail Station ("the project"). The Draft EIS was prepared in cooperation with the Washington Metropolitan Area Transit Authority (WMATA) and the National Park Service (NPS). **Figure 1** illustrates the study area location overlayed on a USGS Quandrangle Map.

1.1 Project Alternatives

The Draft EIS is evaluating a No Build Alternative and three Build Alternatives. Each Build Alternative includes the same area improvements as the No Build Alternative in addition to construction and operation of a Metrorail station.

1.1.1 No Build Alternative

The No Build Alternative is defined as the existing highway and transit network and committed transportation improvements from the National Capital Region Transportation Planning Board's Financially Constrained Long Range Plan (CLRP). The Draft EIS will assume that any improvements that are anticipated to be implemented by the project horizon year, whether physical or operational, are part of the No Build Alternative, with the exception of the new Metrorail Station at Potomac Yard.

The No Build Alternative includes the build-out of an internal street network within Potomac Yard (roughly from Four Mile Run to Braddock Road) and additional investments in transit and bicycle/pedestrian facilities. Anticipated transit investments include the Crystal City/Potomac Yard (CCPY) Transitway and an expansion of local transit service. The No Build Alternative also includes an off-street, multi-use trail through the planned linear park between Potomac Avenue and the CSXT right-of-way. This new off-street, multi-use trail will enhance access to the existing regional trail network, which serves both recreational users and commuters.

1.1.2 Build Alternatives

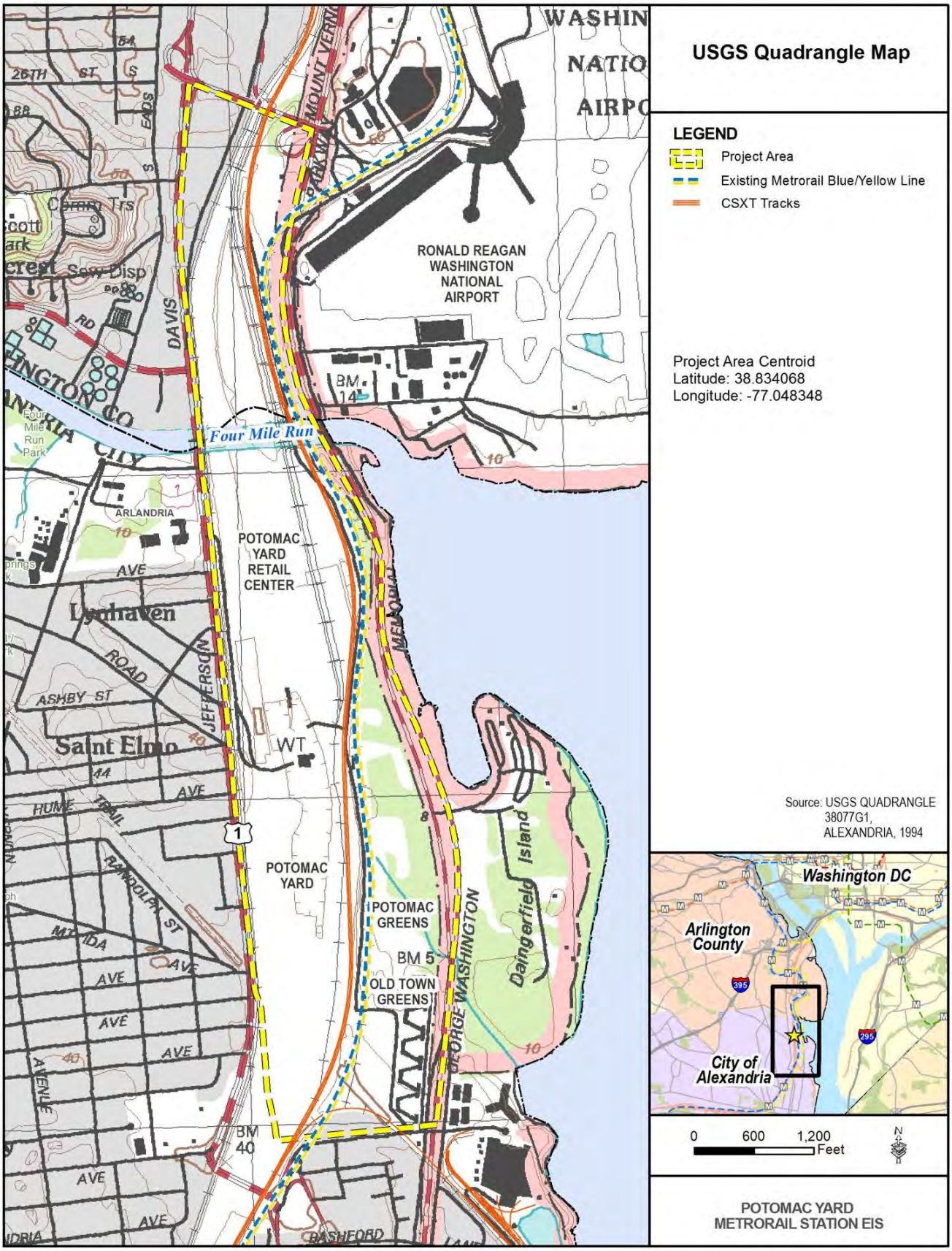
The Build Alternatives are described below and shown in **Table 1** and **Figure 2**.

Alternative A

Alternative A would be located between the CSXT Railroad tracks and the north end of the Potomac Greens neighborhood in the existing Metrorail Reservation easement designated during earlier planning efforts for the Potomac Yard area. The station would be at-grade with a side platform layout. Additional station facilities would include two pedestrian bridges from the station over the CSXT right-of-way to the planned development in Potomac Yard, as well as pedestrian access to the Potomac Greens and Old Town Greens neighborhoods.

Alternative A would require minimal track realignment within the station area and would include construction of a double crossover located approximately 900 feet south of the station.

Figure 1: USGS Quadrangle Map



Alternative B

Alternative B would be located between the George Washington Memorial Parkway and the CSXT Railroad, north of the Potomac Greens neighborhood, and east of the existing Potomac Yard Retail Center and the CSXT right-of-way. The station would be at-grade. Additional station facilities would include two pedestrian bridges from the station over the CSXT right-of-way to the planned development in Potomac Yard and a pedestrian bridge over the proposed Metrorail alignment to provide access to the Potomac Greens and Old Town Greens neighborhoods.

Alternative B would require the realignment of approximately 650 feet of existing track, as well as the installation of approximately 1,450 feet of new track. Special track work – a double crossover – would be required approximately 100 feet north of the station.The new track and station would be built on retained fill, and a new retaining wall would be constructed on the east side of the track and station to support the structures.

Alternative D

Alternative D would be located west of the CSXT right-of-way near the existing Potomac Yard Retail Center. The station would be aerial with a center platform layout. One pedestrian bridge over the CSXT right-of-way would be constructed, connecting the neighborhoods of Potomac Greens and Old Town Greens to Potomac Avenue at East Glebe Road. The pedestrian bridge would be parallel to the adjacent new Metrorail bridge over the CSXT railroad, which is required to accommodate Alternative D and is described below.

Alternative D would require the realignment of approximately 550 feet of existing track, as well as the installation of approximately 5,800 feet of new track. The majority of new track would be elevated. Alternative D would also include construction of two Metrorail aerial bridges crossing the CSXT right-of-way to the north and south of the station, and a new, single span, aerial structure over Four Mile Run. Construction of a double crossover would be required in a location approximately 100 feet north of the station. During construction, two structures will be constructed over operating Metrorail tracks, north and south of the station. Following completion of construction, the old Metrorail tracks will be removed from service.

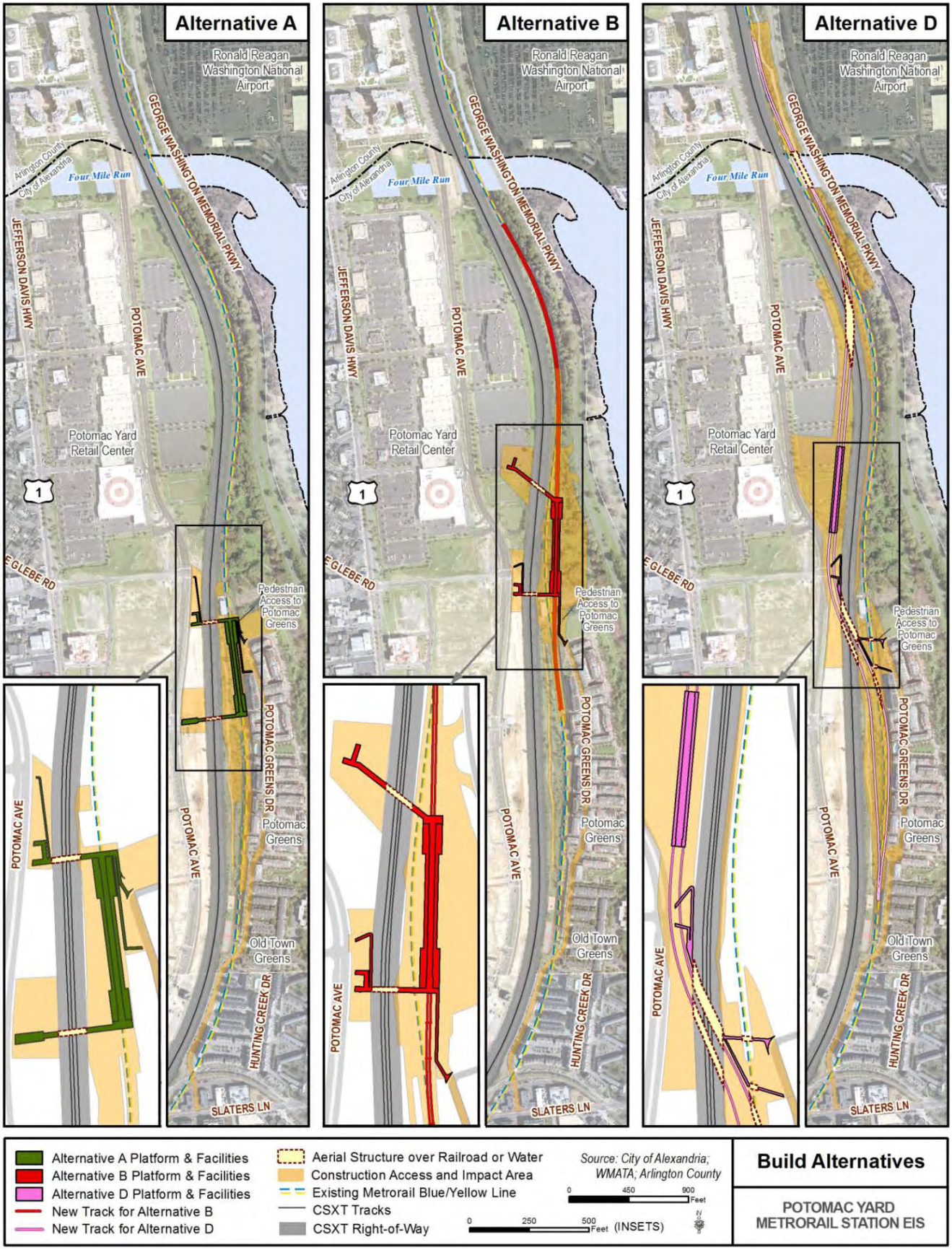
Additional structural improvements would include the removal and replacement of the existing retaining wall near the Potomac Greens neighborhood and the removal of an additional retaining wall west of the existing Metrorail tracks, north of the portal at the southern end of the neighborhood.

Table 1: Build Alternatives

Alternative	Type and Layout	Track Work	Facilities for Station Access	Additional Structures Required
A	At-grade, side platform	Use of existing alignment, minimal track work	Two pedestrian bridges over CSXT	None
B	At-grade, side platform	Realignment of 650 feet of existing track; installation of approx. 1,450 feet of new track	Two pedestrian bridges over CSXT, one pedestrian bridge over proposed Metrorail alignment	Retaining wall to support new track and station
D	Aerial, center platform	Realignment of approx. 550 feet of existing track; installation of approx. 5,800 feet of new track	One pedestrian bridge over CSXT	Two aerial structures over CSXT and existing Metrorail tracks, one Metrorail bridge over Four Mile Run, aerial track and supports, and retaining wall replacement on the east and west side of the tracks north of the Metrorail portal

Note: Structural items assume existing Blue and Yellow Line Metrorail track that is replaced would be removed.

Figure 2: Alternatives



Attachment 3

Project Review Documentation

IPaC Search Results

Center for Conservation Biology VaEagles Nest Locator Project Query

Habitat Photo Log

U.S. Fish and Wildlife Service

Natural Resources of Concern

This resource list is to be used for planning purposes only — it is not an official species-list.

Endangered Species Act species-list information for your project is available online and listed below for the following FWS Field Offices:

VIRGINIA ECOLOGICAL SERVICES FIELD OFFICE
6669 SHORT LANE
GLOUCESTER, VA 23061
(804) 693-6694
http://www.fws.gov/northeast/virginiafield/

CHESAPEAKE BAY ECOLOGICAL SERVICES FIELD OFFICE
177 ADMIRAL COCHRANE DRIVE
ANNAPOLIS, MD 21401
(410) 573-4500

Project Name:

Potomac Yard

U.S. Fish and Wildlife Service

Natural Resources of Concern

Project Location Map:

Project Counties:

District of Columbia, DC | Alexandria, VA | Arlington, VA

Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):

MULTIPOLYGON (((-77.052335 38.8503469, -77.0470135 38.8495745, -77.0446961 38.8347279, -77.0424216 38.8287284, -77.0418637 38.8224542, -77.0510046 38.8210036, -77.052335 38.8503469)))

Project Type:

Transportation

U.S. Fish and Wildlife Service

Natural Resources of Concern

Endangered Species Act Species-list

There are a total of **1** species in your species-list

Species that may be affected by your project:

Flowering Plants				
Sensitive joint-vetch (*Aeschynomene virginica*)	Threatened	species info		Virginia Ecological Services Field Office

FWS National Wildlife Refuges

There are no refuges found within the vicinity of your project.

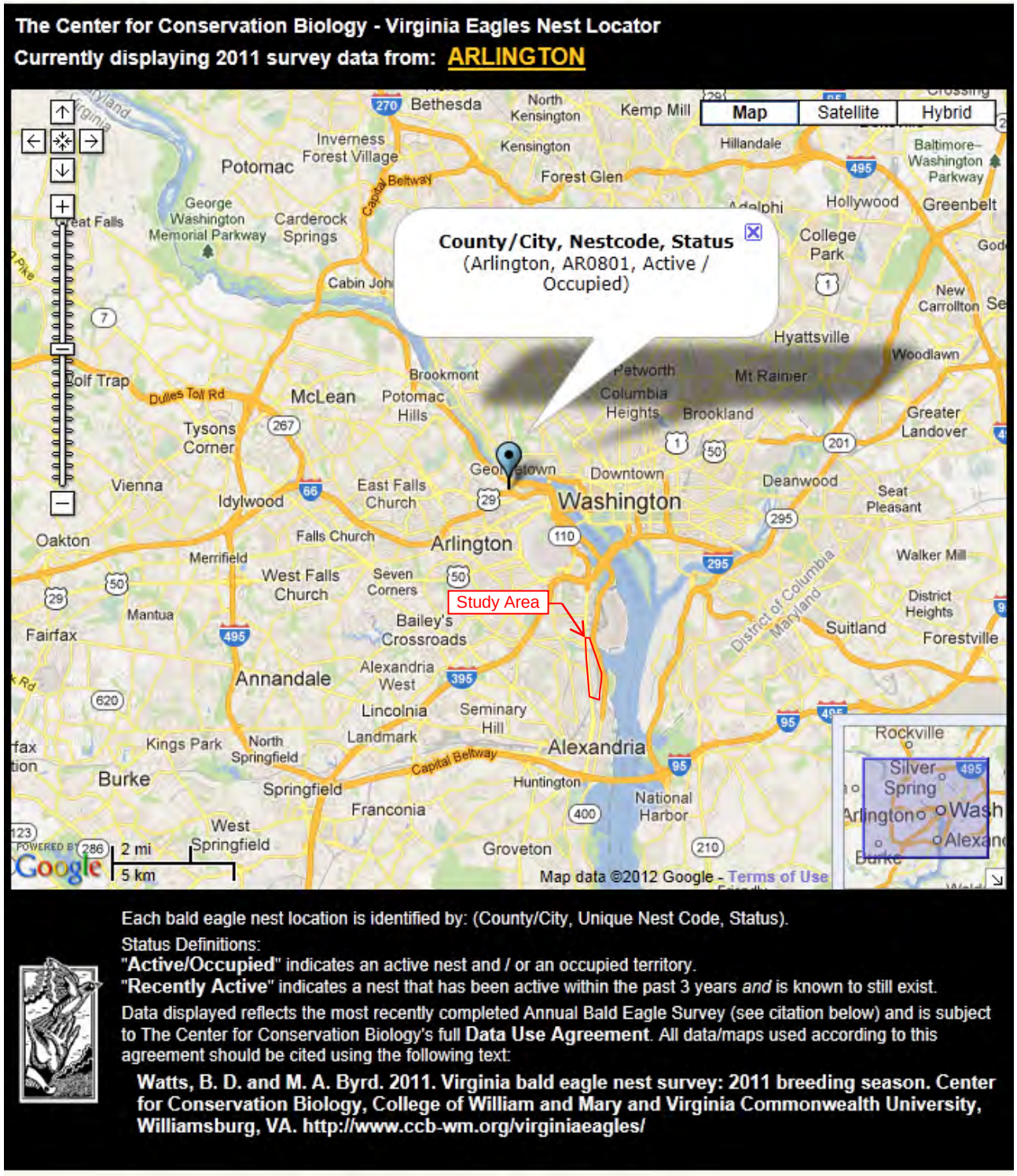
FWS Migratory Birds

Not yet available through IPaC.

FWS Delineated Wetlands

Not yet available through IPaC.

VAEagles Nest Map

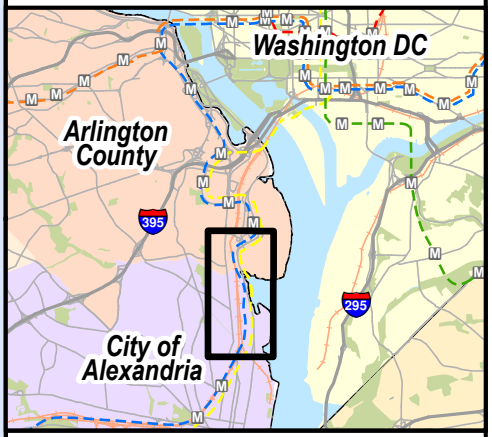


Source: College of William and Mary, Center for Conservation Biology, *VAEagles, Virginia's Bald Eagle Information Site*, Accessed at: http://www.ccb-wm.org/virginiaeagles/index.htm, Access Date: June 22, 2012.

HABITAT PHOTO LOG KEY MAP

LEGEND

- Project Area
- DEL RAY — Neighborhood
- Existing Metrorail Blue/Yellow Line
- CSXT Tracks
- (1) Photo Location



0 600 1,200 Feet

N

POTOMAC YARD METRORAIL STATION EIS

Photo 1 – Northeast - Emergent Wetland w/ phragmites

Photo 2 – North - Board walk area showing mile-a-minute and porcelainberry

Photo 3 – East - Porcelainberry dominating site

Photo 4 – South – Drainage ditch along WMATA track

Photo 5 – West - Northern tip of forested wetland along GW Parkway

Photo 6 – West - Upland forested area along GW Parkway

Photo 7 – East – Forested area shot from WMATA R-O-W

Photo 8 – East – Upland slope down to Four Mile Run

Attachment 4

Field Survey For Sensitive Joint Vetch Report

Direct Dial (804) 550-9212
jbrooks@resourceintl.com
http://www.resourceintl.com

RESOURCE
INTERNATIONAL, LTD.
ENGINEERS • SCIENTISTS • SURVEYORS • PLANNERS

September 7, 2012

P.N. 212029.01

Mr. Mark Niles
AECOM
2101 Wilson Boulevard, 8th Floor
Arlington, VA 22201

RE: Field Survey For Sensitive Joint Vetch (*Aeschynomene Virginica*)
Potomac Yard Metrorail Station EIS
Alexandria, Virginia

Dear Mr. Niles:

Attached is a field survey report for sensitive joint vetch (*Aeschynomene virginica*) on the above referenced project. As indicated in the enclosed report, no sensitive joint-vetch plants were found and the habitat was marginal during the study.

We trust that the information provided meets your needs. If you have any questions, we may be reached at the above referenced sources.

Sincerely,

John H Brooks, PWD #3

John H. Brooks, III, PWD
Vice President - Environmental
Virginia Certified Professional Wetland Delineator, No. 3
Certified Surveyor for Small Whorled Pogonia, Swamp Pink and Sensitive Joint Vetch

/aw

Enclosure

FIELD SURVEY FOR SENSITIVE JOINT VETCH (*Aeschynomene virginica*) POTOMAC YARD METRORAIL STATION ENVIRONMENTAL IMPACT STATEMENT AT ALEXANDRIA, VIRGINIA

SEPTEMBER 2012

PREPARED FOR:

Mr. Mark Niles
AECOM
2101 Wilson Boulevard, 8th Floor
Arlington, VA 22201

P. N. 212029.01

RESOURCE INTERNATIONAL, LTD.

ENGINEERS • SCIENTISTS • SURVEYORS • PLANNERS
P.O. BOX 6160 • 9560 KINGS CHARTER DRIVE • ASHLAND, VA 23005
(804) 550-9200 • FAX (804) 550-9259
www.resourceintl.com

FIELD SURVEY FOR
SENSITIVE JOINT VETCH (*Aeschynomene virginica*)
POTOMAC YARD METRORAIL STATION ENVIRONMENTAL IMPACT STATEMENT
ALEXANDRIA, VIRGINIA

PREPARED FOR:

Mr. Mark Niles
AECOM
2101 Wilson Boulevard, 8th Floor
Arlington, VA 22201

September 2012
Resource International, Ltd. Job No. 212029.01

John H. Brooks, III
Vice President – Environmental Services
VA Certified Professional Wetland Delineator, No. 3
Certified Surveyor for Small Whorled Pogonia, Swamp Pink, and Sensitive Joint Vetch

TABLE OF CONTENTS

FIGURES

Figures 1 through 6: Site Location and Topography, National Wetland Inventory, Key Map, and Site Maps

PHOTOGRAPHS

Photographs 1 through 24: Representative Photographs of Study Area

APPENDICES

Appendix A: Representative Photographs Sensitive Joint Vetch (*Aeschynomene virginica*)

Appendix B: Representative Site Photographs

1.0 EXECUTIVE SUMMARY

This report presents the results of an investigation conducted to identify and record the presence or absence of the federally protected sensitive joint vetch (*Aeschynomene virginica*) or habitat. The investigation was conducted within the project limits of proposed alternative alignments of Metrorail Station located at the Potomac Yard, along the existing Metrorail Blue and Yellow Lines essentially between Ronald Regan Washington National Airport and Carpenter Road in within Arlington and Alexandria, Virginia (the project). The project area includes approximately 117.5 acres, including approximately 15.08 acres, which is considered waters of the United States (including wetlands and streams). This area has been collectively classified by the State and Federal Agencies as the Area of Potential Effect (APE), where the habitat for sensitive joint vetch is confined to the wetlands, and areas directly adjacent to the waters of the United States (U.S.).

This investigation was performed by Resource International, Ltd. (Resource) of Ashland, Virginia, under contract with AECOM of Arlington, Virginia. This report is provided for the sole use of AECOM, Federal Transit Administration, The City of Alexandria, Virginia, the U.S. Fish and Wildlife Service, and their designated representatives. Use of this report by any other parties will be at the risk of the party. Resource disclaims liability for any use or reliance by other parties.

The project is located in the City of Alexandria and Arlington County, Virginia. The potential for sensitive joint vetch habitat exists and would potentially support the threatened plant species. Section 7 Coordination was initiated as a part of a draft Environmental Impact Statement (EIS), where a project review was coordinated through the U.S. Fish and Wildlife Service's Information, Planning, and Conservation (IPAC) System (a.k.a. Virginia USFWS Field Office Project Review Process), an on-line project review application. Step 4 of the process determined that suitable habitat could exist with in the APE, and therefore in accordance with Step 7, a determination was required. Thus, an investigation for the presence of sensitive joint vetch and potential habitat is required. The findings in this report are meant to meet the Section 7 Coordination.

The U.S. Fish and Wildlife Service (USFWS) stipulate that surveys for sensitive joint vetch occur between August 15 and October 15, when the sensitive joint vetch is in flower or fruit and when the best conditions and most identifiable specimens persist. The USFWS also states that surveys conducted outside of this period may allow for identification of suitable habitat. Therefore, a habitat evaluation was conducted on August 13 and 14, 2012 to determine the areas where suitable habitat was present, and then the survey was conducted on August 15, 2012. All activities were site supervised and conducted by a surveyor certified by the U.S. Fish and Wildlife Service.

Three areas were surveyed and documented on site and included in this report. The areas within the APE consisted of tidal wetlands, tidal streams, non-tidal wetlands, non-tidal streams, those area topographically defined by elevation to be within the tidal influence of the Potomac River in

accordance with local tide stations, upland, and man-dominated habitats directly adjacent to the wetland areas. Man-dominated areas, upland areas, non-tidal forested wetlands, and non-tidal streams were eliminated first due to these areas not being suitable habitat for the sensitive joint vetch. On August 13 and 14, 2012 observations and pedestrian surveys were conducted in these areas in order to document that lack of habitat. Tidal wetlands, tidal streams, and those areas within the tidal elevations as documented by local tidal stations in the APE were surveyed on August 15, 2012. The survey for sensitive joint vetch was conducted by walking GPS controlled transects at 15-foot intervals through the areas documented as habitat. No sensitive joint vetch plants were identified during this survey.

2.0 SPECIES DESCRIPTION

2.1 Species Characteristics

Sensitive joint vetch (*Aeschynomene virginica*) is a robust, bushy-branched annual legume native to the eastern United States. Populations currently exist in Maryland, New Jersey, Virginia, and North Carolina. In Virginia, populations are most often found along the Potomac, Mattaponi, Chickahominy, and James Rivers and their tributaries. This herb usually grows to a height of three to six feet in a single growing season, and has been documented to grow as tall as eight feet. The "butterfly like" flowers are yellow, streaked with red and can be reddish purple. Sensitive joint vetch typically occurs at the outer fringe of marshes or shores; its presence in marsh interiors may be result of nutrient deficiencies, ice scouring, or muskrat herbivory. Threats to this species include sedimentation, competition from non-native plant species, dams, dredging, filling, recreational activities, shoreline stabilization, shoreline structures, road and bridge construction, etc.

Sensitive joint vetch is a robust, bushy-branched annual legume, usually between 20-39 inches (0.5-1 m) tall, but can grow to be taller. It is sensitive to light and usually to touch. Stems are single and branch near the top. Leaves are compound, divided pinately into 30-56 leaflets. The leaves are 0.8-5 inches (2-12 cm) long, the leaflets are usually no longer than 0.4 inches (1 cm) long, and 0.08-0.12 inch (2-3mm wide), with toothed edges. Flowers grow in a long cluster with each flower on its own short lateral stem and accompanied by reduced leaves. Petals are yellowish- to reddish-purple, about 0.4-0.6 inch (1-1.5 cm) long and irregular, legume-like. The dry fruit are legumes, 1.2-2.4 inches (3-6 cm) long; made up of about 6-10 segments that turn dark brown when ripe.

2.2 Species Habitat

Sensitive joint vetch grows in the intertidal zone where plants are flooded twice daily. The species seems to prefer the marsh edge at an elevation near the upper limit of tidal fluctuation. It is usually found in areas where plant diversity is high (50 species per acre) and annual species predominate. Bare to sparsely vegetated substrates appear to be a habitat feature of critical importance to this plant. As an annual, it requires such microhabitats for establishment and growth. Such areas may include accreting point bars that have not yet been colonized by

perennial species, low swales within extensive marshes, or areas where muskrats have eaten most of the vegetation. It is frequently found in the estuarine meander zone of tidal rivers where sediments transported from upriver settle out and extensive marshes are formed. The substrate may be sandy, muddy, gravelly, or peaty.

2.3 Life History

The sensitive joint vetch occurs in fresh to slightly brackish tidal river systems, within the intertidal zone where populations are flooded twice daily. It typically occurs at the outer fringe of marshes or shores; its presence in marsh interiors may be a result of nutrient deficiencies, ice scouring, or muskrat herbivory. The sensitive joint vetch is found in localities where plant diversity is high and annual species are prevalent. Bare to sparsely vegetated substrates appear to be a habitat feature of critical importance for establishment and growth of the species. Plants flower from July through September and into October in some years. Fruits are produced from July through late October, concurrent with flowering. Seedlings may germinate in "flotsam" of plant material that has been deposited on the riverbank.

Appendix A presents representative photographs of sensitive joint vetch.

2.4 Species Status

The extirpation of sensitive joint vetch from Delaware and Pennsylvania and its elimination from many sites in other States can be directly attributed to habitat destruction. Many of the marshes where it occurred historically have been dredged and/or filled and the riverbanks stabilized with bulkheads or riprap. Other threats include sedimentation, competition from exotic plant species, recreational activities, agricultural activities, mining, commercial and residential development with associated pollution and sedimentation, impoundments, water withdrawal projects and introduced insect pests.

Currently, only two sites (one in New Jersey and one in Virginia) across the entire range of the species are afforded land protection. These protected sites are still subject to off-site threats such as sedimentation and water withdrawal projects. The Virginia Department of Conservation and Recreation's Division of Natural Heritage is determining general threats on-site and off-site for the Virginia populations. They are also providing selective on-site conservation planning.

3.0 FIELD SURVEY

The U.S. Fish and Wildlife Service (USFWS) stipulates that surveys for the sensitive joint vetch occur between August 15 and October 15, when the plant is most likely in flower or bearing fruit, which is the most opportune time for identification. However, the USFWS also states that surveys conducted outside of these periods may allow for identification of suitable habitat. Therefore, a habitat evaluation was conducted on August 13 and 14, 2012, to determine the areas where suitable habitat was present, then the survey was conducted on August 15, 2012. All activities were site supervised and conducted by a surveyor certified by the USFWS.

3.1 Survey Method

The project limits of proposed alternative alignments of Metrorail Station located at the Potomac Yard, along the existing Metrorail Blue and Yellow Lines essentially between Ronald Regan Washington National Airport and Carpenter Road in within Arlington and Alexandria, Virginia (the survey area). The survey area is approximately 117.5 acres in size of which approximately 15.08 acres is waters of the United States (including wetlands and streams). This area has been collectively classified by the State and Federal Agencies as the Area of Potential Effect (APE), where the habitat for sensitive joint vetch is confined to the wetlands, and areas directly adjacent to the waters of the United States (U.S.).

The investigation for the presence or absence of sensitive joint vetch (*Aeschynomene virginica*) was conducted in the Area of Potential Effect (APE) as defined by the AECOM's Section 7 Coordination through the USFWS's Information, Planning, and Conservation (IPAC) System, an on-line project review application. Step 4 of the process determined that suitable habitat could exist with in the APE, and therefore in accordance with Step 7, a suitable habitat determination and species habitat survey was required. Thus, an investigation for the presence of sensitive joint vetch and potential habitat was required.

An off-site investigation was performed first, followed by an on-site investigation. The off-site investigation was conducted by a review of the following available data:

- U.S.G.S. Topographic Maps, 7.5 Minute Quadrangles, Alexandria, Virginia – District of Columbia - Maryland, 1965, Photo revised 1993, Bathymetry added 1982 (Figure 1).
- Google Earth images of the APE
- Proposed plans prepared and provided by AECOM dated May 30, 2012

Three areas were surveyed and documented on site and included in this report. Area 1 was an unnamed tributary of Four Mile Run, which was tidal along the lower section of the stream. Area 2 was the northern and southern banks of Four Mile Run, which is a tidal stream. Finally, Area 3, was a tidal and non-tidal wetland system south of Four Mile Run, which drains to the east through a tidal stream system, which has been culverted and directed under George Washington Memorial Parkway. Figures 1 and 2 depict the general mapping, topography, and a representation of wetlands and streams potentially in the APE. Figures 3 through 6 depict more site specific information from information provided by AECOM, as well as, the results of the site habitat evaluation conducted on August 13 and 14, 2012, and the site survey of habitat conducted on August 15, 2012.

Areas within the APE consisted of tidal wetlands, tidal streams, non-tidal wetlands, non-tidal streams, those area topographically defined by elevation to be within the tidal influence of the Potomac River in accordance with local tide stations, upland, and man-dominated habitats directly adjacent to the wetland areas. Man-dominated areas, upland areas, non-tidal forested wetlands, and non-tidal streams were eliminated first due to these areas not being suitable habitat for the sensitive joint vetch. On August 13 and 14, 2012 observations and pedestrian surveys

were conducted in these areas in order to document that lack of habitat with in the APE. Tidal wetlands, tidal streams, and those areas within the tidal elevations as documented by local tidal stations in the APE were surveyed on August 15, 2012. The survey for sensitive joint vetch was conducted by walking GPS controlled transects at approximate 15-foot intervals through the areas documented as habitat.

All areas were evaluated for the habitat requirements of the sensitive joint vetch, and those areas meeting the habitat requirement were surveyed. Each area evaluated and surveyed is described in the following section.

3.2 Results

3.2.1 Area 1: Unnamed Tributary of Four Mile Run

Area 1 is an unnamed tidal/non-tidal stream located to the north of Four Mile Run. The stream flows to the south, where its headwater originate from a piped system most likely associated with an upstream stormwater collection and control system. The unnamed tributary appears to have been straightened, and subsequently hardened with riprap for the length of the stream. The upstream portion of the stream is non-tidal that contains step pools allowing the stream to flow through a deeply entrenched stream system at a slope ranging from three to five percent. The stream had a hardwood-forested buffer on either side that had an average total width of approximately 40 to 60 feet. This section of highly degraded, laterally contained, non-tidal stream does not have the potential habitat to support sensitive joint vetch.

The tidal portion of the unnamed stream had a slope much less than one percent, but existed in much the same condition as the non-tidal portion upstream. The riprap lined edges, although buried by sediment over time offered very marginal habitat for sensitive joint vetch. A survey along the banks of the unnamed stream found no sensitive joint plants. The vegetation along most of the unnamed tributary consisted of white oak (*Quercus alba*), willow oak (*Quercus phellos*), box elder (*Acer negundo*), silver maple (*Acer saccharinum*), black locust (*Robinia pseudoacacia*), red mulberry (*Morus rubra*), Virginia creeper (*Parthenocissus quinquefolia*), empress tree (*Paulownia tomentosa*), and poison ivy (*Toxicodendron radicans*). Area 1 is depicted on Figure 4 and representative pictures of the reach are shown in photographs 1 through 4 and 17. This tidal section of the unnamed tributary had marginal habitat for sensitive joint vetch, due to the riprap lined banks, highly degraded and latterly contained stream that did not offer the high species diversity tidal flats due to the steep banks of the stream. A survey for sensitive joint vetch found no plants.

3.2.2 Area 2: Northern and Southern Banks of Four Mile Run

Area 2 is the northern and southern banks of Four Mile Run, where a series of bridges span Four Mile Run, providing significant shading. Four Mile Run is a tidal stream,

where both banks are lined from below mean low water (MLW) to above mean high water (MHW) with gabion baskets filled with medium to large size quarried stone. The sediment transported by Four Mile Run has filled the gaps between the rocks on some portions of this area, which has allowed pioneer species to establish. Typical vegetation observed on the banks consisted of Virginia creeper, dodder (*Cuscuta compacta*), porcelain berry (*Ampelopsis brevipedunculata*), red mulberry, silver maple, mimosa (*Albizia julibrissin*), dotted smartweed (Polygonum punctatum), morning glory (*Ipomea* sp.), poison ivy, blackberry (*Rubus allegheniensis*), and common dayflower (*Commelina communis*). Figure 4 and representative pictures of the reach are shown in photographs 5 through 6, 18, and 19. Four Mile Run had marginal habitat for sensitive joint vetch, due to the gabion baskets located from MLW to MHW which limited the area where seed would germinate and created more competition because of the reduced habitat. A survey for sensitive joint vetch found no plants.

3.2.3 Area 3: Tidal Wetland and Streams South of Four Mile Run

Area 3 is comprised of a non-tidal forested and emergent, tidal emergent wetland stream system located in the southern area of the APE. The system essentially collects water from multiple flow directions and then conveys the water through a culverted stream that flows under the George Washington Memorial Parkway to the Potomac River. Area 3 was subdivided into three areas (Areas 3a – 3c) that were distinguished as sub-watersheds, segments of the same watershed subdivided by roads, or areas with different habitats and cover types. Theses sub-areas are discussed as they occur in Area 3 progressing from the north to the south.

Area 3a

In the northern portion of Area 3, a non-tidal headwater wetland that coveys water to a concrete cistern, to the east through a culvert under the George Washington Parkway, and then outfalls to the Potomac River through an off site small tidal stream that has been straightened (Area 3a). The vegetation in the headwater non-tidal wetland consisted of river birch (*Betula nigra*), green ash (*Fraxinus pennsylvanica*), highbush blueberry (*Vaccinium corymbosum*), green briar (*Smilax rotundifolia*), and poison ivy. The elevations in this area were consistent with other areas within the APE that were under tidal influence; however the area was man-manipulated and the installation of the cistern may have severed the past tidal connectivity that this area may have seen in the past. Therefore, this non-tidal headwater wetland was not considered as habitat. Figure 5 and representative pictures of the reach are shown in photographs 7 through 9.

Area 3b

In the median of the George Washington Memorial Parkway, a tidal portion of a stream with adjacent tidal and non-tidal wetland is located between two culverts under the north and southbound lanes. The vegetation in the tidal and non-tidal wetlands consist of

sycamore (*Platanus occidentalis*), mokernut hickory (*Carya tomentosa*), staghorn sumac (*Rhus typhina*), red mulberry, flowering dogwood, multiflora rose (*Rosa multiflora*), porcelain berry, false nettle (*Boehmeria cylindrica*), common day flower, poison ivy, English ivy (*Hedera helix*), and broad leaf arrowhead (*Sagittaria latifolia*), as well as unvegetated tidal flats. This area possessed suitable habitat and was surveyed for sensitive joint vetch; however, no plants were found. As a precaution, the stream was surveyed downstream to its confluence with Potomac Bay, and again no plants were found. Figure 5 and representative pictures of the reach are shown in photographs 10, 11, 20, and 21.

Area 3c

Located to the west of the southbound lane of the George Washington Memorial Parkway is the upstream portion of the same tidal stream, which has both adjacent tidal and non-tidal wetland. The vegetation in the tidal and non-tidal wetlands consist of red maple (*Acer rubrum*), box elder, red mulberry, sycamore, black willow (*Salix nigra*), black locust, flowering dogwood (*Cornus florida*), elderberry (*Sambucus canadensis*), blackberry, poison ivy, honey suckle (*Lonicera japonica*), jewel weed (*Impatiens capensis*), muscadine grape (*Vitis rotundifolia*), and Pennsylvania smartweed (*Polygonum pensylvanicum*), as well as tidal flats overlain by the remnants of a former beaver dam that I was told had been removed by the National Park Service in February 2012. Even though the beaver dam created a natural barrier that could have severed the tidal connection for multiple years, this area was surveyed for sensitive joint vetch. Due to the beaver activity, low species diversity, and a number of invasive species, this area would be marginal habitat. The upstream application of Accord could have also reduced the habitat value downstream. No sensitive joint vetch was found in this area.

Located just upstream of the culvert two streams converge to form the stream that flows under George Washington Memorial Parkway. The vegetation in this area is comprised of some green ash, and red maple, but is dominated by Pennsylvania smartweed, tussock sedge (*Carex stricta*), phragmites (*Phragmites australis*), tear thumb (*Polygonum sagittatum*), arrow arum (*Peltandra virginica*), and rose mallow (*Hibiscus moscheutos*). This area was habitat, and due to the size of this area transects were employed at 15 foot intervals and the entire area was traversed. Although it was found out later, this habitat was more marginal than first thought due to the National Park Service's application of Accord, a glycophosphate containing herbicide. The application was recent as indicted by the signs (see photographs 14 and 15, specifically) located along the perimeter of this entire area. Figures 5 and 6, and representative pictures of the area are shown in photographs 13, 16, 22, 23, and 24. Non-tidal forested wetlands, non-tidal beaver ponds, and non-tidal herbaceous areas upgradient from the tidal areas were eliminated as possible habitat due to the lack of tidal influence, the disconnect provided by the active beaver dams, as well as, the prevalence of phragmites. Figures 5 and 6, and representative pictures of the area are shown in photographs 12, 14, and 15.

4.0 Summary

Potential habitats for sensitive joint vetch (*Aeschynomene virginica*) were found in the APE during this investigation. The habitat was mostly marginal. The potential habitat was searched via transects and pedestrian traverse methods - based on the most effective search method for the habitat. Additional areas were eliminated as habitat, and thus were not searched; however, due to the confined and small size of these areas, if one or more plants were present, they would have been identified, and documented.

No sensitive joint vetch plants were identified during this survey and given the lack of seed source from an identified population of sensitive joint vetch in the area; it would be unlikely that this species would be found in this area in future years.

5.0 REFERENCES

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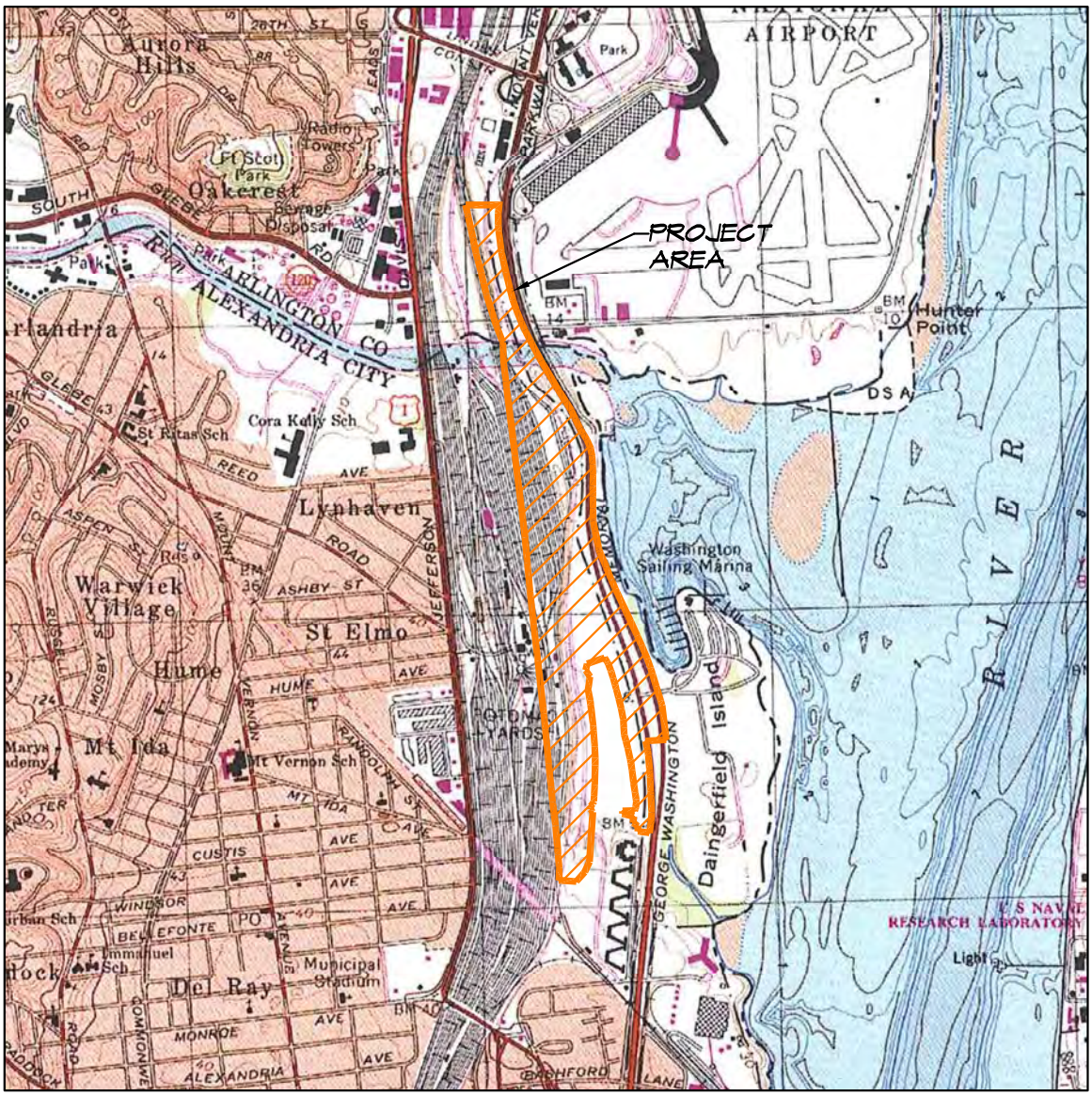

U.S.G.S. 7.5 SERIES QUADRANGLES
ALESANDRIA, VA-D.C.-MD, 1965 (PHOTOREVISED 1983)
(BATHYMETRY ADDED 1982)
SCALE: 1" = 2,000'

NOTE: ALL LOCATIONS ARE APPROXIMATE.

FIGURE 1
SITE LOCATION AND TOPOGRAPHY MAP
POTOMAC YARD METRORAIL STATION
SENSITIVE JOINT VETCH SURVEY
CITY OF ALEXANDRIA AND
ARLINGTON COUNTY, VIRGINIA
AUGUST 16, 2012

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United States Fish and Wildlife Service, National Wetlands Inventory (NWI) Map, 7.5 Minute Quadrangle, Alexandria, VA-D.C.-MD
Available URL: htt;://wetlandsfwser.usgs.gov/wtlndws/launch.html.
Accessed: [08142012], Scale: 1" = 1,500'

NWI LEGEND

PFO1C	-	PALUSTRINE, FORESTED, BROAD-LEAVED DECIDUOUS, SEASONAL.
PFO1Eh	-	PALUSTRINE, FORESTED, BROAD-LEAVED DECIDUOUS, SEASONAL SATURATED, DIKED/IMPOUNDED.
PFO1S	-	PALUSTRINE, FORESTED, BROAD-LEAVED DECIDUOUS, TEMPORARY TIDAL.
PFO4Ch	-	PALUSTRINE, FORESTED, NEEDLE-LEAVED EVERGREEN, SEASONAL, DIKED/IMPOUNDED.
PEM1Eh	-	PALUSTRINE, EMERGENT, PERSISTENT, SEASONAL SATURATED, DIKED/IMPOUNDED.
PSS1Ch	-	PALUSTRINE, SCRUB/SHRUB, BROAD-LEAVED DECIDUOUS, SEASONAL, DIKED/IMPOUNDED.

NOTE: ALL LOCATIONS ARE APPROXIMATE.

FIGURE 2
SITE LOCATION AND TOPOGRAPHY MAP
POTOMAC YARD METRORAIL STATION
SENSITIVE JOINT VETCH SURVEY
CITY OF ALEXANDRIA AND ARLINGTON COUNTY, VIRGINIA
AUGUST 16, 2012

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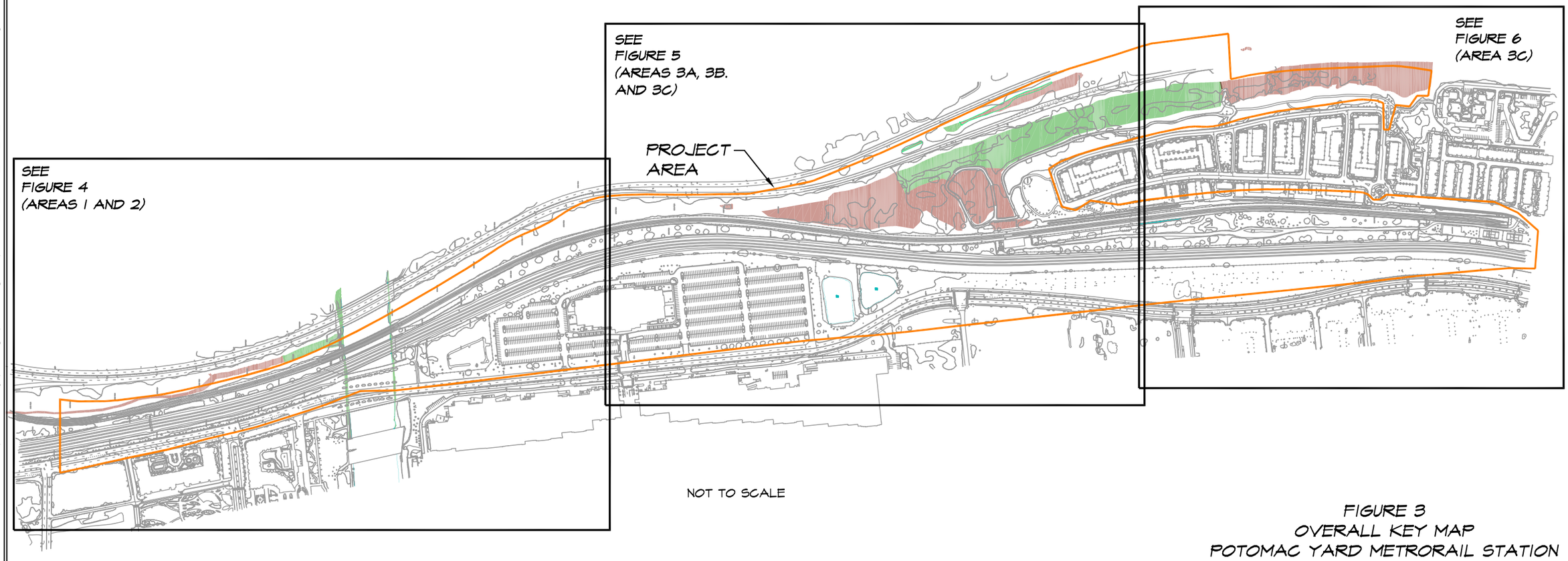

NOT TO SCALE

FIGURE 3
OVERALL KEY MAP
POTOMAC YARD METRORAIL STATION
SENSITIVE JOINT VETCH SURVEY
CITY OF ALEXANDRIA AND
ARLINGTON COUNTY, VIRGINIA
SEPTEMBER 7, 2012

NOTE: ALL LOCATIONS ARE APPROXIMATE.

NOTE:
THE BASE INFORMATION WAS TAKEN FROM
A DRAWING PROVIDED BY AECOM.

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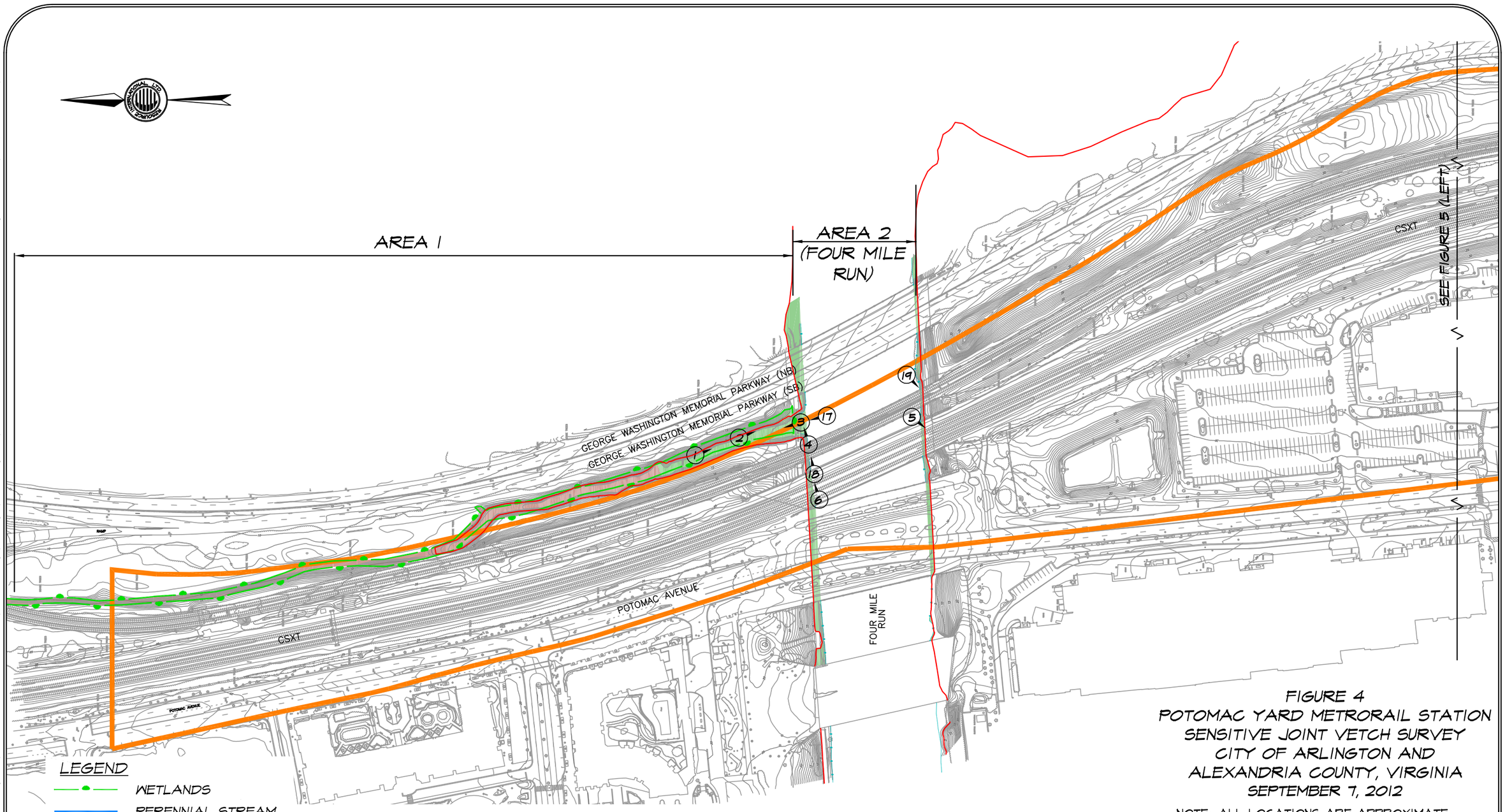

LEGEND

- WETLANDS
- PERENNIAL STREAM
- INTERMITTENT STREAM
- HABITAT (MARGINAL)
- NOT SUITABLE HABITAT
- ADDITIONAL STUDY AREA
- APPROXIMATE MEAN HIGHWATER ELEVATION (3FT MSL)
- (1) PHOTOGRAPH LOCATION AND ORIENTATION

200 0 100 200
(IN FEET)
1 inch = 200 ft.

FIGURE 4
POTOMAC YARD METRORAIL STATION SENSITIVE JOINT VETCH SURVEY CITY OF ARLINGTON AND ALEXANDRIA COUNTY, VIRGINIA SEPTEMBER 7, 2012

NOTE: ALL LOCATIONS ARE APPROXIMATE.

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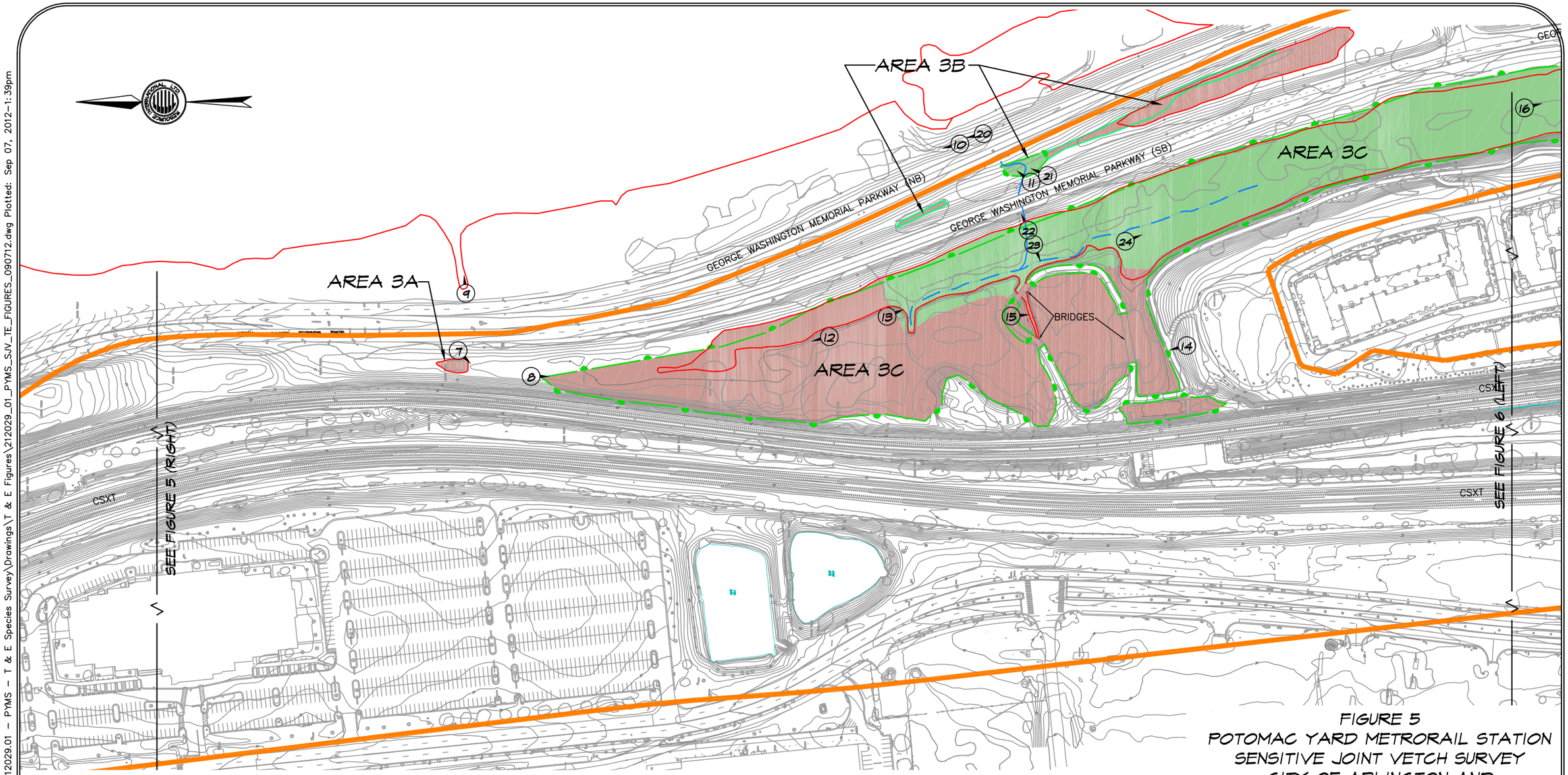

FIGURE 5
POTOMAC YARD METRORAIL STATION
SENSITIVE JOINT VETCH SURVEY
CITY OF ARLINGTON AND
ALEXANDRIA COUNTY, VIRGINIA
SEPTEMBER 7, 2012

NOTE: ALL LOCATIONS ARE APPROXIMATE.

LEGEND

- WETLANDS
- PERENNIAL STREAM
- INTERMITTENT STREAM
- HABITAT (MARGINAL)
- NOT SUITABLE HABITAT
- ADDITIONAL STUDY AREA
- APPROXIMATE MEAN HIGHWATER ELEVATION (3FT MSL)
- PHOTOGRAPH LOCATION AND ORIENTATION

200 0 100 200
(IN FEET)
1 inch = 200 ft.

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LEGEND

- WETLANDS
- PERENNIAL STREAM
- INTERMITTENT STREAM
- HABITAT (MARGINAL)
- NOT SUITABLE HABITAT
- ADDITIONAL STUDY AREA
- APPROXIMATE MEAN HIGHWATER ELEVATION (3FT MSL)
- 1 PHOTOGRAPH LOCATION AND ORIENTATION

200 0 100 200
(IN FEET)
1 inch = 200 ft.

FIGURE 6
POTOMAC YARD METRORAIL STATION
SENSITIVE JOINT VETCH SURVEY
CITY OF ARLINGTON AND
ALEXANDRIA COUNTY, VIRGINIA
SEPTEMBER 7, 2012

NOTE: ALL LOCATIONS ARE APPROXIMATE.

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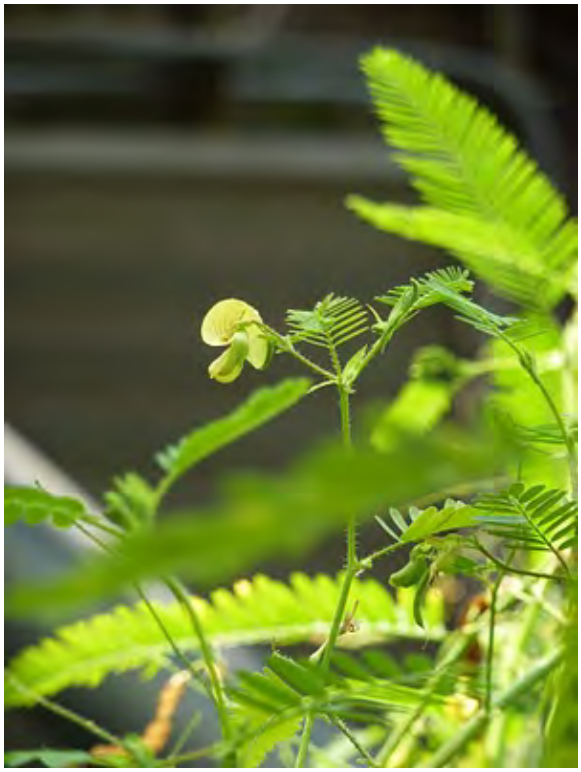
APPENDICES

APPENDIX A

Representative Photographs

Sensitive joint-vetch (*Aeschynomene virginica*)



PHOTOGRAPH 1: Sensitive joint-vetch (*Aeschynomene virginica*) side view.

PHOTOGRAPH 2: Sensitive joint-vetch (*Aeschynomene virginica*) side view.

APPENDIX B

Representative Site Photographs

Photograph 1. Area 1 - View of unnamed tributary of Four Mile Run during habitat survey on habitat survey on August 13, 2012.

Photograph 2. Area 1 - View of unnamed tributary of Four Mile Run during habitat survey on August 13, 2012, just upgradient of bike path. Note prevalence of riprap on banks to edge of water.

Photograph 3. Area 1 - View of confluence of unnamed tributary (Area 1) and (Area 2) Four Mile Run facing north from bike path.

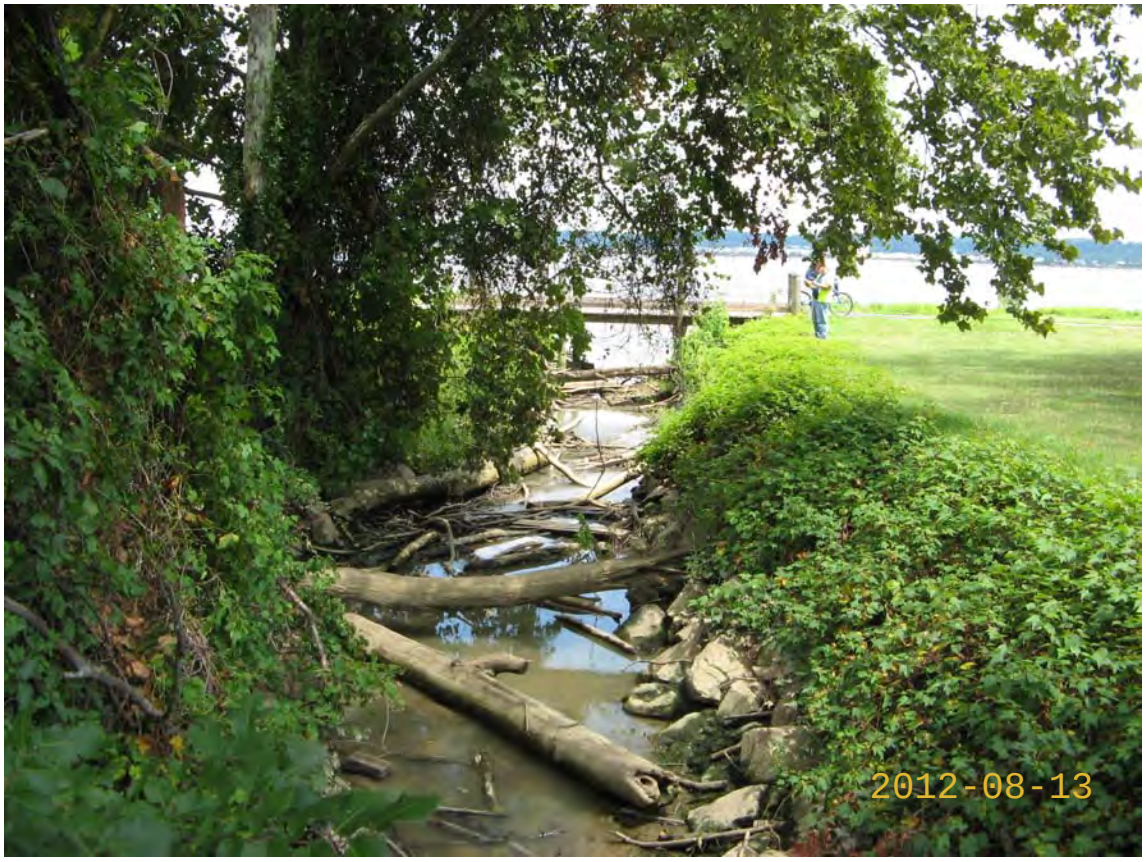
Photograph 4. Area 1 - View of Area 1 and Area 2 west side connection on August 13, 2012. Note gabion baskets at extending from below the water and extending above mean high tide.

Photograph 5. Area 2 - View of Area 2 southern bank of Four Mile Run on August 13, 2012, during habitat survey. Note gabion baskets that line stream banks from mean low water to above mean high tide.

Photograph 6. Area 2 - View of Area 2 northern bank of Four Mile Run on August 13, 2012, during habitat survey. Note gabion baskets that line stream banks from mean low water to above mean high tide..

Photograph 7. Area 3 - View of cistern on west side of George Washington Parkway and forest edge at north end of Area 3. Not suitable habitat due to concrete structure.

Photograph 8. Area 3 - View of nontidal wetland at north end of Area 3. Not suitable habitat for sensitive joint vetch due to lack of tidal influence.



Photoraph 9. View of northern unnamed tributary east of cistern in Photograph 7 and George Washington Parkway on August 13, 2012. This area is outside the Area of Potential Effect (APE); however previously provided a tidal connection between the Potomac River and the cistern located in a northern section of Area 3.

Photograph 10. View of unnamed tributary of Four Mile Run east of Area in median (Photograph 11) and George Washington Parkway, and north of the marina. This area is outside the APE but serves as a tidal connection between the Potomac River and Area 3, and the tidal stream in Photographs 11 and 22.

Photograph 11. Area 3 - View of tidal connection located in median of George Washington Parkway. Potential habitat for sensitive joint vetch.

Photograph 12. Area 3 - View in Area 3 facing north. Not suitable habitat due to presence of upland and nontidal areas from this point and dense overgrowth.

Photograph 13. Area 3 - View in Area 3 facing south on August 14, 2012.

Photograph 14. Area 3 - Close up of National Parks Service sign located in Area 3 indicating that the central and southern portions of Area 3 have been treated with the herbicide "Accord."

Photograph 15. Area 3 - View in central portion of Area 3 adjacent to walking paths. Note the stressed and dying vegetation treated with the herbicide "Accord."

Photograph 16. Area 3 - View of portions of Area 3 facing south. These areas have been treated by the National Parks Service with the herbicide "Accord."

Photograph 17. Area 1 - View of unnamed tribtary of Four Mile Run on August 15, 2012 during sensitive joint vetch survey. Marginal habitat, however, no sensitive joint vetch was found.

Photograph 18. Area 2 - View of northern bank of Four Mile Run on August 15, 2012. Marginal habitat, however, no sensitive joint vetch was found.

Photograph 19. Area 2 - View of southern bank of Four Mile Run. This bank is man dominated with gabion baskets filled with rocks. No sensitive joint vetch was found.

Photograph 20. View of unnamed tributary on August 15, 2012 east of Area 3, and not within APE. No sensitive joint vetch was found during the survey.

Photograph 21. Area 3 - View of median tidal connection between larger portion of Area 3 and east side tributary. Marginal habitat, but no sensitive joint vetch was found on August 15, 2012.

Photograph 22. Area 3 - View of culvert and connection of Area 3 tidal wetlands that connects to median of George Washington Parkway. No sensitive joint vetch was found.

Photograph 23. Area 3 - View of tidal tributaries in Area 3 immediately upgradient of culvert on west side of George Washington Parkway. No sensitive joint vetch was found.

Photograph 24. Area 3 - View of Area 3 facing south on August 15 2012. No sensitive joint vetch was found in this-tidal portion of Area 3. In addition, this area has been treated with the herbicide "Accord."

Attachment 5

VDCR and VDGIF Project Review and Correspondence

Douglas W. Domenech
Secretary of Natural Resources

David A. Johnson
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

Division of Natural Heritage
217 Governor Street
Richmond, Virginia 23219-2010
(804) 786-7951

June 18, 2012

Bill Pugh
AECOM
2101 Wilson Boulevard, 8th Floor
Arlington, VA 22201

Re: Potomac Yard Metrorail Station Environmental Impact Statement

Dear Mr. Pugh:

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 in the project area. However, due to the scope of the activity and the distance to the resources, we do not anticipate that this project will adversely impact these natural heritage resources.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Department of Conservation and Recreation (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.

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

New and updated information is continually added to Biotics. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

A fee of $90.00 has been assessed for the service of providing this information. Please find enclosed an invoice for that amount. Please return one copy of the invoice along with your remittance made payable to the Treasurer of Virginia, **DCR - Division of Natural Heritage, 217 Governor Street Richmond, VA 23219.** Payment is due within thirty days of the invoice date. Please note the change of address for remittance of payment as of July 1, 2008. Late payment may result in the suspension of project review service for future projects.

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 Gladys Cason (804-367-0909 or Gladys.Cason@dgif.virginia.gov). According to the information currently in our file, the Wood turtle (*Glyptemys insculpta*) has been historically documented in the project vicinity. Due to the legal status of the Wood turtle, DCR recommends coordination with Virginia's regulatory authority for the management and protection of this species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570).

Should you have any questions or concerns, feel free to contact me at (804) 692-0984. Thank you for the opportunity to comment on this project.

Sincerely,

Alli Baird

Alli Baird, LA, ASLA
Coastal Zone Locality Liaison

Cc: Amy Ewing, VDGIF

COMMONWEALTH of VIRGINIA

Douglas W. Domenech
Secretary of Natural Resources

Department of Game and Inland Fisheries

Robert W. Duncan
Executive Director

June 1, 2012

Bill Pugh - AECOM Transportation
Environmental and Transportation Planner
2101 Wilson Boulevard - 8th Floor
Arlington, VA 22201
Bill.pugh@aecom.com

Re: Project Review Request - Potomac Yard Metrorail Station

Dear Mr. Pugh:

We appreciate your interest in submitting your project(s) for review by VDGIF to ensure the protection of sensitive wildlife resources during project development. Unfortunately, due to staffing limitations, our Fish and Wildlife Information Services Section (FWIS) is unable to review or provide an assessment of any projects submitted to them for review.
No response from VDGIF does not constitute "no comment" nor does it imply support of the project or associated activities. It simply means VDGIF has not been able to respond.

If you should have further questions or need additional information, please visit:
http://www.dgif.virginia.gov/environmental-programs/

Please feel free to attach a copy of this letter/email with your project paper work.

Sincerely,

Mrs. Gladys D. Cason

Mrs. Gladys D. Cason
Virginia Department of Game & Inland Fisheries
Environmental Services Division
4010 West Broad Street // P.O. Box 11104
Richmond, VA 23230-1104
Phone: (804) 367-0909 Fax: (804) 367-2427
gladys.cason@dgif.virginia.gov

MEMORANDUM OF AGREEMENT
BETWEEN THE FEDERAL TRANSIT ADMINISTRATION,
THE CITY OF ALEXANDRIA, VIRGINIA,
THE WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY,
THE NATIONAL PARK SERVICE, AND THE VIRGINIA STATE HISTORIC PRESERVATION OFFICE, REGARDING
THE POTOMAC YARD METRORAIL STATION

WHEREAS the Potomac Yard Metrorail Station consists of a proposed station along the existing Metrorail Blue and Yellow Lines between Ronald Reagan Washington National Airport and the Braddock Road stations within the City of Alexandria, Virginia (**Attachment A, Figures 1 and 2**) ("Undertaking"); and

WHEREAS the Federal Transit Administration (FTA) may provide funding to the City of Alexandria, Virginia (City of Alexandria) for the Undertaking pursuant to Federal transit law (49 U.S.C. Chapter 53) and Section 106 of the National Historic Preservation Act of 1966, as amended (codified at 54 U.S.C. 300101, et seq.) and its implementing regulations at 36 CFR Part 800, as amended, hereinafter collectively referred to as "Section 106"; and

WHEREAS, the City of Alexandria is the Undertaking's project sponsor and FTA is serving as the Undertaking's lead Federal agency pursuant to the National Environmental Policy Act (NEPA, codified as 42 U.S.C. 4321 et seq.) and is the Federal agency responsible for compliance with Section 106; and

WHEREAS, FTA shall serve as the lead Agency Official and shall act in cooperation with the City of Alexandria, the Washington Metropolitan Area Transit Authority (WMATA), and the National Park Service (NPS) in fulfilling their collective responsibilities under Section 106; and

WHEREAS, the NPS, the Federal Agency with jurisdiction over the Mount Vernon Memorial Highway (MVMH) and George Washington Memorial Parkway (GWMP), which are part of the National Park System, and the Greens Scenic Area Easement (GSAE), has participated in the Section 106 process for the Undertaking; and

WHEREAS, the GSAE, an easement administered by the NPS, covers 15.27 acres north and east of the Potomac Greens neighborhood, on land owned by the City of Alexandria. The purpose of the easement is to conserve and preserve the natural vegetation, topography, habitat, and other natural features within its area. The GSAE is intended to provide a natural buffer between the GWMP and the development in Potomac Yard. The GSAE has been determined eligible for listing in the National Register of Historic Places (NRHP); and

WHEREAS, the Undertaking will use park land under the authority of the NPS, and WMATA and the City of Alexandria must obtain a NPS Special Use permit to access NPS park land; and

WHEREAS, NPS approval is required for the portion of the Undertaking affecting the GWMP and the Undertaking requires that NPS release their easement over the GSAE and the re-establishment of the NPS easement over the portion of the GSAE not used for the station; and

WHEREAS, after detailed study of various alternatives and their associated impacts, the City of

Alexandria, through coordination with FTA and WMATA, has identified a Preferred Alternative (Build Alternative B, Option 2 Construction Access from the Draft EIS and the Preferred Alternative from the Final EIS as shown in **Attachment A Figure 2**) for detailed engineering and construction for the Undertaking; and

WHEREAS, the Undertaking will be subject to a local design review process described in **Attachment B** that will require approval by the City of Alexandria and NPS; and

WHEREAS, FTA, in consultation with the Virginia State Historic Preservation Office (SHPO) for the Undertaking (DHR File No. 2012-0717), has established the Undertaking's Area of Potential Effects (APE) for purposes of the Section 106, as defined at 36 CFR 800.16(d), to encompass the geographic areas within which the Undertaking may directly and indirectly cause alterations in the character or use of historic properties, as illustrated in **Figure 3 of Attachment A**, recognizing that the APE may require modification as more detailed engineering for the Undertaking is developed; and

WHEREAS, FTA, in consultation with the SHPO and NPS, has identified five historic properties that are eligible for and/or listed in the NRHP within the Undertaking's APE: the Mount Vernon Memorial Highway (MVMH; NRHP-listed, Virginia Department of Historic Resources (DHR) ID#029-0218), the George Washington Memorial Parkway (GWMP; NRHP-listed, DHR ID#029-0228), the Greens Scenic Area Easement (No DHR ID#, contributing element to the MVMH and the GWMP), the Parkways of the National Capital Region, 1913-1965 (PNCR; NRHP-listed, DHR ID#029-5524), and the Abingdon Apartments (treated as NRHP-eligible, DHR ID#100-5264), as illustrated in **Figure 4 of Attachment A**; and

WHEREAS, FTA, in consultation with the NPS and the SHPO, has determined that the Undertaking will have adverse effects on the MVMH, the GWMP, the GSAE, and the PNCR, resulting from:

- Removal of contributing vegetative features of the MVMH and GWMP for construction of a staging area, station facilities, and realigned track. These activities will physically damage the historic properties and will create views not intended in the original design of the roadway; and
- Transfer of between 0.16 acre and 0.33 acre of land within the MVMH and GWMP out of NPS ownership and a transfer of between 1.71 acres and 1.94 acres of land within the GSAE (a contributing resource to the MVMH and GWMP) currently held by the NPS; and
- Permanent construction of rail facilities within the National Register boundaries of the GWMP and MVMH; and

WHEREAS, FTA, in consultation with the SHPO, has completed identification and evaluation of archaeological resources within the Undertaking's APE, as documented in the following reports: *Phase I Archaeological Survey Report, Potomac Yard Metrorail Station Project, City of Alexandria, Virginia and Arlington County, Virginia* (Lawrence et al. 2013) and *Addendum Phase I Archaeological Survey Report, Potomac Yard Metrorail Station Project, City of Alexandria, Virginia and Arlington County, Virginia* (Lawrence et al. 2016); and

WHEREAS, FTA, in consultation with the SHPO and NPS, has identified two archaeological resources within and in close proximity to the Undertaking's APE: 44AX0221, and 44AX0222; and

WHEREAS, FTA has identified and invited the following parties (herein referred to as "consulting parties") to review and comment on the effects and resolution of effects of the Undertaking on historic resources: United States Army Corps of Engineers (Norfolk District), Alexandria Historical Society, Alexandria Historical Restoration and Preservation Commission, Alexandria Federation of Civic Associations, Old Town Business and Professional Association, Arlington County Department of Community Planning (Housing and Development, Neighborhood Services Division), Lynhaven Civic Association, National Capital Planning Commission, and the North East Citizens' Association. FTA has invited the United States Army Corps of Engineers (Norfolk District) and National Capital Planning Commission to sign this MOA as concurring parties; and

WHEREAS, the United States Army Corps of Engineers (Norfolk District) has delegated the responsibility of carrying out Section 106 to FTA, the lead Agency Official; and

WHEREAS, in accordance with 36 CFR § 800.6(a)(1), FTA has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination with the required documentation and the ACHP has chosen not to participate pursuant to 36 CFR § 800.6(a)(1)(iii); and

WHEREAS, this MOA was developed with appropriate public involvement (pursuant to 36 CFR 800.2(d) and 800.6(a)), and the public was provided the opportunity to comment on the Undertaking and will hereafter be provided with further opportunities to comment on the Undertaking as stipulated further in this MOA.

NOW, THEREFORE, FTA, the City of Alexandria, WMATA, NPS, and the SHPO agree that the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the Undertaking on historic properties.

STIPULATIONS

The FTA, in coordination with the City of Alexandria, shall ensure that the following stipulations are implemented:

I. TREATMENT OF ARCHITECTURAL RESOURCES

A. Land Exchange for the MVMH, GWMP, PNCR, and the GSAE

1. The United States shall convey to the City of Alexandria in fee between 0.16 and 0.33 acre of land within the GWMP, MVMH, and PNCR and it will release its easement on between 1.71 and 1.94 acres of the GSAE to the extent needed for the construction of the station. The terms of the United States easement over between 7.01 and 7.24 acres of the GSAE will remain unchanged.

2. The City of Alexandria shall convey approximately 6.32 acres of the GSAE (as shown in Exhibit A of **Attachment C**) to the United States in fee in exchange for between 0.16 and 0.33 acre of land permanently used by the proposed Metrorail Station that is part of the GWMP, MVMH, and PNCR and for between 1.71 and 1.94 acres of the GSAE to the extent needed for the construction of the station. If the property cannot be transferred to the United States, then another parcel or parcels of equal appraised fair market value mutually agreeable to the City of Alexandria and the NPS will be exchanged under

consultation with SHPO, and the MOA will be amended accordingly.

B. Landscape Treatment

For the purpose of minimizing visual effects from the Undertaking on the MVMH, GWMP, PNCR, and the GSAE, FTA shall ensure that the following is implemented:

1. Completion of a current conditions landscape plan by WMATA for all areas of vegetation to be removed from the GWMP and Greens Scenic Area Easement, prior to construction. Evaluate the number, type, size, age, and health of vegetation. Include a restoration plan as referenced in the FEIS Page 3-160, Section 3.9.4.1.

2. Restoration of the vegetative screening along the western side of the MVMH/GWMP and along the GSAE in areas used for construction of the Undertaking, in a manner consistent with the recommendations in the *2009 Cultural Landscape Report, The Vegetation of the George Washington Memorial Parkway, Central Section: Alexandria to Arlington Memorial Bridge.*

3. Any submittals made to the City of Alexandria for review and approval will be distributed to NPS for review and approval in accordance with **Attachment B**.

C. Station Design and Architecture

For the purpose of minimizing effects from the Undertaking on the MVMH, GWMP, PNCR, and the GSAE, FTA shall ensure that the station is designed and constructed in accordance with the following provisions:

1. June 2016 City of Alexandria Staff Report on the approval of the Master Plan Amendment, Rezoning, and Development Special Use Permits (see **Attachment D**, specifically: Section IV Staff Analysis, D. Station Design and E. Board of Architectural Review (BAR); Section VII Graphics; and Section VIII Staff Recommendations – DSUP2016-0004);

2. Architectural renderings shown in **Attachment D: Section VII**, including graphics, which were developed in cooperation with representatives of NPS, the City of Alexandria, and WMATA; and

3. Architectural plans shown in **Attachment E**, which were developed in cooperation with representatives of NPS, the City of Alexandria, and WMATA.

4. WMATA shall submit final design plans to all signatories for review per Stipulation III and shall address any comments provided within 30 calendar days. See **Attachment B** for the requirements of the local design review process.

D. Additional Provisions for the Treatment of Architectural Resources

1. Per the Net Benefits Agreement between the City of Alexandria and the NPS, which will be executed concurrently with the issuance of the NPS Record of Decision, the City of Alexandria shall convey $12 million to the NPS Impact Fund Account to be used to fund compensatory projects as detailed in **Attachment C**, to minimize or mitigate effects to cultural and natural resources within the GWMP. Some of the provisions in the Net Benefits Agreement are related to mitigation for GWMP parkland effects as well as other

cultural and natural resource effects. The Alexandria City Council has approved the Net Benefits Agreement. See **Attachment C, Article III, Section C: Compensatory Mitigation Fund** for additional details and a list of items to be funded by the account.

2. Following the completion of select studies outlined in the Net Benefits Agreement, NPS shall develop and publish content for the GWMP website, including but not limited to, articles, reports, maps, and enhanced digital media. The internet-based materials will convey the historic and commemorative significance of the GMWP to the public.

II. TREATMENT OF ARCHAEOLOGICAL RESOURCES

A. Construction Protection Plan

The City of Alexandria and WMATA, in coordination with FTA, shall develop a construction protection plan (CPP) in consultation with NPS and SHPO, and in accordance with Stipulation III to assure protection of archaeological resources within 100 feet of project impacts. The plan shall be approved before commencement of onsite excavation activities. NPS internal procedures shall apply only to activities and resources on NPS properties or the GSAE. The CPP will include the following elements:

1. Language will be included in the project bid documents to make contractors aware that archaeologically sensitive areas are present near their work zone and must be avoided.

2. A professional archaeologist shall supervise the installation of protective fencing in the area between the project LOD and the boundaries of 44AX0221 and 44AX0222. Given the relatively shallow depths of archaeological deposits in this area (0-11 centimeters), use of either jersey barriers or a footed fence is recommended, as opposed to in-ground fencing. If such barriers are used, protective surface matting must be laid underneath these types of barriers. The protective fencing should be installed prior to construction and maintained in place during the entirety of the construction project.

3. A professional archaeologist meeting 36 CFR Part 61 qualifications will be present to monitor any ground-disturbing activity in the vicinity of archaeological sites 44AX0221 and 44AX0222. Construction activities with the potential to impact subsurfaces include, but are not limited to, excavation, grading, or the removal of the root system of vegetation. In the event that any archaeological remains may be encountered in the monitoring zone, the protocol established for unanticipated discoveries will be followed.

4. A professional archaeologist will review design drawings for excavations within fifty feet of soil borings B-101, B-102, B-103, B-104 and B-107 as shown in **Attachment F**, to confirm that construction impacts do not exceed ten (10) feet beneath current grade in those areas, If construction impacts exceed ten (10) feet beneath current grade in those areas, additional archaeological monitoring shall be required.

III. PREPARATION AND REVIEW OF DOCUMENTS

A. All technical reports, architectural and archaeological studies, treatment plans, and other documentation prepared pursuant to this Agreement shall be consistent with the federal standards entitled *Archeology and Historic Preservation: Secretary of the Interior's*

Standards and Guidelines (48 FR 44716-44742, September 29, 1983) and *Guidelines for Preparing Identification and Evaluation Reports for Submission Pursuant to Sections 106 and 110, National Historic Preservation Act*, the SHPO's *Guidelines for Conducting Historic Resources Survey in Virginia* (rev. 2011), and the ACHP's *Recommended Approach for Consultation on Recovery of Significant Information from Archaeological Sites* (1999) or subsequent revisions or replacements to these documents.

B. The signatories to this Agreement agree to provide comments to the WMATA and/or the City on all plans, technical materials, findings, and other documentation arising from this Agreement within thirty (30) calendar days of receipt. In the situation where there are conflicting comments from the signatories, the affected signatories will discuss and reconcile these comments prior to transmitting them back to WMATA. If no comments are received from a signatory to this Agreement within the thirty (30) calendar days review period, WMATA and/or the City may assume that the signatory has no comment. WMATA and/or the City shall ensure that all comments received in writing within thirty (30) calendar days of receipt are addressed in the final documentation.

C. WMATA and/or the City shall provide the SHPO three copies (two hard copies and one in Adobe Acrobat format (PDF) on compact disk) of all final reports prepared pursuant to this Agreement. WMATA and/or the City shall also provide any other signatory to the Agreement a copy of any final report (in hard copy or Adobe Acrobat format, as requested) if so requested by that party. Such requests must be received by the WMATA and/or the City in writing prior to the completion of construction of the Undertaking.

IV. PROFESSIONAL QUALIFICATIONS

All worked carried out pursuant to this Agreement shall be conducted by or under the direct supervision of personnel meeting *The Secretary of the Interior's Professional Qualifications Standards* (48 FR 44716) (hereinafter cited as "qualifications") with experience and background in History, Architectural History, Historic Architecture, and Archaeology, as appropriate. These personnel shall perform or directly supervise all cultural resources work pursuant to this MOA.

V. POST-REVIEW DISCOVERIES

A. In the event that a previously unidentified archaeological resource is discovered during ground-disturbing activities associated with construction of the Undertaking, FTA shall require the construction contractor to halt all construction work involving subsurface disturbance in the area of the resource and in surrounding areas where additional subsurface remains can reasonably be expected to occur. Work in all other areas of the Undertaking may continue.

B. The City shall notify the FTA of the archaeological discovery within one (1) working day of its discovery, and shall notify the SHPO within two (2) working days of the discovery. In the case of prehistoric or historic Native American sites, the FTA shall notify appropriate federally recognized Indian tribes with interest in the area within two (2) working days. FTA shall also notify appropriate Indian tribes recognized by the Commonwealth of Virginia (hereinafter "Virginia Indian tribes") within two (2) working days of the discovery.

C. The City shall ensure that an archaeologist meeting the Secretary of the Interior's *Professional Qualification Standards* (48 FR 44739) investigates the work site and the resource, and the City shall then forward to the FTA, the SHPO, appropriate federal Indian tribes, and appropriate Virginia Indian tribes an assessment of the eligibility of the resource for listing in the NRHP, in reference to the criteria described at 36 CFR 60.4, and proposed treatment actions to resolve any adverse effects on the resource. The SHPO, appropriate federal Indian tribes, and appropriate Virginia Indian tribes shall respond within five (5) working days of receipt of the City's assessment of NRHP eligibility of the resource and proposed action plan. The City, in consultation with the FTA, shall take into account the recommendations of the SHPO, appropriate federal Indian tribes, and appropriate Virginia Indian tribes regarding NRHP eligibility of the resource and proposed action plan, and then carry out the appropriate actions.

D. The City shall ensure that construction work within the affected area does not proceed until the appropriate treatment measures are developed and implemented or the determination is made that the located resource is not eligible for inclusion in the NRHP. Prior to authorizing construction work to proceed in the affected area, the City shall provide written documentation to the SHPO and FTA in writing that one or the other of these requirements have been met.

VI. TREATMENT OF HUMAN REMAINS

A. Upon discovery of human remains, WMATA and its construction contractor will temporarily stop associated construction activities and contact the City of Alexandria Police Department to verify if remains are of recent or historic origin.

B. The City shall treat all human remains in a manner consistent with the ACHP "Policy Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects" (February 23, 2007: http://www.achp.gov/docs/hrpolicy0207.pdf).

C. Human remains and associated funerary objects encountered during the course of actions taken as a result of this Agreement shall be treated in a manner consistent with the provisions of the Virginia Antiquities Act, Section 10.1-2305 of the *Code of Virginia* and its implementing regulations, 17 VACS-20, adopted by the Virginia Board of Historic Resources and published in the Virginia Register on July 15, 1991, and the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001) and its implementing regulations, 36 CFR Part 10. In accordance with the regulations stated above, the City may obtain a permit from the SHPO for the archaeological removal of human remains should removal be necessary.

D. In the event that the human remains encountered are likely to be of Native American origin, whether prehistoric or historic, the FTA shall immediately notify the appropriate federal Indian tribes and appropriate leaders of Virginia Indian tribes. The FTA shall determine the treatment of Native American human remains and associated funerary objects in consultation with the appropriate federal tribes and leaders of Virginia Indian tribes.

E. The City shall make all reasonable efforts to ensure that the general public is excluded from viewing any Native American gravesites and associated funerary objects. The signatories to

this Agreement shall release no photographs of any Native American gravesites or associated funerary objects to the press or to the general public.

VII. MONITORING AND REPORTING

Every year following the date of the last signature of this MOA until the Agreement expires or is terminated, the City shall provide all signatories and concurring parties to this MOA a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received during efforts to carry out the terms of this MOA.

VIII. DISPUTE RESOLUTION

A. Objections by a Signatory or Concurring Party

Should any signatory or concurring party to this Agreement object in writing to FTA regarding any plans or actions, provided for review pursuant to this Agreement, or should any signatory party to this Agreement object in writing to the FTA regarding the manner in which measures stipulated in this Agreement are being implemented, the FTA shall first consult with the objecting party to resolve the objection. If the FTA determines that the objection cannot be resolved through such consultation, the FTA shall then consult with all of the signatories to this Agreement to resolve the objection. If the FTA then determines that the objection cannot be resolved through consultation, the FTA shall:

1. Forward all documentation relevant to the objection, including FTA's proposed resolution, to the ACHP. Prior to reaching a final decision on the dispute, FTA shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatory parties, and other concurring parties, and provide them with a copy of this written response.

2. FTA 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 FTA's responsibility to carry out all actions under this Agreement that are not the subjects of the objection shall remain unchanged.

3. If the ACHP does not provide its advice regarding the objection within thirty (30) calendar days after receipt of all pertinent documentation, FTA may assume the ACHP's concurrence in its proposed response to the objection. Henceforth, FTA may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, FTA shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA, and provide them and the ACHP with a copy of such written response.

B. Objections by the Public

At any time during the implementation of the measures stipulated in this Agreement, should a member of the public object to the FTA, WMATA, the City, NPS, or the SHPO regarding the manner in which the measures stipulated in this Agreement are being implemented, the FTA shall notify the signatories to this Agreement and consult with the objector to resolve the objection.

IX. EMERGENCY SITUATION

If an emergency situation that represents an immediate threat to public health, safety, life or property creating the potential to affect a historic property should occur during the duration of this MOA, the regulations set forth in 36 CFR 800.12 shall be followed. The City shall notify FTA, WMATA, NPS, and the SHPO of the condition that has created the situation and the measures to be taken to respond to the emergency or hazardous condition. FTA, WMATA, the SHPO, and the NPS may submit comments to the City within seven (7) calendar days of the notification. If the City determines that circumstances do not permit seven (7) calendar days for comment, the City shall notify FTA, WMATA, the SHPO, and the NPS and request comments in the stated time available. The City shall consider these comments in developing a response to the treatment of historic properties in relation to the emergency, and FTA shall ensure that any proposed treatment or amendment follows the procedure set forth under Stipulation XI.A, taking into consideration the sensitivity and urgency of the emergency.

X. ANTI-DEFICIENCY ACT – FEDERAL PARTIES

The obligations of Federal agencies under this MOA are pursuant to 31 U.S.C. 1341(a)(1); therefore nothing in this MOA shall be construed as binding the United States to expend in any one fiscal year any sum in excess of appropriations made by Congress for this purpose, or to involve the United States in any contract or obligation for the further expenditure of money in excess of such appropriations.

XI. AMENDMENTS AND TERMINATION

A. Any signatory to this MOA may request that it be amended, whereupon the required signatories and concurring parties shall consult to consider the proposed amendment in accordance with 36 CFR 800.6(c)(7). Any amendment shall be in writing and signed by all required signatories of this Agreement. FTA shall provide a copy of the amended MOA to all consulting parties within thirty (30) calendar days of execution.

B. If the FTA, WMATA, or the City decides they shall not proceed with the Undertaking, they shall so notify the other signatories and concurring parties, and this MOA shall become null and void.

C. If the FTA, WMATA, or the City determines that it cannot implement the terms of this MOA, or if the SHPO determines that this MOA is not being properly implemented, the FTA or the SHPO may propose to the other parties that this MOA be amended or terminated.

D. This MOA may be terminated by any signatory to the MOA in accordance with the procedures described in 36 CFR 800.6(c)(8). Termination shall include the submission of a technical letter report by the FTA, WMATA, or the City, on any work done up to and including the date of termination. If the SHPO is unable to execute another Memorandum of Agreement following termination, the SHPO may choose to modify, suspend, or revoke the mitigation concurrence as provided by 33 CFR 325.7.

E. In the event that this MOA is terminated, and prior to work continuing on the Undertaking, the FTA shall either reinitiate consultation and comply with 36 CFR pt. 800 or request the comments of the ACHP under 36 CFR 800.7(a). The FTA shall notify the signatories as to the course of action it will pursue.

XII. DURATION

This MOA shall continue in full force and effect for ten (10) years after the date of the last signature by a Signatory party. At any time in the six (6)-month period prior to such date, the signatories may consider extending the MOA or making modifications to this MOA. No extension or modification shall be effective unless all parties to the MOA have agreed with it in writing. Any extension or modification of this MOA shall be done in accordance with Stipulation XI, above.

XIII. EXECUTION

Execution of this MOA by the FTA, WMATA, the City, NPS, and the SHPO, and its submission to the ACHP in accordance with 36 CFR 800.6(b)(2) shall, pursuant to 36 CFR 800.6(c), be considered to be an agreement with the ACHP for the purposes of Section 110(I) of the National Historic Preservation Act (54 U.S.C. §306108). Execution and submission of the MOA, and implementation of its terms, is evidence that the FTA has afforded the ACHP an opportunity to comment on the proposed Project and its effects on historic properties, and that the FTA has taken into account the effects of the Project on historic properties.

SIGNATORIES:

FEDERAL TRANSIT ADMINISTRATION

By: _____ Date: 10-17-16

Terry Garcia Crews
Regional Administrator

CITY OF ALEXANDRIA, VIRGINIA

By: _____ Date: 10-6-16

Mark Jinks
City Manager

APPROVED AS TO FORM:

_____

DEPUTY CITY ATTORNEY

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

By: _____ Date: 10.11.16

John Thomas
Acting Chief Engineer

VIRGINIA STATE HISTORIC PRESERVATION OFFICER

By: _____ Date: 10/20/16

Julie V. Langan
Director, Department of Historic Resources

NATIONAL PARK SERVICE

By: _____ Date: 10/24/16

Alexcy Romero
Superintendent

CONCURRING PARTIES:

UNITED STATES ARMY CORPS OF ENGINEERS (NORFOLK DISTRICT)

By: _____ Date:_____

NATIONAL CAPITAL PLANNING COMMISSION

By: _____ Date:_____

APPENDIX E. DELINEATION INFORMATION

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

SEPTEMBER 27, 2017

APPROVED JURISDICTIONAL DETERMINATION

Northern Virginia Regulatory Section
NAO-2012-02012 (Potomac Yard Metrorail)

Mr. Jason Kacamburas P.E., CCM
Potomac Yard Metro Coordinator
City of Alexandria - Department of Project Implementation
301 King Street, Suite 3200
Alexandria, VA 22314

Dear Mr. Kacamburas:

This letter is in regard to your request for a re-verification of an approved jurisdictional determination for waters of the U.S. (including wetlands) on property known as the Potomac Yard Metrorail Station, located on an approximately 117.0 acre parcel in Alexandria and Arlington County, Virginia.

Site conditions remain the same and a jurisdictional determination has found waters and/or wetlands regulated under Section 10 of the Rivers and Harbors Act (33 U.S.C. 403) and/or Section 404 of the Clean Water Act (33 U.S.C. 1344) on property listed above. Nontidal and/or tidal wetlands and/or waters have been identified on the site. This letter shall serve to confirm the wetlands delineation by AECOM, Inc. as surveyed and shown on the maps titled, “Potomac Yard Metrorail Station” dated April 2012 (copies enclosed).

Our basis for this determination is the application of the Corps' 1987 Wetland Delineation Manual and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region and the positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation. The wetland is a water of the United States and is part of a tributary system to interstate waters (33 CFR 328.3(a)). These waters meet the Corps' definition of waters of the United States, are part of a tributary system to interstate waters (33 CFR 328.3 (a)) and have an ordinary high water mark or high tide line. This letter is not confirming the Cowardin classifications of these aquatic resources.

Discharges of dredged or fill material, including those associated with mechanized landclearing, into jurisdictional waters and/or wetlands on this site will require a Department of the Army permit and may require authorization by state and local authorities, including a Virginia Water Protection Permit from the Virginia

Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC) and/or a permit from your local wetlands board. This letter is a confirmation of the Corps jurisdiction for the waters and/or wetlands on the subject property and does not authorize any work in these jurisdictional areas. Please obtain all required permits before starting work in the delineated waters/wetland areas.

This letter contains an approved jurisdictional determination for your subject site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the North Atlantic Division Office at the following address:

ATTN: Mr. James Haggerty, Regulatory Program Manager
United States Army Corps of Engineers
CENAD-PD-OR
Fort Hamilton Military Community
301 General Lee Avenue
Brooklyn, NY 11252-6700
Email: james.w.haggerty@usace.army.mil

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 C.F.R. part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by ****November 27, 2017.**** It is not necessary to submit an RFA form to the Division office if you do not object to the determination in this letter.

This jurisdictional determination is valid for a period of five years from the date of this letter unless new information warrants revision prior to the expiration date. If you have any questions, please contact Ms. Theresita Crockett-Augustine in the Northern Virginia Field Office at 18139 Triangle Plaza, Suite 213, Dumfries, Virginia 22026, (757) 201-7194 or **theresita.m.crockett-augustine@usace.army.mil**.

Sincerely,

Theresita Crockett-Augustine
Environmental Scientist
Northern Virginia Regulatory Section

Enclosures

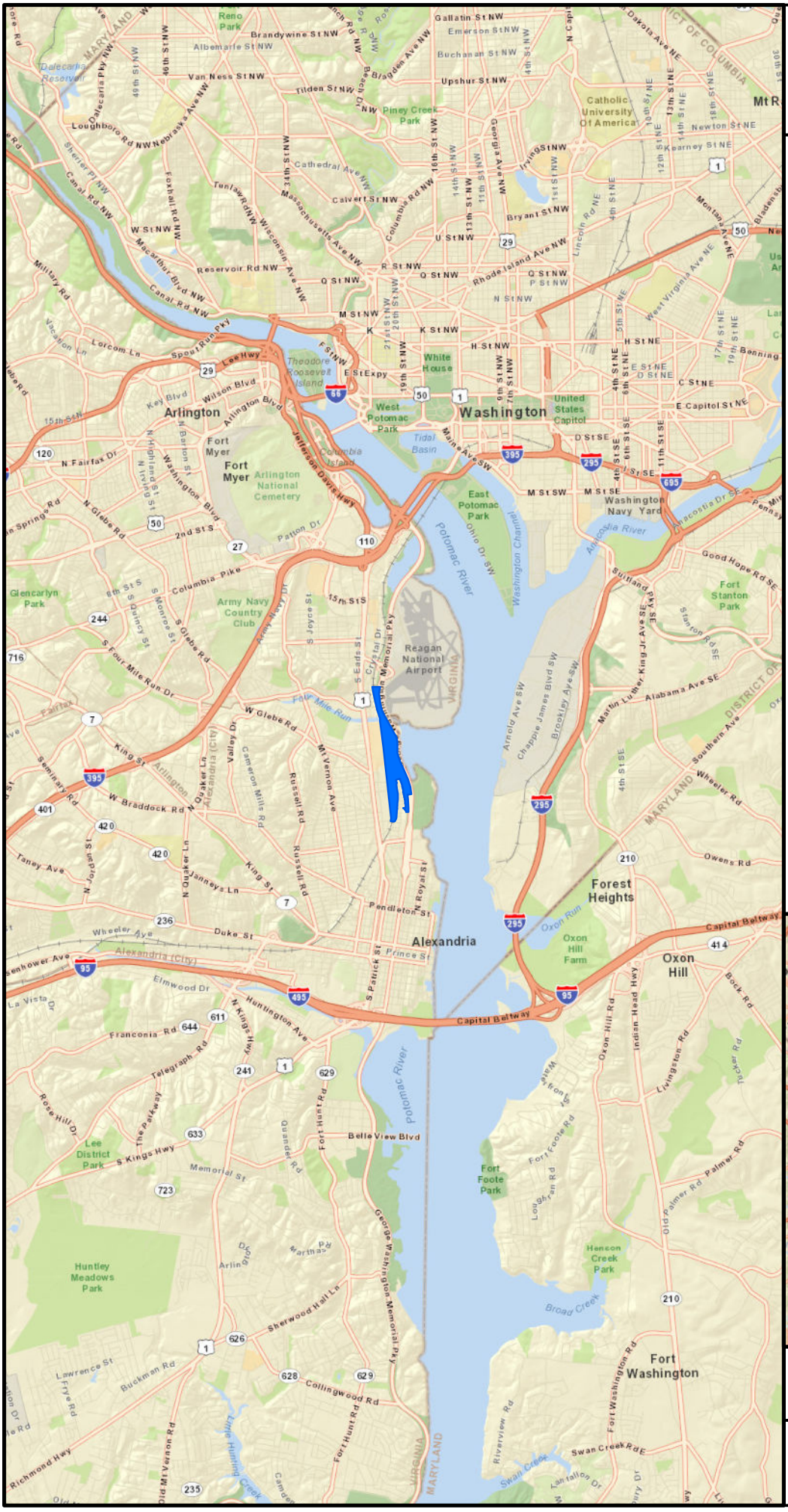


Figure 1
Regional Vicinity

LEGEND

- Study Area
- Project Location

Source: ESRI Data & Maps, DeLorme 2009

0 1 2 Miles

N

POTOMAC YARD METRORAIL STATION EIS

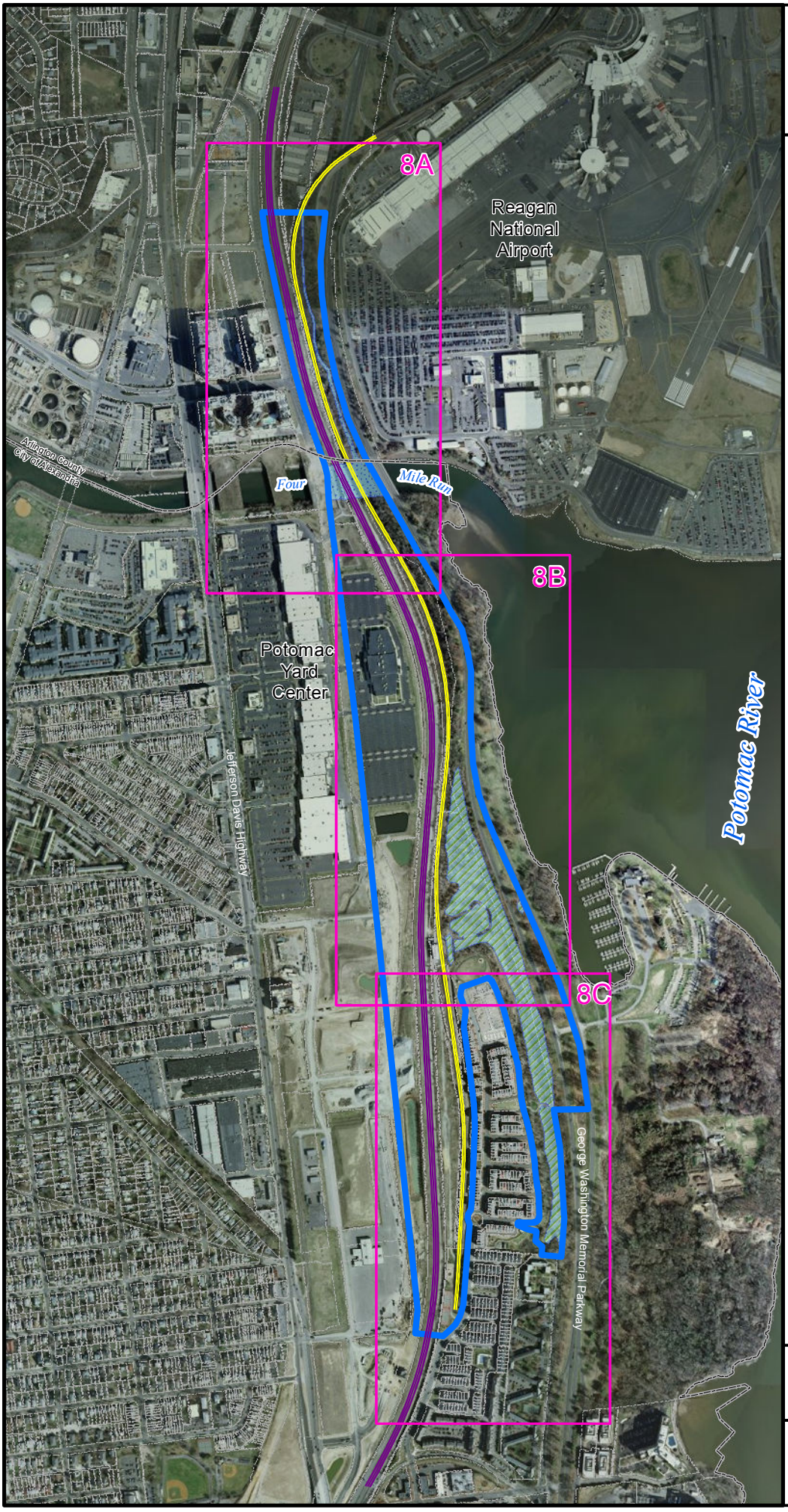


Figure 8
Wetland Delineation with Aerial Photography - Overall

LEGEND

- Study Area
- Tracks - WMATA
- Tracks - CSXT
- Waters of the U.S.
- USACE/Section 404 Wetland
- Parcels
- City Boundary
- Index Grid

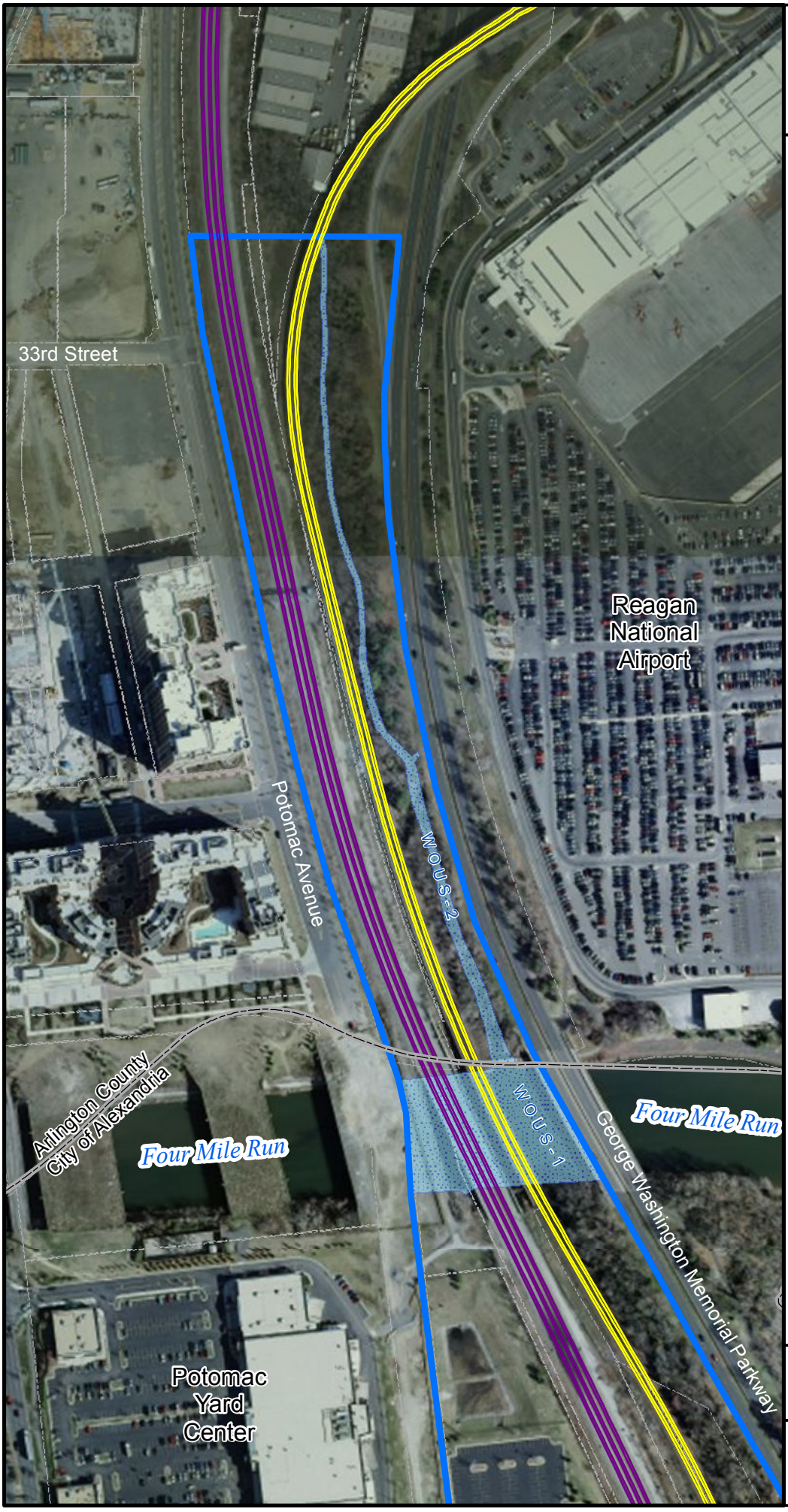
Source: City of Alexandria 2010
Arlington County 2011
WMATA 2011
ESRI 2011

0 500 1,000 Feet

N

POTOMAC YARD METRORAIL STATION EIS

Figure 8A
Wetland Delineation with Aerial Photography - North



LEGEND

- Study Area
- City Boundary
- Tracks - CSXT
- Tracks - WMATA
- Waters of the U.S.
- Parcels

	Square Feet	Acres	Linear Feet
Wetland ID			
W404-1	530,927	12.19	-
W404-2	2,530	0.06	-
W404-3	7,196	0.17	-
total	540,653	12.42	
Waters ID			
WOUS-1	84,106	1.93	396
WOUS-2	31,817	0.73	1795
total	115,923	2.66	2191
Study Area	5,129,028	117.75	-
Note:			
Measurements apply to entre study area.			

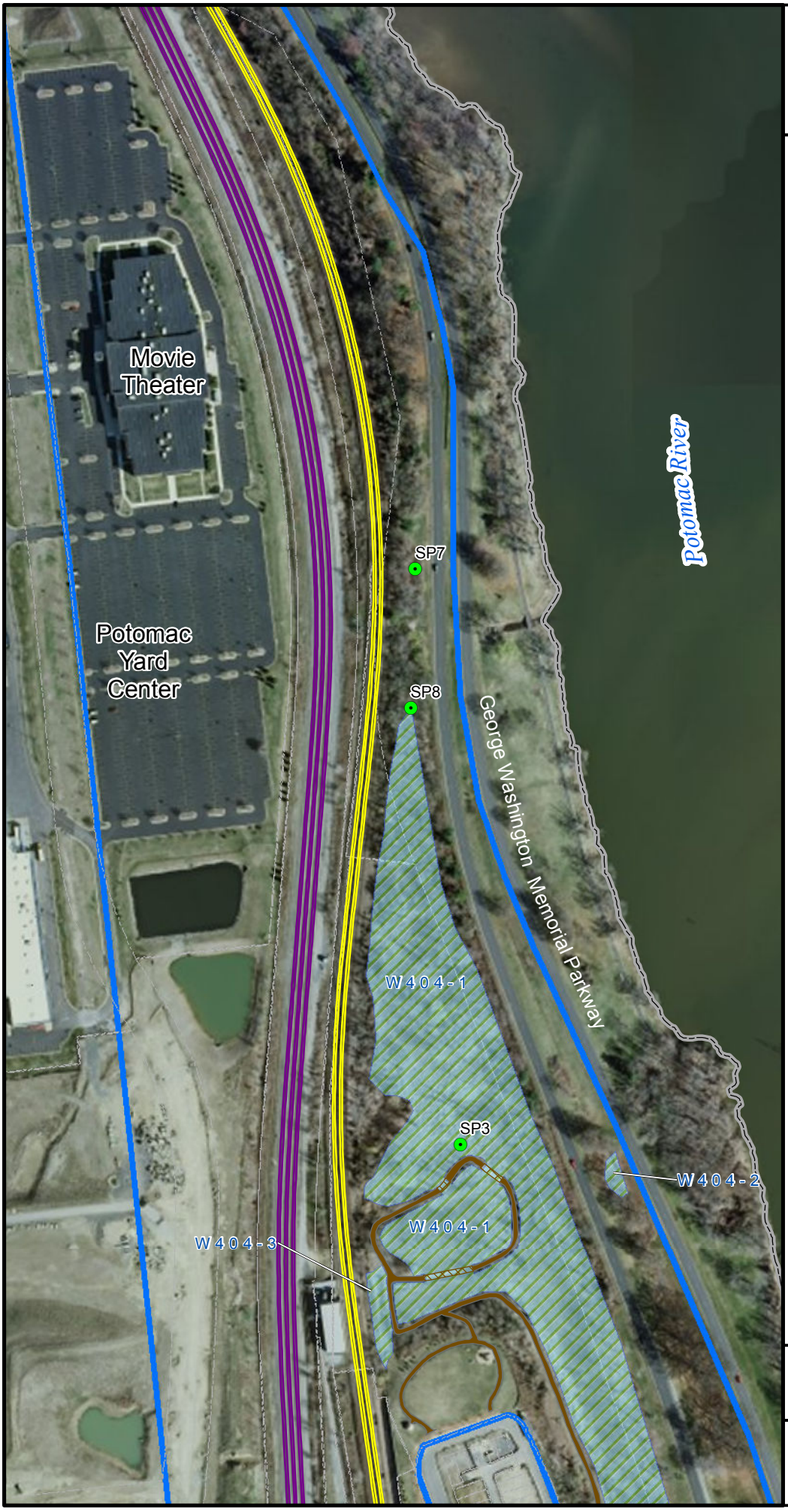
Source: City of Alexandria 2010, WMATA 2011

0 150 300 Feet

N

POTOMAC YARD METRORAIL STATION EIS

Figure 8B
Wetland Delineation with Aerial Photography - Central



LEGEND

- Study Area
- City Boundary
- Tracks - WMATA
- Tracks - CSXT
- Wetland Sample Points
- USACE/Section 404 Wetland
- Parcels

	Square Feet	Acres	Linear Feet
Wetland ID			
W404-1	530,927	12.19	-
W404-2	2,530	0.06	-
W404-3	7,196	0.17	-
total	540,653	12.42	
Waters ID			
WOUS-1	84,106	1.93	396
WOUS-2	31,817	0.73	1795
total	115,923	2.66	2191
Study Area	5,129,028	117.75	-
Note:			
Measurements apply to entre study area.			

Source: City of Alexandria 2010, WMATA 2011, ESRI 2011

0 150 300 Feet

N

POTOMAC YARD METRORAIL STATION EIS

Figure 8C
Wetland Delineation with Aerial Photography - South

LEGEND

- Study Area
- City Boundary
- Tracks - WMATA
- Tracks - CSXT
- Wetland Sample Points
- USACE/Section 404 Wetland
- Parcels

	Square Feet	Acres	Linear Feet
Wetland ID			
W404-1	530,927	12.19	-
W404-2	2,530	0.06	-
W404-3	7,196	0.17	-
total	540,653	12.42	
Waters ID			
WOUS-1	84,106	1.93	396
WOUS-2	31,817	0.73	1795
total	115,923	2.66	2191
Study Area	5,129,028	117.75	-
Note:			
Measurements apply to entre study area.			

Source: City of Alexandria 2010, WMATA 2011

0 150 300 Feet

N

POTOMAC YARD METRORAIL STATION EIS

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VIRGINIA 23510-1011

SEPTEMBER 27, 2017

Supplemental Preapplication Information

Project Number: NAO-2012-02012 (Potomac Yard Metrorail)
Applicant: City of Alexandria
Project Location: Alexandria and Arlington County, Virginia

1. A search of the Virginia Department of Historic Resources data revealed the following:

☐ No known historic properties are located on the property.

☒ The following known architectural resources are located on the property:

DHR ID	Address	Restricted	Property Names
029-0218-0003	George Washington Memorial Parkway	-	Bridge, George Washington Memorial Parkway over Four Mile Run (Descriptive)
029-0218	Mount Vernon Memorial Highway	Unrestricted	George Washington Memorial Highway (portion) (Descriptive), Mount Vernon Memorial Highway (NRHP Listing)
029-0228-0131	Mount Vernon Memorial Highway/GWMP	-	Mount Vernon Trail (Current Name)
500-0001	CSX Tracks	-	Richmond, Fredericksburg and Potomac Railroad Historic District (Historic)

☒ The following known archaeological resources are located on the property:

DHR ID	Site Name	Site Category	Time Period	NR Eligible	Restricted
44AX0204	-	Domestic, DSS Legacy	Woodland (1200 B.C. - 1606 A.D.), 19th Century (1800 - 1899)	-	Restricted: No release
44AX0222	-	DSS Legacy	19th Century (1800 - 1899), 20th Century: 1st half (1900 - 1949)	-	Restricted: No release
44AX0221	-	DSS Legacy, Industry/Processing/Extraction	Prehistoric/Unknown (15000 B.C. - 1606 A.D.), 18th Century (1700 - 1799), 19th Century (1800 - 1899), 20th Century: 1st quarter (1900 - 1924)	-	Restricted: No release
44AX0207	Campsite No. 1 of American Wagon Train Sept. 1781	Military/Defense	Colony to Nation (1751 - 1789), Early National Period (1790 - 1829)	-	Restricted: No release
44AX0220	-	DSS Legacy, Industry/Processing/Extraction	Prehistoric/Unknown (15000 B.C. - 1606 A.D.), 18th Century (1700 -	-	Restricted: No release

		1799), 19th Century (1800 - 1899), 20th Century: 1st quarter (1900 - 1924)

☐ The following known historic resources are located in the vicinity of the property (potential for effects to these resources from future development):

NOTE:

1) *The information above is for planning purposes only. In most cases, the property has not been surveyed for historic resources. Undiscovered historic resources may be located on the subject property or adjacent properties and this supplemental information is not intended to satisfy the Corps' requirements under Section 106 of the National Historic Preservation Act (NHPA).*
2) *Prospective permittees should be aware that Section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.*

2. A search of the data supplied by the U.S. Fish & Wildlife Service, the Virginia Department of Conservation and Recreation and the Virginia Department of Game and Inland Fisheries revealed the following:

☐ No known populations of threatened or endangered species are located on or within the vicinity of the subject property.

☐ The following federally-listed species may occur within the vicinity of the subject property.

☒ The following state-listed (or other) species may occur within the vicinity of the subject property:

VDGIF Anadromous Fish Use Waters

Unique ID	Upstream Boundary	Status	Stream Name	Confirmed Species
C25	approx. 500 m upstr. of Arlington Ridge Rd	confirmed	Fourmile run	STB/YEP

Please note this information is being provided to you based on the preliminary data you submitted to the Corps relative to project boundaries and project plans. Consequently, these findings and recommendations are subject to change if the project scope changes or new information becomes available and the accuracy of the data.

IPaC **U.S. Fish & Wildlife Service**

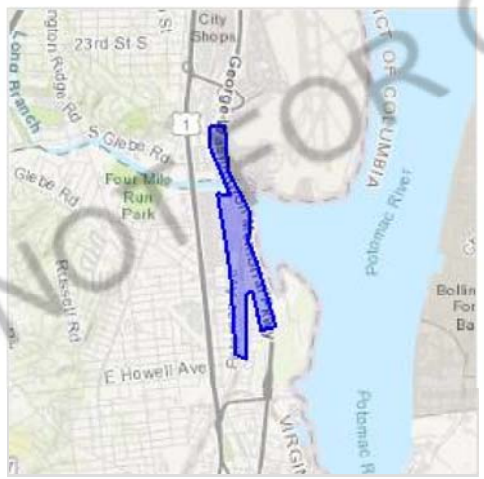
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Alexandria and Arlington counties, Virginia



Local office

Virginia Ecological Services Field Office

(804) 693-6694
(804) 693-9032

6669 Short Lane
Gloucester, VA 23061-4410

http://www.fws.gov/northeast/virginiafield/

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

[1] are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.

THERE ARE NO ENDANGERED SPECIES EXPECTED TO OCCUR AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

[1] and the Bald and Golden Eagle Protection Act[2].

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service

[3]. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are USFWS Birds of Conservation Concern that might be affected by activities in this location. The list does not contain every bird you may find in this location, nor is it guaranteed that all of the birds on the list will be found on or near this location. To get a better idea of the specific locations where certain species have been reported and their level of occurrence, please refer to resources such as the E-bird data mapping tool (year-round bird sightings by birders and the general public) and Breeding Bird Survey (relative abundance maps for breeding birds). Although it is important to try to avoid and minimize impacts to all birds, special attention should be given to the birds on the list below. To get a list of all birds potentially present in your project area, visit the E-bird Explore Data Tool.

NAME	BREEDING SEASON
Black-billed Cuckoo Coccyzus erythropthalmus https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink Dolichonyx oryzivorus	Breeds May 20 to Jul 31
Canada Warbler Wilsonia canadensis	Breeds May 20 to Aug 10
Cerulean Warbler Dendroica cerulea https://ecos.fws.gov/ecp/species/2974	Breeds Aug 20 to Jul 20

Dunlin Calidris alpina arcticola	Breeds elsewhere
Golden-winged Warbler Vermivora chrysoptera https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Hudsonian Godwit Limosa haemastica	Breeds elsewhere
Kentucky Warbler Oporornis formosus	Breeds Apr 20 to Aug 20
Least Tern Sterna antillarum	Breeds Apr 20 to Sep 10
Lesser Yellowlegs Tringa flavipes https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Prairie Warbler Dendroica discolor	Breeds May 1 to Jul 31
Prothonotary Warbler Protonotaria citrea	Breeds Apr 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus	Breeds May 10 to Sep 10
Red-throated Loon Gavia stellata	Breeds elsewhere
Rusty Blackbird Euphagus carolinus	Breeds elsewhere
Semipalmated Sandpiper Calidris pusilla	Breeds elsewhere
Short-billed Dowitcher Limnodromus griseus https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Wood Thrush Hylocichla mustelina	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

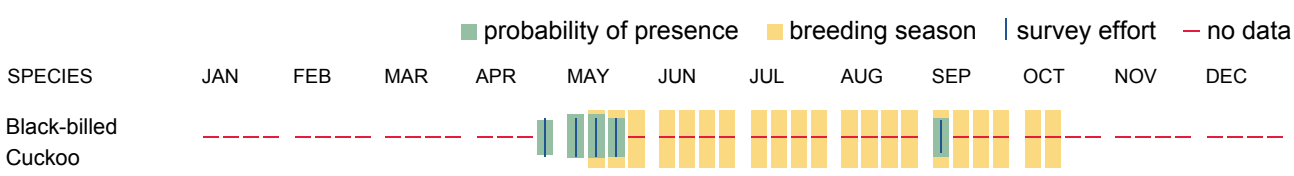
Breeding Season (▪)
Yellow bars denote when the bird breeds in the Bird Conservation Region(s) in which your project lies. If there are no yellow bars shown for a bird, it does not breed in your project area.

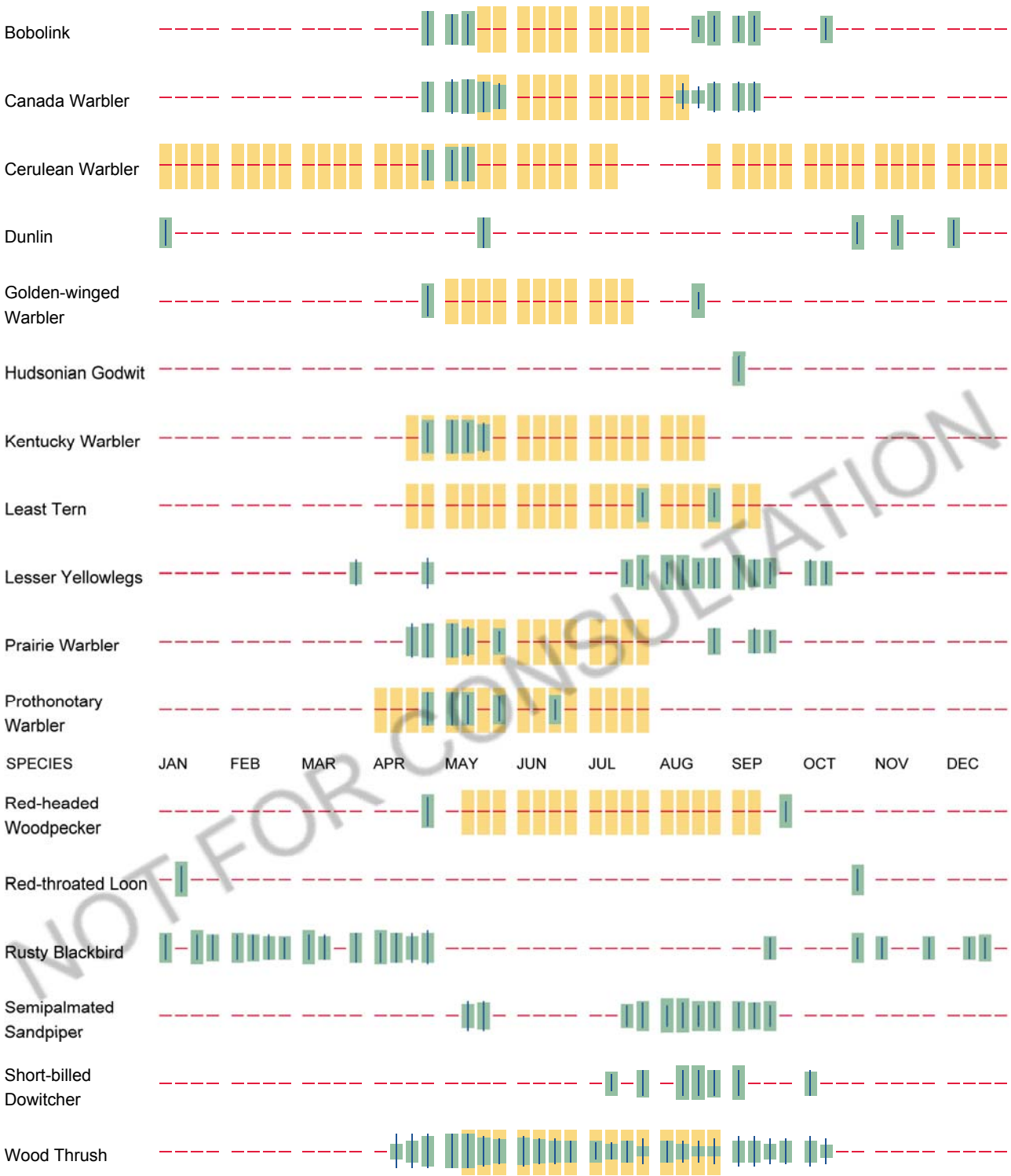
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Such measures are particularly important when birds are most likely to occur in the project area. To see when birds are most likely to occur in your project area, view the Probability of Presence Summary. Special attention should be made to look for nests and avoid nest destruction during the breeding season. The

best information about when birds are breeding can be found in Birds of North America (BNA) Online under the "Breeding Phenology" section of each species profile. Note that accessing this information may require a subscription. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) that might be affected by activities in your project location. These birds are of priority concern because it has been determined that without additional conservation actions, they are likely to become candidates for listing under the Endangered Species Act (ESA).

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets. The AKN list represents all birds reported to be occurring at some level throughout the year in the counties in which your project lies. That list is then narrowed to only the Birds of Conservation Concern for your project area.

Again, the Migratory Bird Resource list only includes species of particular priority concern, and is not representative of all birds that may occur in your project area. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird entry on your migratory bird species list indicates a breeding season, it is probable the bird breeds in your project's counties at some point within the time-frame specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Facilities

Wildlife refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGES AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND
- PEM1/FO1Eh
- PEM1Eh
- PEM1C

FRESHWATER FORESTED/SHRUB WETLAND
- PFO1Eh
- PFO1R

FRESHWATER POND
- PUBHx

RIVERINE
- R1UBV

A full description for each wetland code can be found at the National Wetlands Inventory website: https://ecos.fws.gov/ipac/wetlands/decoder

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX F. USACE CORRESPONDENCE

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1096

Reply to Attention of

May 19, 2015

Northern Virginia Regulatory Section
NAO 2012-02012 (Potomac River)

Ms. Melissa Barlow
Environmental Protection Specialist
Federal Transit Administration
1990 K Street NW, Suite 510
Washington, DC 20006-1178

Ms. Lee Farmer, AICP
Potomac Yard Projects Manager
City of Alexandria
301 King Street
Alexandria, VA 22314

Dear Ms. Barlow and Ms. Farmer:

This letter is in response to recent April 2015 Draft Environmental Impact Statement and Draft Section 4(f) Evaluation for the proposed Potomac Yard Metrorail station. The Washington Metropolitan Area Transit Authority (WMATA) is evaluating construction for the Potomac Yard Metrorail station adjacent to Mount Vernon Memorial Highway and George Washington Parkway in Alexandria, Virginia. In accordance with the National Environmental Policy Act (NEPA), an Environmental Impact Statement (EIS) is being prepared with the Federal Transit Administration (FTA) as the lead federal agency to include WMATA and the National Park Service serving as cooperating agencies. Comments are being solicited regarding the scope of the project.

On May 14, 2015, Regena Bronson of the Corps met with Mr. James Ashe to discuss the potential alternative for the proposed Metrorail station. As discussed, our regulations require that we consider a full range of public interest factors and conduct an alternatives analysis in order to identify the least environmentally damaging practicable alternative (LEDPA), which is the only alternative we can authorize. Avoidance and minimization of impacts to aquatic resources will be an important consideration in our evaluation of the alternatives.

In addition, this project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966.

According to 36 CFR 800.2(a)(2):

"…If more than one Federal agency is involved in an undertaking, some or all [of] the agencies may designate a lead Federal agency, which shall identify the appropriate official to serve as the agency official who shall act on their behalf, fulfilling their collective responsibilities under section 106. Those Federal agencies that do not designate a lead Federal agency remain individually responsible for their compliance with this part."

Pursuant to the above provision, the FTA (Virginia Division) is hereby designated as the lead federal agency to fulfill the collective Federal responsibilities under Section 106 for the following undertaking, which FTA has determined will have an adverse effect on historic resources:

Mount Vernon Memorial Highway and the George Washington Parkway in Alexandria, Virginia

The Corps authorizes FHWA to conduct Section 106 coordination on its behalf. Any Memorandum of Agreement prepared by FHWA under 36 CFR 800.6 should include the following clause in the introductory text:

"WHEREAS, pursuant to Section 404 of the Clean Water Act, a Department of the Army permit will likely be required from the Corps of Engineers for this project, and the Corps has designated FTA as the lead federal agency to fulfill federal responsibilities under Section 106; and

In addition, the Corps hereby authorizes FTA to conduct coordination on its behalf for the Potomac Yard Metrorail Station project in accordance with Section 7 of the Endangered Species Act.

Should you have any questions, you may contact Regena Bronson at 540-548-2838 or regena.d.bronson@usace.army.mil.

Sincerely,

Tucker Smith
Chief, Northern Virginia
Regulatory Section

Copies Furnished:
Virginia Department of Historic Resources, Richmond
National Park Service, McLean

Barlow, Melissa (FTA)

From: Crockett-Augustine, Theresita M NAO [Theresita.M.Crockett-Augustine@usace.army.mil]
Sent: Tuesday, March 15, 2011 5:00 PM
To: Barlow, Melissa (FTA)
Subject: RE: Potomac Yard Infill Station - City of Alexandria - EIS (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi Melissa,

The Corps is interested in being a participating agency. The extent of our participation will depend on the amount of jurisdictional wetlands and/or waters that are impacted by the proposed project. A wetland delineation will be required to determine if there are any wetlands and/or jurisdictional waters, and then the amount if any that will be impacted by the proposed project. If you have any other questions, please email or call me. Thank you.

Terri

Theresita Crockett-Augustine
Environmental Scientist
Norfolk District Corps of Engineers
Northern Virginia Field Office
703-221-9736

-----Original Message-----
From: melissa.barlow@dot.gov [mailto:melissa.barlow@dot.gov]
Sent: Wednesday, March 09, 2011 12:33 PM
To: Crockett-Augustine, Theresita M NAO
Cc: katie.grasty@dot.gov
Subject: RE: Potomac Yard Infill Station - City of Alexandria - EIS
(UNCLASSIFIED)

Thanks Terri,

We look forward to hearing from you.

Melissa P. Barlow
Community Planner
Federal Transit Administration I DC Metro 1990 K Street, NW I Suite 510 Washington, DC 20006
202.219.3565 (o) I 202.219.3545 (f)
melissa.barlow@dot.gov

-----Original Message-----
From: Crockett-Augustine, Theresita M NAO [mailto:Theresita.M.Crockett-Augustine@usace.army.mil]
Sent: Wednesday, March 09, 2011 12:29 PM
To: Barlow, Melissa (FTA)
Subject: RE: Potomac Yard Infill Station - City of Alexandria - EIS (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hi Melissa,

Thank for continuing to include me in your correspondence. I will get back to you by the end of this week with an answer of how the Corps will proceed. I need to discuss this with my supervisor and he is out of town until tomorrow.
I am sorry for the delay. Thank you.

Terri

Theresita Crockett-Augustine
Environmental Scientist
Norfolk District Corps of Engineers
Northern Virginia Field Office
703-221-9736

-----Original Message-----
From: melissa.barlow@dot.gov [mailto:melissa.barlow@dot.gov]
Sent: Thursday, March 03, 2011 1:17 PM
To: Crockett-Augustine, Theresita M NAO
Cc: katie.grasty@dot.gov
Subject: Potomac Yard Infill Station - City of Alexandria - EIS

Hi Theresita,

Hope you are well. As you may know, we held agency and public scoping meetings on the subject project on February 10th. The meetings went well and we had good participation. I am attaching the 3 transcripts for your convenience, and in case you are short on time (like me!) a one-page summary of comments received to date. I thought I would share that there were several folks who were concerned with protecting the wetlands in the general area, from construction directly in, but also from construction nearby from runoff. The project has a website up and running with lots of materials

available for you to see at http://potomacyardmetro.com/. We are still taking comments until 3/15 by the way. We will move forward with screening all the alternatives later over the next several months.

Prior to these meetings, we sent out a letter to stakeholders asking if they wanted to have a role in the EIS effort. We presumed USACE would reconfirm their desire to be a participating agency and formalize what we heard from you last year, but I haven't received anything. Please let me know by response to this email if that is correct.

I left you a brief voice mail also but wanted to follow up. I look forward to hearing from you. Take care.

Melissa P. Barlow

Community Planner

Federal Transit Administration I DC Metro

1990 K Street, NW I Suite 510
Washington, DC 20006

202.219.3565 (o) I 202.219.3545 (f)

melissa.barlow@dot.gov <mailto:melissa.barlow@dot.gov>

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

APPENDIX G. FEMA MAP

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 18. The **horizontal datum** was NAD 83, GRS 80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282

To obtain current elevation, description, and/or location information about the **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit their website at www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format. Streamline files, road centerline and political boundary files were provided by the City of Alexandria. Digital aerial photography tiles, published in 2004, were also provided by the City of Alexandria. Adjustments were made to specific base map features to align them to 1"=100' digital aerial photography

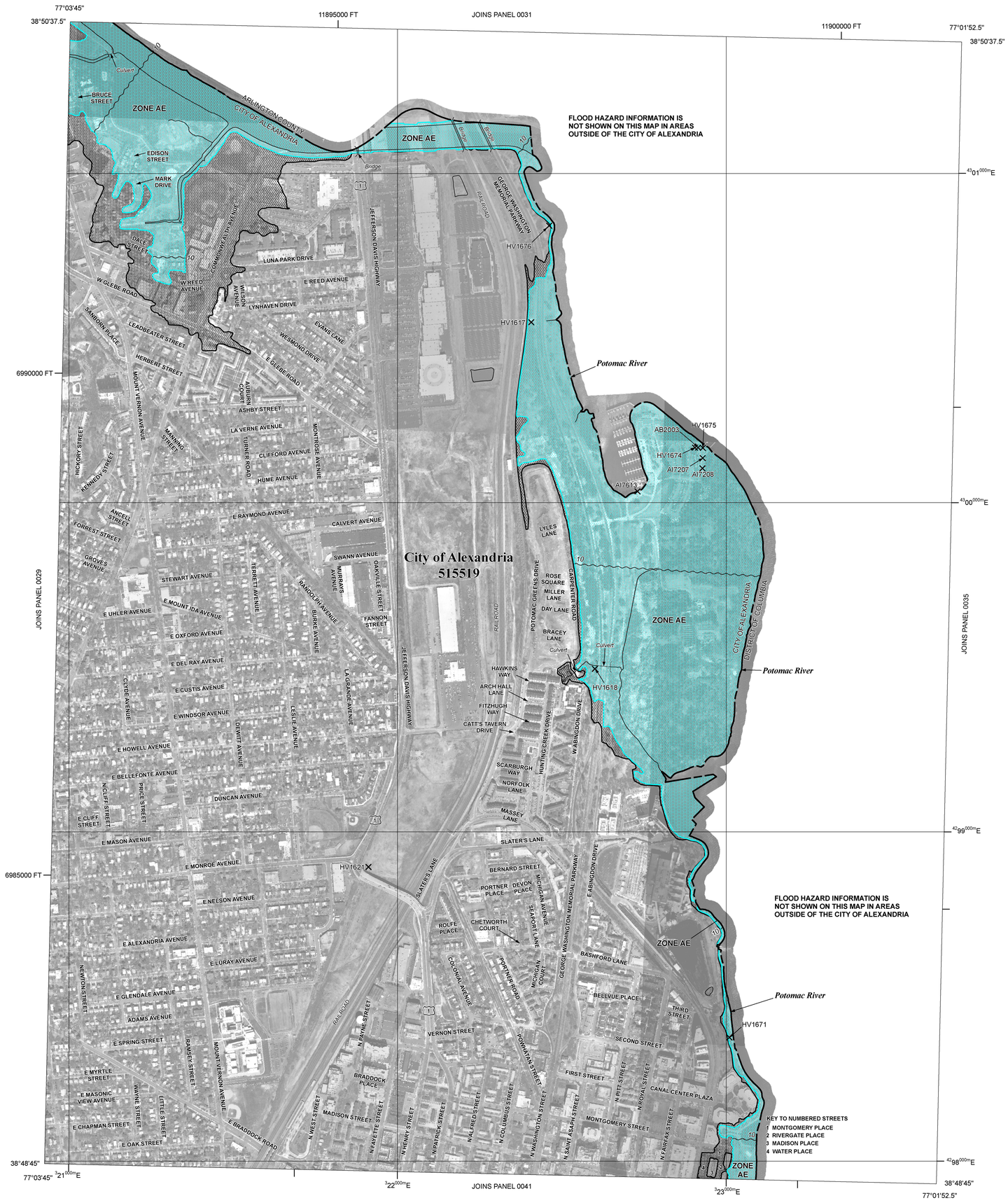
Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the *Flood Insurance Study* report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map showing the layout of map panels for this jurisdiction.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange (FMIX) at **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.business/nfip.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAS)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% annual chance floodplain boundary
	0.2% annual chance floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
23 — 23	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4276000mE	1000-meter Universal Transverse Mercator grid values, zone 18
600000 FT	5000-foot grid ticks: Virginia State Plane coordinate system (FIPSZONE 4501), Lambert Conformal Conic projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORY
City Hall. 301 King Street. Alexandria, VA 22314 (Maps available for reference only, not for distribution).

INITIAL IDENTIFICATION
AUGUST 22, 1969

FLOOD HAZARD BOUNDARY MAP REVISIONS
NONE

FLOOD INSURANCE RATE MAP EFFECTIVE
AUGUST 22, 1969

FLOOD INSURANCE RATE MAP REVISIONS
May 2, 1970 - to add special flood hazard area.
May 28, 1971 - to add special flood hazard area.
July 1, 1974 - to change zone designations.
October 22, 1976 - to reflect curvilinear flood boundary and to add special flood hazard area.
April 30, 1982 - to change special flood hazard area, to change base flood elevations, to change zone designations, to add streets, to re-align streams, to convert to 2-fold format, and to change to FEMA title block.
October 18, 1988 - to change base flood elevations, and to change special flood hazard areas.
May 15, 1991 - to update corporate limits, to change base flood elevations, to add base flood elevations, to add special flood hazard areas, to change special flood hazard areas, to update map format, and to add roads and road names.
June 16, 2011 - To change base flood elevations, to add base flood elevations, to add special flood hazard areas, and to reflect updated topographic information.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0033E

FIRM
FLOOD INSURANCE RATE MAP

CITY OF ALEXANDRIA, VIRGINIA
INDEPENDENT CITY

PANEL 33 OF 45
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ALEXANDRIA, CITY OF (INDEPENDENT CITY)	515519	0033	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
5155190033E

MAP REVISED
JUNE 16, 2011

Federal Emergency Management Agency

APPENDIX H. THREATENED AND ENDANGERED SPECIES DATABASE UPDATE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694 Fax: (804) 693-9032
http://www.fws.gov/northeast/virginiafield/

In Reply Refer To: August 18, 2017
Consultation Code: 05E2VA00-2017-SLI-3339
Event Code: 05E2VA00-2017-E-10118
Project Name: Potomac Yard Metrorail Station

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to

utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
(804) 693-6694

Project Summary

Consultation Code: 05E2VA00-2017-SLI-3339

Event Code: 05E2VA00-2017-E-10118

Project Name: Potomac Yard Metrorail Station

Project Type: DEVELOPMENT

Project Description: New Metro Station and modifications to existing Metro lines

Project Location:

Approximate location of the project can be viewed in Google Maps:
https://www.google.com/maps/place/38.83410782592421N77.0467364745944W

Counties: Alexandria, VA

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Critical habitats

There are no critical habitats within your project area under this office's jurisdiction.

USFWS National Wildlife Refuges And Fish Hatcheries

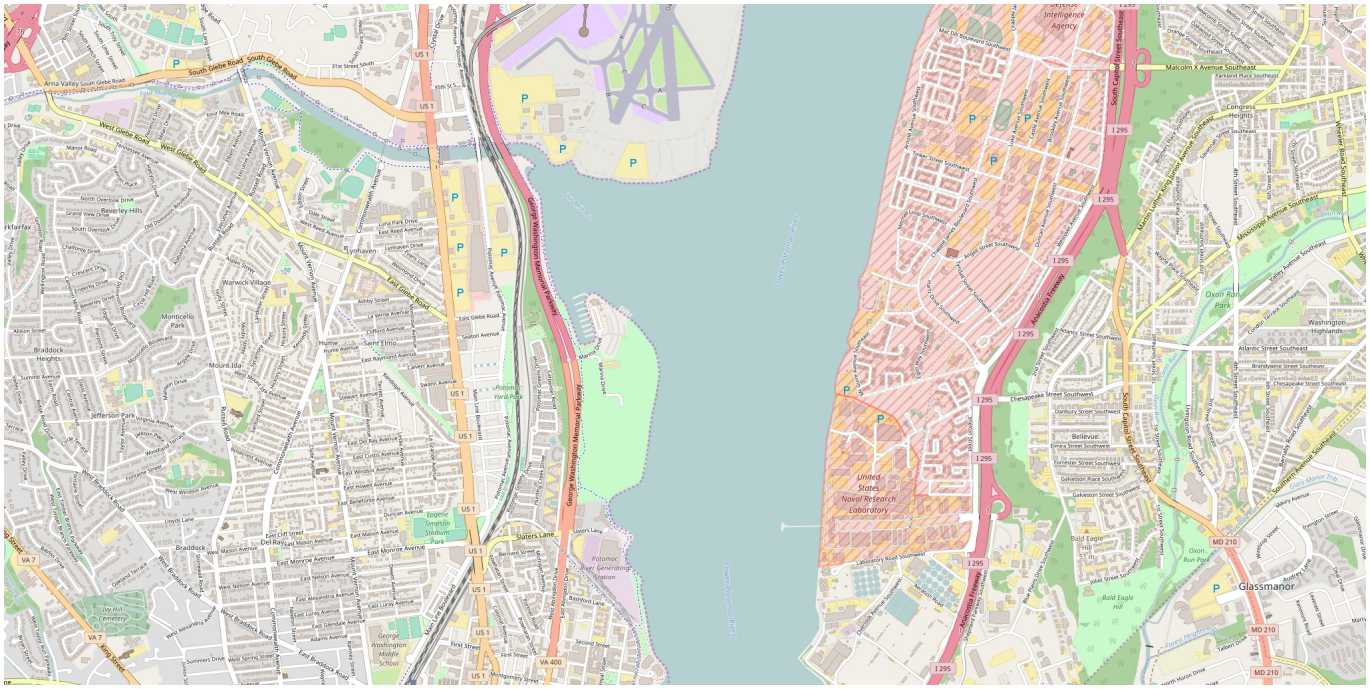
Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuges or fish hatcheries within your project area.


Potomac Ave
CSX Railroad
George Washington Memorial Pkwy
VIRGINIA
28 ft
Seaton Ave
Maskell St
Raymond Ave
Calvert Ave
Montrose Ave
Wesmond Dr
Evans Ln
Crystal City-Potomac Yard Transitway
Main Line Blvd
Potomac Greens Dr
Carpenter Rd
90005
Marina Dr
DISTRICT OF COLUMBIA
W Abingdon Dr
Parking Lot
La Grande Ave
Duncan Ave
Smith St SW
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community


Parking Lot
Potomac Yard Shopping Center
Potomac Ave
Seaton Ave
28 ft.
VIRGINIA
1
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

CCB Mapping Portal



Layers: VA Eagle Nest Locator

Map Center [longitude, latitude]: [-77.0361328125, 38.83014687431125]

Map Link:
http://www.ccbbirds.org/maps/#layer=VA+Eagle+Nest+Locator&zoom=15&lat=38.83014687431125&lng=-77.0361328125&legend=legend_tab_7c321b7e-e523-11e4-aaa0-0e0c41326911&base=Street+Map+%28OSM%29

Report Generated On: 08/18/2017

VaFWIS Search Report Compiled on 8/18/2017, 10:34:52 AM

Help

Known or likely to occur within a **2 mile radius around point 38,50,05.0 -77,02,47.7** in **013 Arlington County, 510 Alexandria City, VA**

View Map of Site Location

583 Known or Likely Species ordered by Status Concern for Conservation (displaying first 24) (24 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus		BOVA
050022	FTST	Ia	Bat, northern long-eared	Myotis septentrionalis		BOVA
050020	SE	Ia	Bat, little brown	Myotis lucifugus lucifugus		BOVA,HU6
050027	SE	Ia	Bat, tri-colored	Perimyotis subflavus		BOVA
060006	SE	Ib	Floater, brook	Alasmidonta varicosa		BOVA
030062	ST	Ia	Turtle, wood	Glyptemys insculpta		BOVA,HU6
040293	ST	Ia	Shrike, loggerhead	Lanius ludovicianus		BOVA
100155	ST	Ia	Skipper, Appalachian grizzled	Pyrgus wyandot		BOVA,HU6
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
030063	CC	IIIa	Turtle, spotted	Clemmys guttata	Yes	BOVA,SppObs,HU6
030012	CC	IVa	Rattlesnake, timber	Crotalus horridus		BOVA
040040		Ia	Ibis, glossy	Plegadis falcinellus		HU6
100248		Ia	Fritillary, regal	Speyeria idalia idalia		BOVA,HU6
040213		Ic	Owl, northern saw-whet	Aegolius acadicus		HU6
040052		IIa	Duck, American black	Anas rubripes	Potential	BOVA,BBA,HU6
040036		IIa	Night-heron, yellow-crowned	Nyctanassa violacea violacea		BOVA
040181		IIa	Tern, common	Sterna hirundo		BOVA,HU6
040320		IIa	Warbler, cerulean	Setophaga cerulea		BOVA,HU6
040140		IIa	Woodcock, American	Scolopax minor		BOVA,HU6
040203		IIb	Cuckoo, black-billed	Coccyzus erythropthalmus		BOVA
040105		IIb	Rail, king	Rallus elegans	Potential	BOVA,Habitat,HU6
040304		IIc	Warbler, Swainson's	Limnothlypis swainsonii		HU6
070020		IIc	Amphipod, Pizzini's	Stygobromus pizzinii		HU6

100154		IIc	Butterfly, Persius duskywing	Erynnis persius persius		BOVA,HU6

To view **All 583 species** View 583

*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; CC=Collection Concern

**I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need
Virginia Widlife Action Plan Conservation Opportunity Ranking:
a - On the ground management strategies/actions exist and can be feasibly implemented.;
b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;
c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

View Map of All Query Results from All Observation Tables

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams (2 records)

View Map of All Anadromous Fish Use Streams

Stream ID	Stream Name	Reach Status	Anadromous Fish Species			View Map
			Different Species	Highest TE*	Highest Tier**	
C25	Fourmile run	Confirmed	2			Yes
C64	Potomac river	Confirmed	6		IV	Yes

Impediments to Fish Passage

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Species Observations

(56 records - displaying first 20 , 1 Observation with Threatened or Endangered species)

View Map of All Query Results
Species Observations

obsID	class	Date Observed	Observer	N Species			View Map
				Different Species	Highest TE*	Highest Tier**	
365017	SppObs	Jan 1 1900		3	SS	III	Yes
623248	SppObs	Oct 7 2014	Richard; Browder| Gabriel; Darkwah| Meghan; Bandura| Ken	9		III	Yes
305871	SppObs	May 19 2004	Mike Mangold (Principle Permittee), U. S. F. W. S	4		III	Yes
307634	SppObs	May 19 2004	Mike Mangold (Principle Permittee), U. S. F. W. S	4		III	Yes
301157	SppObs	May 29 2003	Mike Mangold (Principle Permittee), U. S. F. W. S	13		III	Yes
16433	SppObs	Aug 22 1978	VIMS-B-194	10		III	Yes
336463	SppObs	Jan 1 1978	VIMS-B-VA. INST. MARINE SCI.	11		III	Yes
614202	SppObs	Jul 5 2011	Nico; Dauphine	1		IV	Yes
614201	SppObs	Jun 25 2011	Nico; Dauphine	1		IV	Yes
614200	SppObs	Jun 10 2011	Nico; Dauphine	1		IV	Yes
614199	SppObs	Jun 1 2011	Nico; Dauphine	1		IV	Yes
614197	SppObs	May 25 2011	Nico; Dauphine	1		IV	Yes
301189	SppObs	Oct 14 2003	Mike Mangold (Principle Permittee), U. S. F. W. S	11		IV	Yes
301176	SppObs	Aug 13 2003	Mike Mangold (Principle Permittee), U. S. F. W. S	12		IV	Yes
301169	SppObs	Jul 15 2003	Mike Mangold (Principle Permittee), U. S. F. W. S	13		IV	Yes
301144	SppObs	May 1 2003	Mike Mangold (Principle Permittee), U. S. F. W. S	12		IV	Yes

16432	SppObs	Aug 22 1978	VIMS-B-193	7		IV	Yes
16434	SppObs	Aug 22 1978	VIMS-B-195	9		IV	Yes
336462	SppObs	Jan 1 1978	VIMS-B-VA. INST. MARINE SCI.	8		IV	Yes
336464	SppObs	Jan 1 1978	VIMS-B-VA. INST. MARINE SCI.	10		IV	Yes

Displayed 20 Species Observations

Selected 56 Observations View all 56 Species Observations

Habitat Predicted for Aquatic WAP Tier I & II Species

N/A

Habitat Predicted for Terrestrial WAP Tier I & II Species (2 Species)

View Map of Combined Terrestrial Habitat Predicted for 2 WAP Tier I & II Species Listed Below

ordered by Status Concern for Conservation

BOVA Code	Status*	Tier**	Common Name	Scientific Name	View Map
040105		IIb	Rail, king	Rallus elegans	Yes
040038			Bittern, American	Botaurus lentiginosus	Yes

Virginia Breeding Bird Atlas Blocks (4 records)

View Map of All Query Results
Virginia Breeding Bird Atlas Blocks

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map
		Different Species	Highest TE*	Highest Tier**	
54194	Alexandria, CE	49		II	Yes
54193	Alexandria, CW	27		IV	Yes
54192	Alexandria, NE	32		II	Yes
54191	Alexandria, NW	58		III	Yes

Public Holdings: (1 names)

Name	Agency	Level
George Washington Memorial National Parkway	National Park Service	Federal

Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier
013	Arlington	458	FESE	I
510	Alexandria City	475	FESE	I

USGS 7.5' Quadrangles:
Alexandria

USGS NRCS Watersheds in Virginia:

N/A

USGS National 6th Order Watersheds Summary of Wildlife Action Plan Tier I, II, III, and IV Species:

HU6 Code	USGS 6th Order Hydrologic Unit	Different Species	Highest TE	Highest Tier
PL24	Potomac River-Pimmit Run	68	SE	I
PL25	Potomac River-Fourmile Run	67	ST	I
PL26	Cameron Run	69	ST	I
PL28	Potomac River-Little Hunting Creek	71	ST	I

Compiled on 8/18/2017, 10:34:52 AM I852377.0 report=all searchType= R dist= 3218.688 poi= 38,50,05.0 -77,02,47.7

PixelSize=64; Anadromous=0.024909; BBA=0.048998; BECAR=0.013685; Bats=0.01009; Buffer=0.100863; County=0.086806; HU6=0.067993; Impediments=0.014165; Init=0.151044; PublicLands=0.03267; Quad=0.032518; SppObs=0.264951; TEWaters=0.019524; TierReaches=0.025581; TierTerrestrial=0.042571; Total=1.518929; Tracking_BOVA=0.584355; Trout=0.015452; huva=0.025698

APPENDIX I. HISTORIC RESOURCE DATABASE UPDATE

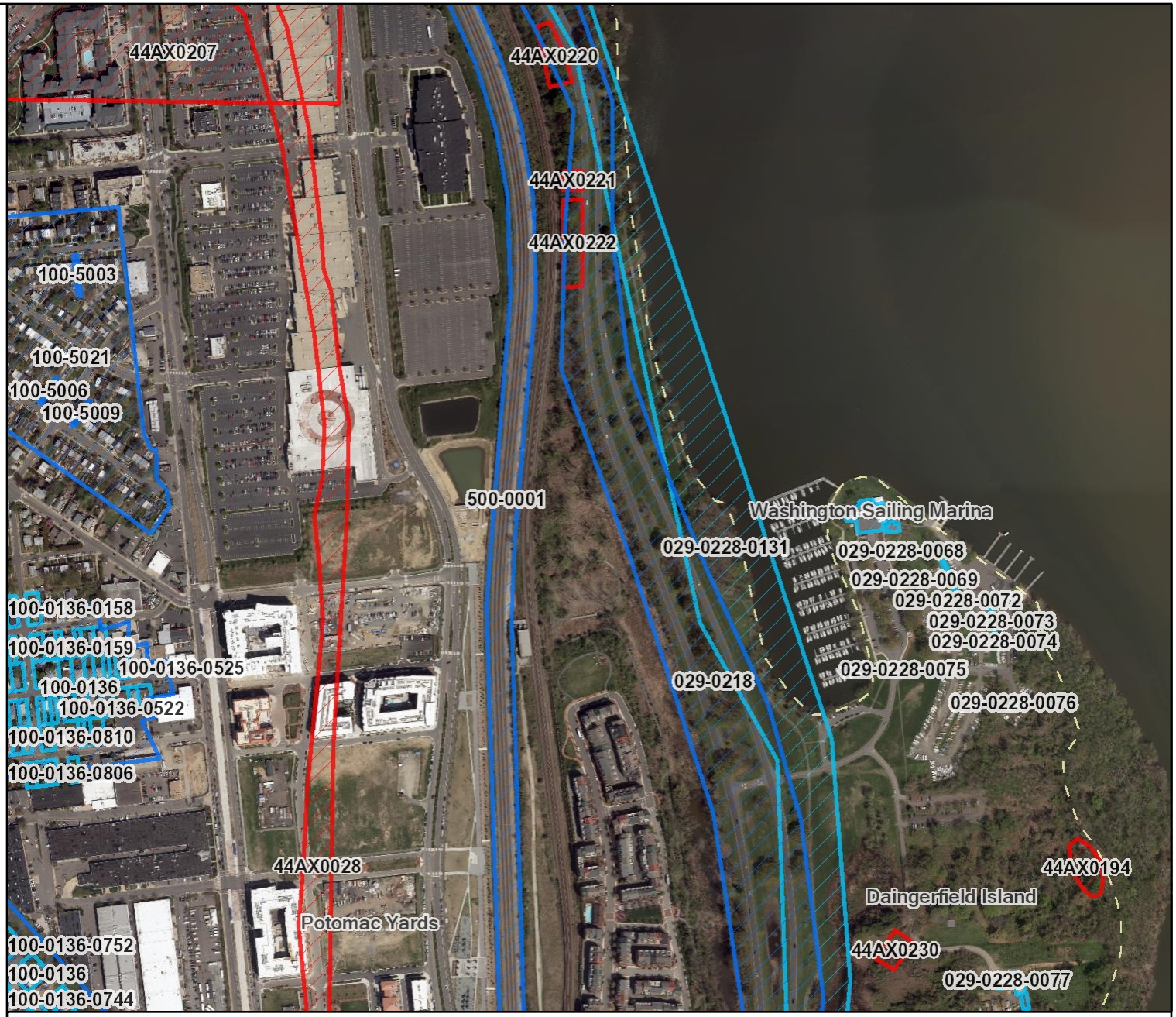
Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

Legend

- Architecture Resources
- Architecture Labels
- Individual Historic District Properties
- Archaeological Resources
- Archaeology Labels
- USGS GIS Place names
- County Boundaries



N

Feet

0 200 400 600 800

1:9,028 / 1"=752 Feet

Title:

Date: 6/2/2017

DISCLAIMER:Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions.The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Notice if AE sites:Locations of archaeological sites may be sensitive the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.

Property Information

Property Names

Name Explanation	Name
Historic	Richmond, Fredericksburg and Potomac Railroad Historic District

Property Addresses

Current - CSX Tracks

Property Evaluation Status

Not Evaluated

This Property is associated with the Richmond, Fredericksburg and Potomac Railroad.

County/Independent City(s): Alexandria (Ind. City), Arlington (County), Caroline (County), Fairfax (County), Fredericksburg (Ind. City), Hanover (County), Henrico (County), Prince William (County), Richmond (Ind. City), Spotsylvania (County), Stafford (County)

Incorporated Town(s): Arlington, Ashland, Dumbarton, Falmouth, Franconia, Glen Allen, Lakeside, Laurel, Lorton, Newington, Quantico, Quantico Station, Rose Hill, Springfield, Woodbridge

Zip Code(s): 22026, 22079, 22134, 22150, 22172, 22191, 22202, 22301, 22304, 22310, 22314, 22315, 22401, 22405, 22408, 22427, 22514, 22546, 22554, 22580, 23005, 23047, 23059, 23060, 23220, 23228, 23230

Magisterial District(s): *No Data*

Tax Parcel(s): *No Data*

USGS Quad(s): ALEXANDRIA, ANNANDALE, ASHLAND, BON AIR, BOWLING GREEN, FORT BELVOIR, FREDERICKSBURG, GLEN ALLEN, GUINEA, OCCOQUAN, PENOLA, QUANTICO, RICHMOND, RUTHER GLEN, STAFFORD, WIDEWATER, WOODFORD, YELLOW TAVERN

Additional Property Information

Architecture Setting: Suburban

Acreage: *No Data*

Site Description:

June 2016: The resource within the project APE, runs along the CSX right-of-way in eastern Virginia from the Potomac River in Arlington County south to the Broad Street Station in the City of Richmond. The railroad runs through rural, suburban and urban settings with varied styled culverts, bridges, stations, and other rail-related resources within its boundaries. Two previously DHR ID# were associated with the rail line: 088-5413 is associated with the segment in Caroline, Hanover, Henrico and Spotsylvania Counties and 076-0301 is associated with the segment in Prince William and Stafford Counties.

Surveyor Assessment:

June 2016: Within the project area, the northern end of the RF&P Railroad runs from the Potomac River to the Broad Street Station in the City of Richmond. Upon survey, the corridor continues to convey its association with transportation ca. 1837 to 1943 when the demand for rail line transportation began to diminish (Griffin 1984). It is recommended that the rail line retain its determination to be potentially eligible for NRHP listing under Criterion A. The rail line has no known association with a significant person and since the line has undergone physical changes over the years, it is recommended that it continue to not be NRHP eligible under Criteria B and C. As an architectural resource, it was not evaluated under Criterion D.

Surveyor Recommendation: Recommended Potentially Eligible

Ownership

Ownership Category	Ownership Entity
Private	*No Data*

Primary Resource Information

Resource Category: Transportation
Resource Type: Rail-Related
Date of Construction: 1837Ca
Historic Time Period: Antebellum Period (1830 - 1860)
Historic Context(s): Transportation/Communication
Architectural Style: No discernible style
Form: *No Data*
Number of Stories: *No Data*
Condition: Fair
Interior Plan: *No Data*
Threats to Resource: Development, Transportation Expansion

Architectural Description:

June 2016: The resource is a linear railroad bed approximately 100 feet wide that spans from the southern end of Long Branch Bridge at the Potomac River in Arlington County to the southern terminus at the Broad Street Station in the City of Richmond. The line has double tracks that carry the Virginia Railway Express, Amtrak and various non-passenger rail lines north and south to the Arlington County area to Richmond. Ancillary resources like stations, towers, bridges, culverts, rail yards, branches, and spurs can be found along the rail bed. The rail line has not been significantly altered since the previous surveys undertaken for the previous segments 076-0301 in 2010 and 088-5413 in 2016.

Secondary Resource Information

Secondary Resource #1

Resource Category: *No Data*
Resource Type: *No Data*
Architectural Style: *No Data*
Form: *No Data*
Date of Construction: *No Data*
Condition: *No Data*
Threats to Resource: *No Data*

Architectural Description:

No Data

Historic District Information

Historic District Name: Richmond, Fredericksburg and Potomac Railroad
Local Historic District Name: *No Data*
Historic District Significance: June 2016: The Richmond, Fredericksburg and Potomac Railroad that falls within the project area, was previously recorded in to two segments: 088-5413 and 076-0301. For the High Speed Rail Project, the railroad's boundaries are recommended to be expanded from the Potomac River to Broad Street Union Station with a period of significance of circa-1837-1943. By World War II, the rail line saw a decline in transporting passengers and goods. Both segments were previously determined NRHP-eligible by DHR under Criterion A for Transportation.

CRM Events

Event Type: Survey:Phase I/Reconnaissance

Project Review File Number: 2014-0666
Investigator: Kristi Chase
Organization/Company: Dovetail CRG
Sponsoring Organization: *No Data*

Survey Date: 6/22/2016

Dhr Library Report Number: VA-129

Project Staff/Notes:

This project is to contain resources that fall within the Richmond, Fredericksburg and Potomac Railroad expanded boundaries. For RAPS, the rail line is being given the new DHR ID# 500-0001. Previously, the rail line that falls within the project APE was in two segments; 088-5413 and 076-0301.

Kristine A. Chase
Architectural Reconnaissance Survey of Structures for the Washington, D.C. to Richmond, Virginia High Speed Rail Project, Rosslyn to Alexandria (ROAF) through Buckingham Branch/Hospital Wye (BBHW) Segments
Dovetail Cultural Resource Group
January 2017
DHR Project No. 2014-0666
DHR Report No. VA-129

Bibliographic Information

Bibliography:

Griffin, Jr., William E.
1984One Hundred Fifty Years of History: Along the Richmond, Fredericksburg and Potomac Railroad.

Property Notes:

No Data

Project Bibliographic Information:

Architectural Reconnaissance Survey of Structures for the Washington, D.C. to Richmond, Virginia High Speed Rail Project

APPENDIX J. ADJACENT PROPERTY OWNER ADDRESSES

APPENDIX H. Adjacent Property Owner Addresses
Joint Permit Application
Potomac Yard Metrorail Station
Alexandria, VA

PID	STREET NAME	OWNER NAME	MAILING ADDRESS	CITY	STATE	ZIP
016.02-01-02	3601 Potomac Avenue	CPYR Theatre LLC c/o the Lionstone Group	99 Waugh Drive; Suite 600	Houston	TX	77007
016.02-02-01	2 George Washington Memorial Parkway	Washington Metropolitan Area Transit	600 5th Street NW	Washington	DC	20001
025.04-01-05	2403 Potomac Avenue	City of Alexandria ATTN: Joanna Anderson	300 King Street Suite 1300	Alexandria	VA	22314
025.04-01-06	2405 Potomac Avenue	City of Alexandria	PO Box 178	Alexandria	VA	22313
025.04-01-07	2901 Potomac Avenue	City of Alexandria	301 King Street	Alexandria	VA	22314
025.04-02-01	1702 Potomac Greens Drive	City of Alexandria	PO Box 178	Alexandria	VA	22313
025.04-02-141	1836 Potomac Greens Drive	Potomac Greens Homeowners Association c/o CMS Services Inc.	6394 Little River Turnpike	Alexandria	VA	22312
025.02-01-36	700 Carpenter Road	City of Alexandria	PO Box 178	Alexandria	VA	22313
025.02-01-37	1880 Potomac Greens Drive	City of Alexandria	PO Box 178	Alexandria	VA	22313
025.04-03-01	2501 Potomac Avenue	City of Alexandria	301 King Street; Room 1300	Alexandria	VA	22314
035.02-01-01	1690 Potomac Greens Drive	Old Town Greens Townhome Owners Association Inc; Board of Directors	1643 Hunting Creek Drive	Alexandria	VA	22314
035.04-02-02	1680 Potomac Greens Drive	Centex Homes ATTN: R K Davis	12149 E Monument Drive; Suite 110	Fairfax	VA	22033
035.04-06-01	1801 Potomac Avenue	City of Alexandria	301 King Street	Alexandria	VA	22314

APPENDIX K: CITY APPROVED DSUP-CONCEPTUAL WETLANDS RESTORATION (IN COORDINATION WITH NPS)

PRELIMINARY SITE PLAN SUBMISSION

POTOMAC GREENS PARK

CITY OF ALEXANDRIA, VA

STORMWATER QUALITY ARTICLE XIII REQUIREMENTS NARRATIVE AND IMPERVIOUS SURFACE CALCULATIONS

SEE SHEET SW-100, SW-101, SW-102

ZONING TABULATIONS

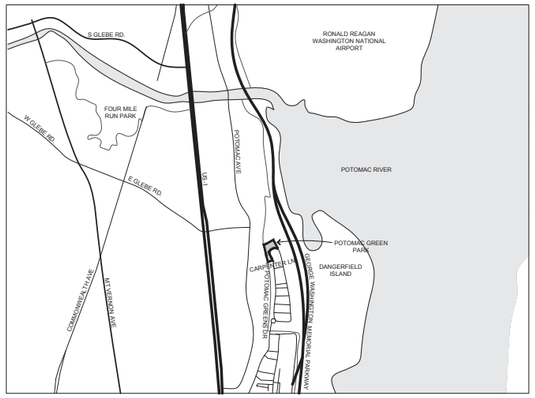
□ONING OF THE SITE:	CDD #10
EXISTING USES ON THE SITE:	PASSIVE NEIGHBORHOOD PARK
PROPOSED USES ON THE SITE:	PASSIVE NEIGHBORHOOD PARK
ORIGINAL LOT AREA:	±43,560 SQFT PARK WITHIN THE 805,195 SQFT PARCEL
NEW LOT AREA:	±92,363 SQFT
REFINED TABULATIONS	
DENSITY:	0
GROSS SQFT OF BUILDINGS:	N/A
FLOOR AREA RATIO (FAR):	N/A
BUILDING HEIGHTS:	N/A
PARKING LAYOUT:	N/A
OPEN SPACE:	±43,560 SQFT PARK WITHIN THE 805,195 SQFT PARCEL
PROPOSED PARKING:	
REQUIRED:	0
PROVIDED:	0
NUMBER OF DWELLING UNITS:	N/A
UNITS/ACRE, RESIDENTIAL:	N/A
GROSS FLOOR AREA:	N/A
NET FLOOR AREA:	N/A
OPEN SPACE:	
GROUND LEVEL:	±43,560 SQFT PARK WITHIN THE 805,195 SQFT PARCEL
ROOF TOP:	N/A
TOTAL:	±43,560 SQFT PARK WITHIN THE 805,195 SQFT PARCEL
AVERAGE FINISHED GRADE:	N/A
AVERAGE HEIGHT:	N/A
BUILDING SETBACK:	N/A

PARKING TABULATIONS

LOT FRONTAGE:	
REQUIRED:	0
PROVIDED:	0
PARKING SPACES:	
COMPACT:	0
STANDARD:	0
HANDICAP:	0
TOTAL:	0
LOADING SPACES:	
REQUIRED:	0
PROVIDED:	0
EXISTING TRIP GENERATION:	N/A
PROPOSED TRIP GENERATION:	N/A

PROJECT TABULATIONS

TOTAL PROJECT AREA:	±92,363 SQFT
TOTAL AREA OF DISTURBANCE:	±44,770 SQFT



VICINITY MAP

NTS

NARRATIVE

THIS POTOMAC GREENS PARK PLAN IS INTENDED TO PROVIDE ENHANCEMENTS TO THE EXISTING PARK AS A RESULT OF IMPACTS TO THE EXISTING PARK FROM THE PLANNED CONSTRUCTION OF THE POTOMAC YARD METRO STATION. THE LAND IS CURRENTLY □ONED CDD 10. ITS PROPOSED DEVELOPMENT IS NOT MATERIALLY DIFFERENT FROM WHAT CURRENTLY EXISTS. EXISTING SITE CONDITIONS INCLUDE AGING PLAY EQUIPMENT, AN OPEN FIELD, AND A GA□EBO WHICH WILL BE RELOCATED ON THE SITE. IN ADDITION THERE ARE SEVERAL PICNIC TABLES AND OTHER PARK FURNISHINGS.

EXISITING/PROPOSED SPECIAL USE PERMITS ZONING MODIFICATIONS/WAIVERS

1. MAJOR AMENDMENT TO AN EXISTING DEVELOPMENT SPECIAL USE PERMIT (DSUP 2002-0026)

ARCHAEOLOGY NOTES

ALL REQUIRED ARCHAEOLOGICAL PRESERVATION MEASURES SHALL BE COMPLETED PRIOR TO GROUND-DISTURBING ACTIVITIES (SUCH AS CORING, GRADING, FILLING, VEGETATION REMOVAL, UNDERGROUNDING UTILITIES, PILE DRIVING, LANDSCAPING AND OTHER EXCAVATIONS AS DEFINED IN SECTION 2-151 OF THE □ONING ORDINANCE) OR A RESOURCE MANAGEMENT PLAN MUST BE IN PLACE TO PRESERVE AND/OR RECOVER SIGNIFICANT RESOURCES IN CONCERT WITH CONSTRUCTION ACTIVITIES. TO CONFIRM, CALL ALEXANDRIA ARCHAEOLOGY AT (703) 838-4399.

CALL ALEXANDRIA ARCHAEOLOGY (703/838-4399) TWO WEEKS BEFORE THE STARTING DATE OF ANY GROUND DISTURBANCE SO THAT AN INSPECTION OR MONITORING SCHEDULE FOR CITY ARCHAEOLOGI STS CAN BE ARRANGED. (THE SUBMITTING ENGINEER MUST CONFIRM WITH ALEXANDRIA ARCHAEOLOGY AT (703) 838-4399 BEFORE INCLUDING THIS NOTE ON THE PLAN)

THE APPLICANT SHALL CALL ALEXANDRIA ARCHAEOLOGY IMMEDIATELY (703-838-4399) IF ANY BURIED STRUCTURAL REMAINS (WALL FOUNDATIONS, WELLS, PRIVIES, CISTERNS, ETC.) OR CONCENTRATIONS OF ARTIFACTS ARE DISCOVERED DURING DEVELOPMENT. WORK MUST CEASE IN THE AREA OF THE DISCOVERY UNTIL A CITY ARCHAEOLOGIST COMES TO THE SITE AND RECORDS THE FINDS.

THE APPLICANT SHALL NOT ALLOW ANY METAL DETECTION AND/OR ARTIFACT COLLECTION TO BE CONDUCTED ON THE PROPERTY, UNLESS AUTHORI□ED BY ALEXANDRIA ARCHAEOLOGY. FAILURE TO COMPLY SHALL RESULT IN PROJECT DELAYS.

SHEET INDEX

SOIL INFORMATION - MARINE CLAY

NO SOIL SURVEY OR GEOTECHNICAL REPORT HAS BEEN PERFORMED. FROM THE INFORMATION AVAILABLE THROUGH THE POTOMAC GREENS DEVELOPMENT DRAWINGS, THE PARK SOIL IS ANTICIPATED TO BE URBAN FILL.

SOIL INFORMATION - CONTAMINATION

NO SOIL SURVEY OR GEOTECHNICAL REPORT HAS BEEN PERFORMED. FROM THE INFORMATION AVAILABLE THROUGH THE POTOMAC GREENS DEVELOPMENT DRAWINGS, THERE IS A POSSIBILITY THAT THE PARK CONTAINS CONTAMINATED SOIL.

EXISITING TOPOGRAPHY NOTE

THE TOPOGRAPHY HEREIN WAS PROVIDED BY AECOM

RPA NOTE

SEE EXISTING CONDITIONS SHEET LE-001

FLOODPLAIN NOTE

PORTIONS OF THIS SITE ARE IN THE 100 YEAR FLOOPLAIN, SEE ATTACHED SHEETS

TRIP GENERATION

THE PARK USE WILL REMAIN THE SAME. TRIP GENERATION IS N/A

POTOMAC YARD URBAN DESIGN GUIDELINES APPLY

THE PARK USE WILL REMAIN THE SAME. CONNECTIONS TO AND THROUGH THE OPEN SPACE WILL BE MAINTAINED AND ENHANCED.

(2) TWO COLOR SETS OF ELEVATIONS:

N/A

COMPLETE STREETS CHECKLIST

	NEW	UPGRADED
CROSSWALKS (NUMBER)		
STANDARD	2 (EXISTING TO REMAIN)	0
HIGH VISIBILITY	0	0
CURB RAMPS	0 (EXISTING TO REMAIN)	
SIDEWALKS (LF)	144.25 LF 0 (EXISTING TO REMAIN)	
BICYCLE PARKING (NUMBER SPACES)		0
PUBLIC/VISITOR	4 (EXISTING TO REMAIN)	0
PRIVATE/GARAGE	0	0
BICYCLE PATHS (LF)	N/A	N/A
PEDESTRIAN SIGNALS	N/A	N/A

DSUP-2016-0005

APPROVED
SPECIAL USE PERMIT NO. _____
DEPARTMENT OF PLANNING & ZONING
DIRECTOR DATE
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. _____
DIRECTOR DATE
CHAIRMAN, PLANNING COMMISSION DATE
DATE RECORDED _____
INSTRUMENT NO. DEED BOOK NO. PAGE NO.

PROPERTY OWNER

THE CITY OF ALEXANDRIA
301 KING ST
ALEXANDRIA, VA 22314

LANDSCAPE ARCHITECT

ANDROPOGON ASSOCIATES
10 SHURS LANE
PHILADELPHIA, PA 19127
215.487.0700
www.andropogon.com

CIVIL ENGINEERING

PRIME AE
3201 JERMANTOWN ROAD, SUITE 660
FAIRFAX, VA 22030
703.865.0606
www.primeeng.com

STRUCTURAL ENGINEER

KEARST □ HOOD
400 MARKET STREET, SUITE 1250
PHILADELPHIA, PA 19106
215.625.0099
www.keasthood.com

IRRIGATION CONSULTING, INC.

IRRIGATION DESIGN
4 HOTEL PLACE
PEPPERELL, MA 01463
978.433.8972
www.irrigationconsulting.com

ANDROPOGON ASSOCIATES, LTD
10 SHURS LANE
PHILADELPHIA, PA 19127
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F: 215.483.7520
W: www.andropogon.com

POTOMAC GREENS PARK
THE CITY OF ALEXANDRIA
CITY HALL
301 KING STREET
ALEXANDRIA, VA 22314

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IRRIGATION CONSULTING, INC.
IRRIGATION DESIGN
4 HOTEL PLACE
PEPPERELL, MA 01463
978.433.8972
www.irrigationconsulting.com

REV.	DATE	DESCRIPTION

JOSÉ MARIA ALMIÑANA
Cert. No. 0406 000923
COMMONWEALTH OF VIRGINIA
LANDSCAPE ARCHITECT
5/19/2016

PRELIMINARY PLAN
NOT FOR CONSTRUCTION OR PRICING

SCALE:	AS INDICATED ON DRAWINGS
DATE:	05/19/2016
DRAWN BY:	BM
CHECKED BY:	EM
APPROVED BY:	EM
AA PROJECT #:	130014.01
PROJECT PHASE:	DESIGN DEVELOPMENT

DRAWING TITLE:
COVER SHEET

SHEET:
LC-000

DRAWING FILE PATH: D:\DROPBOX (ANDROPOGON-NCI)\130014.01 POTOMAC GREENS\DRAWINGS\PHASE 2\DRAWING SETS\00_POTOMAC METRO 30% DD FILES\2016-05-17 130014 30% DD AA DWG\L-LC-100-130014.DWG
DATE MODIFIED: 5/17/2016

METRORAIL STATION UPLAND BUFFER

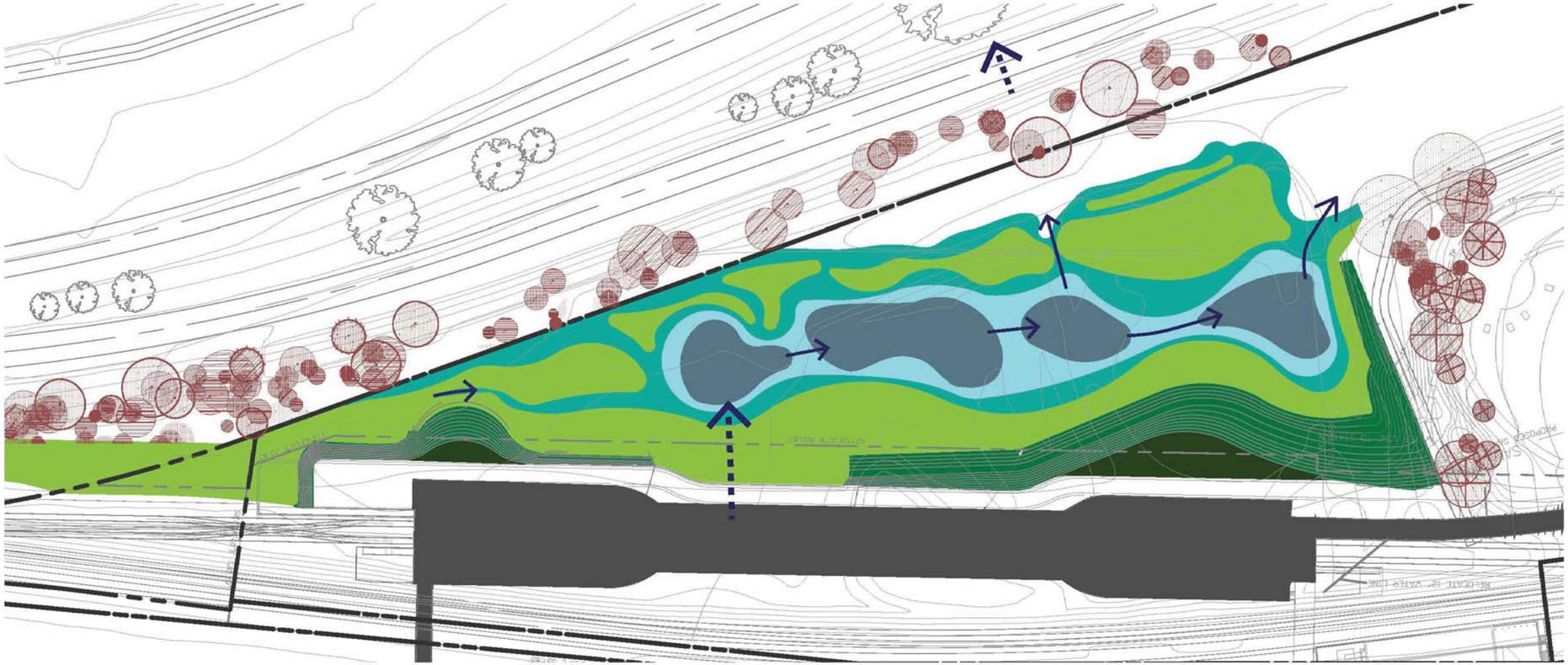
STEEP SLOPE UPLAND

PALUSTRINE FORESTED WETLAND
(PFO)(SATURATED ZONE)

TRANSITION BETWEEN PFO AND PSS
(TEMPORARILY INUNDATED ZONE)

PALUSTRINE SCRUB-SHRUB WETLAND
(PSS) (PERMANENTLY INUNDATED ZONE)

PALUSTRINE EMERGENT WETLAND
(PEM) (PERMANENTLY INUNDATED ZONE)



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DEPARTMENT OF PLANNING & ZONING

_____ _____
DIRECTOR DATE

DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. _____

_____ _____
DIRECTOR DATE

_____ _____
CHAIRMAN, PLANNING COMMISSION DATE

DATE RECORDED _____

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REV.	DATE	DESCRIPTION

JOSÉ MARIA ALMIÑANA
Cert. No. 0406-000923
COMMONWEALTH OF VIRGINIA
LANDSCAPE ARCHITECT
4/28/2016

PRELIMINARY PLAN
NOT FOR CONSTRUCTION OR PRICING

SCALE:	NTS
DATE:	5/19/2016
DRAWN BY:	EM
CHECKED BY:	BM
APPROVED BY:	EM
AA PROJECT #:	130014.01
PROJECT PHASE:	DESIGN DEVELOPMENT

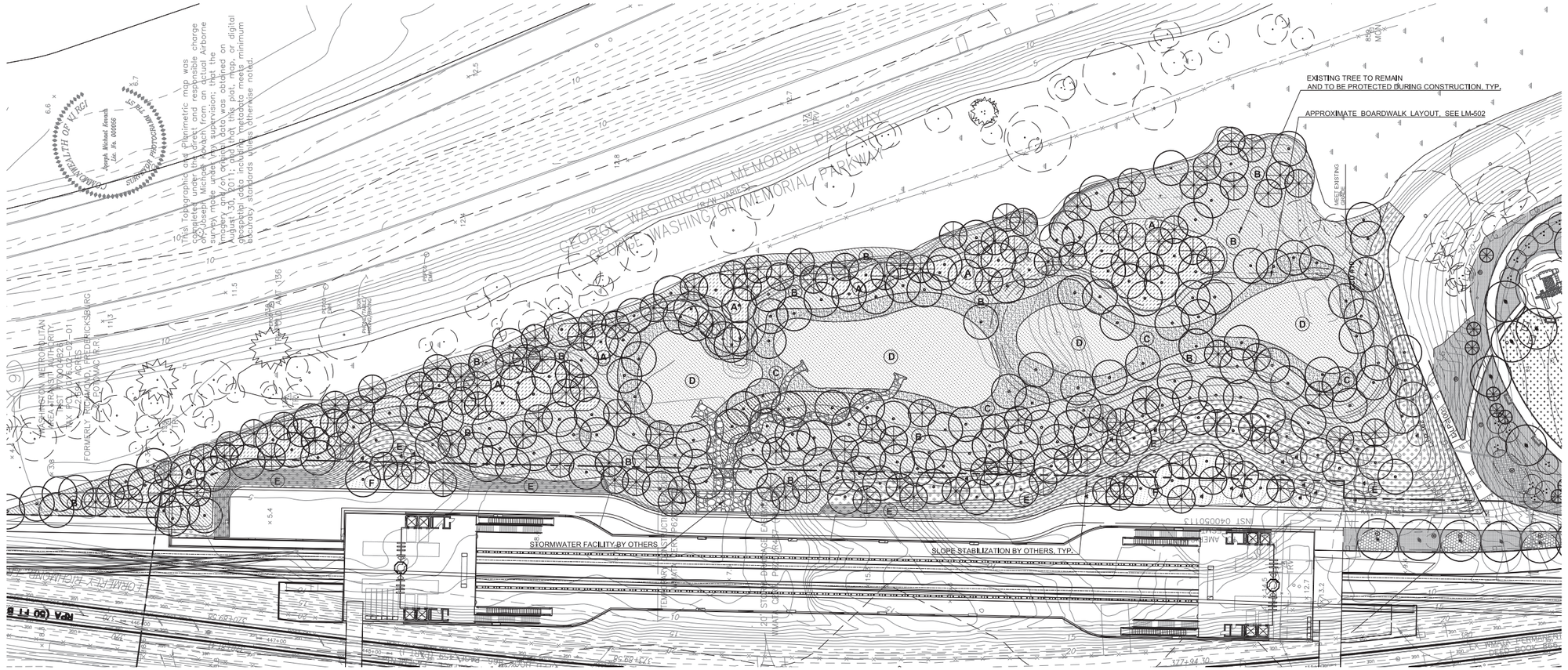
DRAWING TITLE:

WETLAND PLANTING DIAGRAM

SHEET:

LP-101

DRAWING FILE PATH: D:\DROPBOX (ANDROPOGON-NC)\130014.01 POTOMAC GREENS\DRAWINGS\PHASE 2\DRAWING SETS\PLOT\L-LP-100-130014-WETLAND.DWG
DATE MODIFIED: 5/16/2016



PLANTING NOTES

1. PROVIDE "QUALITY GRADE" PLANTS OF STRAIGHT SPECIES (NO CULTIVARS, HYBRIDS OR VARIETIES) UNLESS INDICATED OTHERWISE ON PLANT SCHEDULE.
2. TREES SHOULD BE IN THEIR NATURAL FORM AND BRANCH TO THE GROUND, IF THAT IS THEIR NATURAL FORM. "LIMBED-UP" TREES ARE NOT DESIRABLE FOR THIS PROJECT.
3. PROVIDE SLOPES IN PLANTING AREAS AS INDICATED ON GRADING PLANS.
4. PRIOR TO COMMENCEMENT OF LANDSCAPE INSTALLATION/PLANTING OPERATIONS, A PRE-INSTALLATION/CONSTRUCTION MEETING WILL BE SCHEDULED WITH THE CITY'S ARBORIST AND LANDSCAPE ARCHITECTS TO REVIEW THE SCOPE OF INSTALLATION PROCEDURES AND PROCESSES.
5. STAKE LOCATIONS OF NEW PLANT MATERIALS BEFORE EXCAVATING PLANT PITS FOR REVIEW IN FIELD WITH LANDSCAPE ARCHITECT.
6. COORDINATE LOCATIONS OF NEW PLANTINGS WITH UTILITIES. OBTAIN AS-BUILT PLAN OF UTILITIES BEFORE BEGINNING PLANTING. REVIEW WITH LANDSCAPE ARCHITECT.
7. REPAIR VEGETATIVE COVER OVER UTILITY TRENCHES NOT SHOWN ON THIS DRAWING BY (PREPARING PLANTING SOIL AND SEEDING/SODDING/PLANTING TO MATCH EXISTING CONDITION).
8. PROVIDE THE QUANTITY OF EACH PLANT INDICATED ON THE PLANTING PLAN IF THOSE QUANTITIES DO NOT AGREE WITH THE QUANTITIES SHOWN IN THE PLANT SCHEDULE.
9. KEEP SEALS ON PLANTS UNTIL SUBSTANTIAL COMPLETION.
10. ALL LANDSCAPE RELATED WORK SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE CURRENT AND MOST UP-TO-DATE EDITION (AT TIME OF CONSTRUCTION) OF LANDSCAPE SPECIFICATION GUIDELINES AS PRODUCED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF MARYLAND, DISTRICT OF COLUMBIA AND VIRGINIA, GAITHERSBURG, MARYLAND.
11. SPECIFICATION FOR ALL PLANTINGS SHALL BE IN ACCORDANCE WITH THE CURRENT AND MOST UP TO DATE EDITION OF ANSI-Z60.1, THE AMERICAN STANDARD FOR NURSERY STOCK AS PRODUCED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, WASHINGTON, DC.
12. SUITABLE ARRANGEMENTS HAVE BEEN MADE FOR PRE-SELECTION TAGGING, PRE-CONTRACT GROWING, OR IS UNDERTAKING SPECIALIZED PLANTING STOCK DEVELOPMENT WITH A NURSERY OR GROWER THAT IS CONVENIENTLY LOCATED TO THE PROJECT SITE, OTHER PROCEDURES THAT WILL ENSURE AVAILABILITY OF SPECIFIED MATERIALS. IN THE EVENT THAT SHORTAGES AND/OR INABILITY TO OBTAIN SPECIFIED PLANTINGS OCCURS, REMEDIAL EFFORTS INCLUDING SPECIES CHANGES, ADDITIONAL PLANTINGS AND MODIFICATION TO THE LANDSCAPE PLAN SHALL BE UNDERTAKEN BY THE APPLICANT. ALL REMEDIAL EFFORTS SHALL, WITH PRIOR APPROVAL BY THE CITY, BE PERFORMED TO THE SATISFACTION OF THE DIRECTORS OF PLANNING & ZONING, RECREATION, PARKS & CULTURAL ACTIVITIES AND TRANSPORTATION & ENVIRONMENTAL SERVICES.
13. MAINTENANCE FOR THIS PROJECT SHALL BE PERFORMED IN PERPETUITY, IN COMPLIANCE WITH CITY OF ALEXANDRIA LANDSCAPE GUIDELINES AND/OR AS CONDITIONED BY PROJECT APPROVAL.
14. A CERTIFICATION LETTER FOR TREE WELLS, TREE TRENCHES AND PLANTINGS ABOVE STRUCTURE SHALL BE PROVIDED BY THE PROJECT'S LANDSCAPE ARCHITECT. THE LETTER SHALL CERTIFY THAT ALL BELOW GRADE CONSTRUCTION IS IN COMPLIANCE WITH APPROVED DRAWINGS AND SPECIFICATIONS. THE LETTER SHALL BE SUBMITTED TO THE CITY ARBORIST AND APPROVED PRIOR TO APPROVAL OF THE LAST AND FINAL CERTIFICATE OF OCCUPANCY FOR THE PROJECT. THE LETTER SHALL BE SUBMITTED BY THE OWNER/APPLICANT/SUCCESSOR AND SEALED AND DATED AS APPROVED BY THE PROJECT'S LANDSCAPE ARCHITECT.
15. ALL LANDSCAPE ELEMENTS MUST MEET THE CITY OF ALEXANDRIA'S LANDSCAPING GUIDELINES AND RELATED REQUIREMENTS.
16. FINAL WETLAND RESTORATION AND LANDSCAPING PLANS (THE "PLANS") SUBJECT TO THE REVIEW AND APPROVAL OF THE PERMITTING AGENCIES (USACE AND VDEQ) AND THE DIRECTOR OF ALEXANDRIA'S DEPARTMENT OF RECREATION, PARKS AND CULTURAL ACTIVITIES (RPCA).
17. PLANS TO COMPLY WITH THE CITY'S URBAN FORESTRY MASTER PLAN. SPECIFICALLY, USE NATURALLY OCCURRING NATIVE SPECIES IN WETLANDS PLANTINGS AND OTHER SITES IN AND AROUND NATURAL AREAS.
18. PLANTING OF NON-NATIVE (NATIVE IS DEFINED AS NATIVE TO THE LEVEL IV ECOREGION OF ALEXANDRIA, THE CHESAPEAKE ROLLING COASTAL PLAIN) SPECIES MAY BE APPROVED BY THE DIRECTOR OF THE RPCA, IF CRITICAL TO SCREENING THE METRO STATION FROM THE GEORGE WASHINGTON NATIONAL PARKWAY.
19. TO ACCOMPLISH CITY'S OBJECTIVE TO SCREEN THE METRO STATION FROM GEORGE WASHINGTON PARKWAY, THIS PLANTING PLAN REPRESENTS THE MINIMUM PLANTING STANDARDS REQUIRED.
20. ALL AREAS TO BE DISTURBED TO THE NORTH OF THE WETLANDS ALONG THE TRACKS, MUST BE RESTORED WITH APPROPRIATE GRADES TO DRAIN THE AREA AND ESTABLISHED WITH GROUND COVER TO BE APPROVED BY THE DIRECTOR OF THE RPCA.
21. PLANTING AREAS SHOULD INCLUDE PROTECTION FROM PESTS, SUCH AS GEESE AND BEAVERS, DURING THE WARRANTY PERIOD.

LEGEND

VISUAL SCREENING PLANTING LOCATIONS

- CANOPY TREES, 2.5-3" CAL. MIN., VISUAL SCREENING LOCATIONS, SEE PLANT SCHEDULE FOR SPECIES PER ZONE
- UNDERSTORY TREES, 1.5-2" CAL. MIN., VISUAL SCREENING LOCATIONS, SEE PLANT SCHEDULE FOR SPECIES PER ZONE
- EVERGREEN TREES, 10' HT. MIN., VISUAL SCREENING LOCATIONS, SEE PLANT SCHEDULE FOR SPECIES PER ZONE

RESTORATION PLANTING ZONES- SEE SHEET L-LP-1/502

- A: PALUSTRINE FORESTED WETLAND RESTORATION PLANTING- 20,895 SF; 500 STEMS/ ACRE MINIMUM IN ADDITION TO VISUAL SCREENING PLANTING AS SHOWN; SEE PLANT SCHEDULE FOR SPECIES, SIZES AND QUANTITIES PER ZONE (PFO)(SATURATED ZONE)
- B: PFO AND PSS TRANSITION RESTORATION PLANTING- 65,583 sf; 500 STEMS/ ACRE MINIMUM IN ADDITION TO VISUAL SCREENING PLANTING AS SHOWN; SEE PLANT SCHEDULE FOR SPECIES, SIZES AND QUANTITIES PER ZONE (TEMPORARILY INUNDATED ZONE)
- C: PALUSTRINE SCRUB-SHRUB WETLAND RESTORATION PLANTING- 13,600 sf; 500 STEMS/ ACRE MINIMUM IN ADDITION TO VISUAL SCREENING PLANTING AS SHOWN; SEE PLANT SCHEDULE FOR SPECIES, SIZES AND QUANTITIES PER ZONE (PSS) (PERMANENTLY INUNDATED ZONE)
- D: PALUSTRINE EMERGENT WETLAND RESTORATION PLANTING- 20,540 sf; 500 STEMS/ ACRE MINIMUM IN ADDITION TO VISUAL SCREENING PLANTING AS SHOWN; SEE PLANT SCHEDULE FOR SPECIES, SIZES AND QUANTITIES PER ZONE (PEM) (PERMANENTLY INUNDATED ZONE)
- E: STEEP SLOPE UPLAND RESTORATION PLANTING- 26,435 sf; 500 STEMS/ ACRE MINIMUM IN ADDITION TO VISUAL SCREENING PLANTING AS SHOWN; SEE PLANT SCHEDULE FOR SPECIES, SIZES AND QUANTITIES PER ZONE
- F: METRO STATION UPLAND BUFFER- 5,188 sf; VISUAL SCREENING PLANTING AS SHOWN; SEE PLANT SCHEDULE FOR SPECIES, SIZES AND QUANTITIES PER ZONE

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CHAIRMAN, PLANNING COMMISSION DATE
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JOSÉ MARIA ALMIÑANA
Cert. No. 0406 000923
LANDSCAPE ARCHITECT
4/28/2016

PRELIMINARY PLAN
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SCALE:	AS SHOWN
DATE:	5/19/2016
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AA PROJECT #:	130014.01
PROJECT PHASE:	DESIGN DEVELOPMENT

DRAWING TITLE:
WETLAND PLANTING PLAN

SHEET:
LP-102

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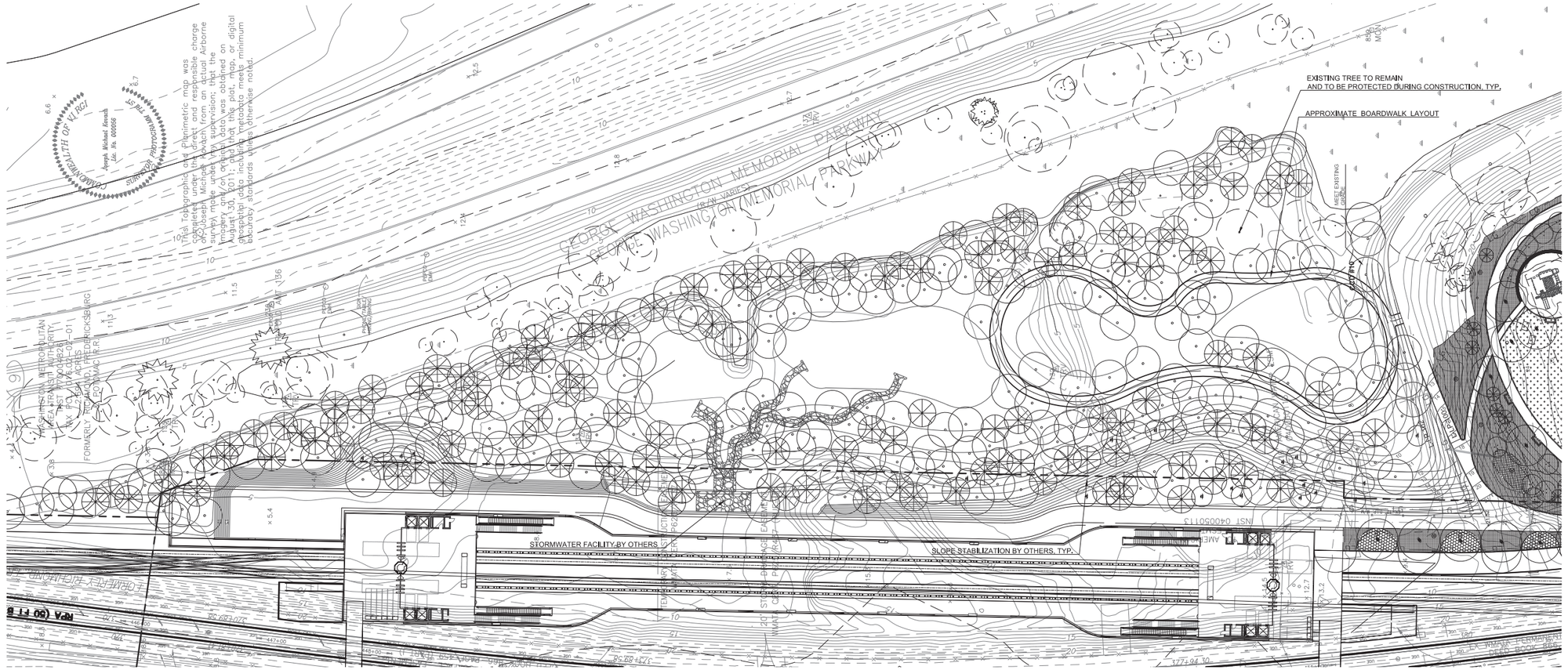

NOTES

1. THIS DRAWING IS A CONCEPT DRAWING AND FOR THE PURPOSES OF COSTING ONLY.
2. INSTALL INTERPRETIVE SIGNAGE TO MATCH EXISTING SIGNAGE IN CONTENT AND QUANTITY.
3. MAINTENANCE FOR THIS PROJECT SHALL BE PERFORMED IN PERPETUITY, IN COMPLIANCE WITH CITY OF ALEXANDRIA LANDSCAPE GUIDELINES AND/OR AS CONDITIONED BY PROJECT APPROVAL.
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AA PROJECT #:	130014.01
PROJECT PHASE:	DESIGN DEVELOPMENT

DRAWING TITLE:

WETLAND SITE DETAILS

SHEET:

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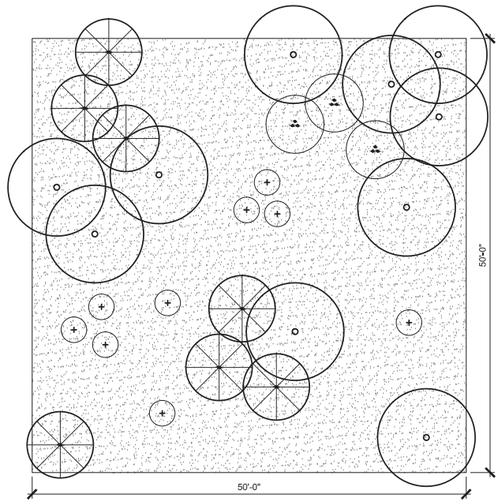
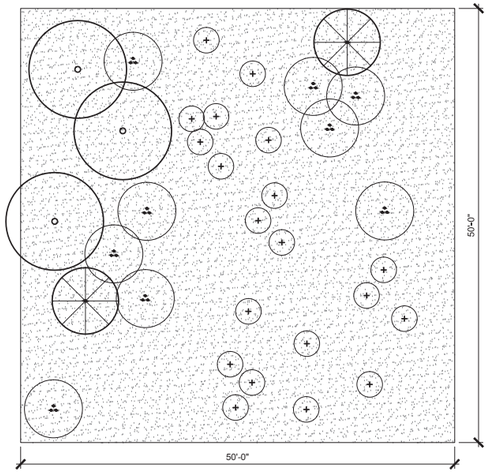
DATE MODIFIED: 5/17/2016



PLAN

1 / LP-502 — **PAUSTRINE FORESTED WETLAND RESTORATION PLANTING (A)- CONCEPTUAL LAYOUT**

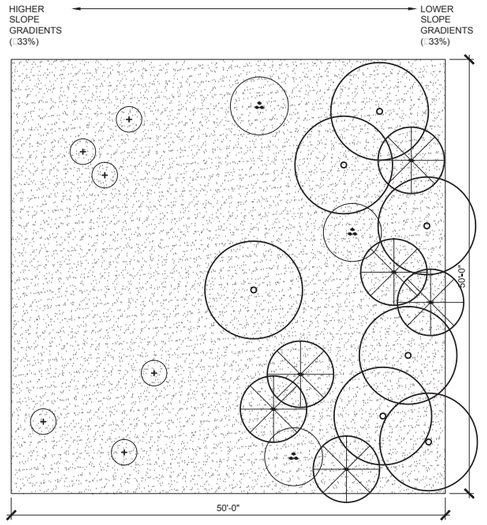
1/8" = 1'-0"



PLAN

3 / LP-502 — **PALUSTRINE SCRUB-SHRUB WETLAND RESTORATION PLANTING (C)- CONCEPTUAL LAYOUT**

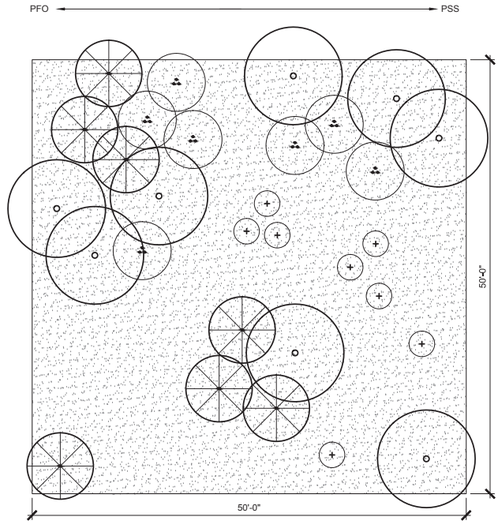
1/8" = 1'-0"



PLAN

5 / LP-502 — **STEEP SLOPE UPLAND RESTORATION PLANTING (E)- CONCEPTUAL LAYOUT**

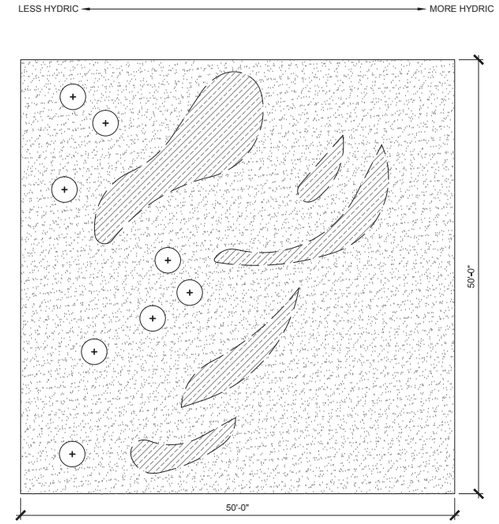
1/8" = 1'-0"



PLAN

2 / LP-502 — **PFO AND PSS TRANSITION WETLAND RESTORATION PLANTING (B) - CONCEPTUAL LAYOUT**

1/8" = 1'-0"



PLAN

4 / LP-502 — **PALUSTRINE EMERGENT WETLAND RESTORATION PLANTING (D)- CONCEPTUAL LAYOUT**

1/8" = 1'-0"

LEGEND

- RESTORATION CANOPY TREE
- RESTORATION UNDERSTORY TREE
- RESTORATION SHRUBS
- RESTORATION HERBACEOUS PERENNIALS
- RESTORATION SEED MIX

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CHAIRMAN, PLANNING COMMISSION _____ DATE _____
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REV.	DATE	DESCRIPTION

COMMONWEALTH OF VIRGINIA
JOSÉ MARIA ALMIÑANA
Cert. No. 0406 000923
LANDSCAPE ARCHITECT
4/28/2016

PRELIMINARY PLAN
NOT FOR CONSTRUCTION OR PRICING

SCALE:	AS INDICATED ON DRAWINGS
DATE:	5/19/2016
DRAWN BY:	EM
CHECKED BY:	EM
APPROVED BY:	BM
AA PROJECT #:	130014.01
PROJECT PHASE:	DESIGN DEVELOPMENT

DRAWING TITLE:

WETLAND PLANTING DETAILS

SHEET:

LP-502

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DATE MODIFIED: 5/17/2016

POTOMAC GREENS WETLAND RESTORATION

PLANT SCHEDULE

* = dominant species

A- PALUSTRINE FORESTED WETLAND RESTORATION PLANTING

KEY	QTY	Botanical Name	Common Name	Size	Spacing	ROOT	Remarks
	35	**Visual Mitigation Canopy Trees**		**2.5 - 3" cal. minimum**	**AS SHOWN**	**B&B**	
		Acer negundo	Boxelder				
		Acer rubrum*	Red maple				
		Acer saccharinum	Silver maple				
		Betula nigra	River birch				
		Chamaecyparis thyoides	Atlantic white cedar				
		Liquidambar styraciflua*	Sweetgum				
		Nyssa biflora	Swamp tupelo				
		Nyssa sylvatica	Blackgum				
		Platanus occidentalis	American sycamore				
		Populus deltoides	Eastern cottonwood				
		Quercus phellos	Willow oak				
		Ulmus americana*	American elm				
		Ulmus rubra	Slippery elm				
	54	**Visual Mitigation Evergreen Trees**		**10' ht. minimum**	**AS SHOWN**	**B&B**	
		Ilex opaca*	American holly				
		Quercus nigra	Water Oak				
		Chamaecyparis thyoides	Atlantic white cedar				
		Pinus taeda	Loblolly pine				
	140	**Restoration Canopy Trees**		**1-1.5" cal.**	**SEE L-LP-1/502**		
		Acer negundo	Boxelder				
		Acer rubrum*	Red maple				
		Acer saccharinum	Silver maple				
		Betula nigra	River birch				
		Diospyros virginiana	Persimmon				
		Liquidambar styraciflua*	Sweetgum				
		Nyssa sylvatica*	Black gum				
		Pinus taeda*	Loblolly pine				
		Platanus occidentalis	American sycamore				
		Populus deltoides	Eastern cottonwood				
		Quercus phellos	Willow oak				
		Ulmus americana*	American elm				
		Ulmus rubra	Slippery elm				
	25	**Restoration Understory Trees**		**#3**	**SEE L-LP-1/502**		
		Alnus serrulata	Hazel alder				
		Amelanchier canadensis	Shadbush				
		Carpinus caroliniana	American hornbeam				
		Ilex opaca*	American holly				
		Magnolia virginiana*	Sweetbay				
	75	**Restoration Shrubs**		**#1**	**SEE L-LP-1/502**		
		Amorpha fruticosa	False indigo bush				
		Clethra alnifolia	Sweet pepperbush				
		Cornus amomum	Silky dogwood				
			Stiff dogwood				
		Ilex verticillata*	Winterberry				
		Itea virginica	Virginia willow				
		Leucothoe/ Eubotys racemosa	Swamp doghobble				
		Lindera benzoin	Northern spicebush				
		Morella cerifera	Southern wax myrtle				
		Rhododendron viscosum	Swamp azalea				
		Rosa palustris*	Swamp rose				
		Sambucus canadensis	American black elderberry				
		Vaccinium corymbosum	Highbush blueberry				
		Viburnum dentatum*	Southern arrowwood				
	20,895 sf	**Seed Mix**					
		PFO Seed Mix [Adapted from OBL Wetland Mix (ERNMX-131, Ernst Conservation Seeds, or Equivalent)]					
		Apply at a rate of 30 lbs/Ac or per Manufacturer's specifications			% of Mix		
			Redtop panicgrass		0.35		
		Panicum rigidulum	Virginia wildrye		0.15		
		Elymus virginicus	Shallow sedge		0.1		
		Carex lurida	Greenwhite sedge		0.09		
		Carex albolutescens	Beaked panicgrass		0.08		
		Panicum anceps	Green bulrush		0.05		
		Scripus atrovirens	Hop sedge		0.04		
		Carex lupulina	Soft rush		0.04		
		Juncus effusus*	Crimsoneyed rosemallow		0.02		
		Hibiscus moscheutos	Woolgrass		0.02		
		Scirpus cyperinus	Broadwing sedge		0.01		
		Carex alata	Mistflower		0.01		
		Conoclinium coelestinum	Common sneezeweed		0.02		
		Helenium autumnale*	Lizard's tail		0.01		
		Saururus cernuus	New York ironweed		0.01		
		Vernonia noveboracensis					

B- PALUSTRINE FORESTED WETLAND AND SCRUB-SHRUB WETLAND TRANSITION RESTORATION PLANTING

KEY	QTY	Botanical Name	Common Name	Size	Spacing	ROOT	Remarks
	115	**Visual Mitigation Canopy Trees**		**2.5 - 3" cal. minimum**	**AS SHOWN**	**B&B**	
		Acer negundo	Boxelder				
		Acer rubrum*	Red maple				
		Acer saccharinum	Silver maple				
		Betula nigra	River birch				
		Chamaecyparis thyoides	Atlantic white cedar				
		Liquidambar styraciflua*	Sweetgum				
		Nyssa biflora	Sweetgum				
		Nyssa sylvatica	Swamp tupelo				
		Platanus occidentalis	American sycamore				
		Populus deltoides	Eastern cottonwood				
		Quercus phellos	Willow oak				
		Ulmus americana*	American elm				
		Ulmus rubra	Slippery elm				
	53	**Visual Mitigation Evergreen Trees**		**10' ht. minimum**	**AS SHOWN**	**B&B**	
		Ilex opaca*	American holly				
		Quercus nigra	Water Oak				
		Chamaecyparis thyoides	Atlantic white cedar				
		Pinus taeda	Loblolly pine				
	375	**Restoration Canopy Trees**		**1-1.5" cal.**	**SEE L-LP-2/502**		
		Betula nigra	River birch				
		Chamaecyparis thyoides	Atlantic white cedar				
		Liquidambar styraciflua*	Sweetgum				
		Platanus occidentalis	American sycamore				
		Populus deltoides	Eastern cottonwood				
		Quercus phellos	Willow oak				
		Ulmus americana*	American elm				
		Ulmus rubra	Slippery elm				
	175	**Restoration Understory Trees**		**#3**	**SEE L-LP-2/502**		
		Alnus serrulata*	Hazel alder				
		Magnolia virginiana	Sweetbay				
		Persea palustris	Swampbay				
		Salix caroliniana	Coastal plain willow				
		Salix nigra*	Black willow				
		Salix sericea*	Silky willow				
	201	**Restoration Shrubs**		**#1**	**SEE L-LP-2/502**		
		Amorpha fruticosa	False indigo bush				
		Cephalanthus occidentalis*	Buttonbush				
		Clethra alnifolia	Sweet pepperbush				
		Cornus amomum*	Silky dogwood				
		Eubotrys racemosus	Swamp doghobble				
		Hibiscus moscheutos*	Crimsoneyed rosemallow				
		Ilex verticillata	Winterberry				
		Itea virginica	Virginia willow				
		Morella cerifera*	Southern wax myrtle				
		Morella pensylvanica	Northern bayberry				
		Rhododendron viscosum	Swamp azalea				
		Rosa palustris*	Swamp rose				
		Sambucus canadensis	American black elderberry				
		Vaccinium corymbosum	Highbush blueberry				
		Viburnum dentatum*	Southern arrowwood				
		Seed Mix					
	65,583 sf	PFO-PSS Transition Seed Mix [Adapted from OBL Wetland Mix (ERNMX-131, Ernst Conservation Seeds, or Equivalent)]					
		Apply at a rate of 30 lbs/Ac or per Manufacturer's specifications					
					% of Mix		
		Panicum rigidulum	Redtop panicgrass		0.35		
		Elymus virginicus	Virginia wildrye		0.15		
		Carex lurida	Shallow sedge		0.1		
		Carex albolutescens	Greenwhite sedge		0.09		
		Panicum anceps	Beaked panicgrass		0.08		
		Scripus atrovirens	Green bulrush		0.05		
		Carex lupulina	Hop sedge		0.04		
		Juncus effusus*	Soft rush		0.04		
		Hibiscus moscheutos	Crimsoneyed rosemallow		0.02		
		Scirpus cyperinus	Woolgrass		0.02		
		Carex alata	Broadwing sedge		0.01		
		Conoclinium coelestinum	Mistflower		0.01		
		Helenium autumnale*	Common sneezeweed		0.02		
		Saururus cernuus	Lizard's tail		0.01		
		Vernonia noveboracensis	New York ironweed		0.01		

1 / LP-503 **WETLAND RESTORATION PLANT SCHEDULE**
NTS

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DEPARTMENT OF PLANNING & ZONING
DIRECTOR DATE
DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. _____
DIRECTOR DATE
CHAIRMAN, PLANNING COMMISSION DATE
DATE RECORDED _____
INSTRUMENT NO. DEED BOOK NO. PAGE NO.

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REV.	DATE	DESCRIPTION

JOSÉ MARIA ALMIÑANA
Cert. No. 0406 000923
COMMONWEALTH OF VIRGINIA
LANDSCAPE ARCHITECT
4/28/2016

PRELIMINARY PLAN
NOT FOR CONSTRUCTION OR PRICING

SCALE:	AS INDICATED ON DRAWINGS
DATE:	5/19/2016
DRAWN BY:	EM
CHECKED BY:	EM
APPROVED BY:	BM
AA PROJECT #:	130014.01
PROJECT PHASE:	DESIGN DEVELOPMENT

DRAWING TITLE:
WETLAND PLANT SCHEDULE

SHEET:
LP-503

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DATE MODIFIED: 5/17/2016

C- PALUSTRINE SCRUB-SHRUB WETLAND RESTORATION PLANTING

KEY	QTY	Botanical Name	Common Name	Size	Spacing	ROOT	Remarks
	24	**Visual Mitigation Canopy Trees**		**2.5 - 3" cal. minimum**	**AS SHOWN**	**B&B**	
		Alnus serrulata*	Hazel alder				
		Salix nigra*	Black willow				
		Salix sericea*	Silky willow				
	50	**Restoration Understory Trees**		**#3**	**SEE L-LP-3/502**		
		Alnus serrulata*	Hazel alder				
		Magnolia virginiana	Sweetbay				
		Persea palustris	Swampbay				
		Salix caroliniana	Coastal plain willow				
		Salix nigra*	Black willow				
		Salix sericea*	Silky willow				
	110	**Restoration Shrubs**		**#1**	**SEE L-LP-3/502**		
		Amorpha fruticosa	False indigo bush				
		Cephalanthus occidentalis*	Buttonbush				
		Cornus amomum*	Silky dogwood				
		Eubotrys racemosus	Swamp doghobble				
		Hibiscus moscheutos*	Crimsoneyed rosemallow				
		Ilex verticillata	Winterberry				
		Itea virginica	Virginia willow				
		Morella cerifera*	Southern wax myrtle				
		Morella pensylvanica	Northern bayberry				
		Rhododendron viscosum	Swamp azalea				
		Rosa palustris*	Swamp rose				
		Sambucus canadensis	American black elderberry				
		Vaccinium corymbosum	Highbush blueberry				
		Viburnum dentatum*	Southern arrowwood				
	13,600 sf	**Seed Mix**					
		PSS Seed Mix [Adapted from OBL Wetland Mix (ERNMX-131, Ernst Conservation Seeds, or Equivalent)]					
		Apply at a rate of 30 lbs/Ac or per Manufacturer's specifications					
					% of Mix		
		Carex vulpinoidea	Fox sedge		0.35		
		Carex lurida	Shallow sedge		0.2		
		Carex lupulina	Hop sedge		0.07		
		Scirpus atrovirens	Green bulrush		0.07		
		Carex scoparia	Blunt broom sedge		0.06		
		Sparganium eurycarpum	Broadfruit bur-reed		0.04		
		Verbena hastata	Blue vervain		0.04		
		Juncus effusus	Soft rush		0.03		
		Glyceria striata*	Fowl mannagrass		0.02		
		Sparganium americanum	American bur-reed		0.02		
		Ascelepias incarnata	Swamp milkweed		0.01		
		Carex crinita	Fringed sedge		0.01		
		Mimulus ringens	Square stemmed monkeyflower		0.01		
		Onoclea sensibilis	Sensitive fern		0.01		
		Scirpus cyperinus	Woolgrass		0.01		
		Schoenoplectus tabernaemontani	Softstem bulrush		0.01		
		Alisma subcordatum	American water plantain		0.005		
		Bidens cernua	Nodding beggarticks		0.005		
		Eupatorium distulosum	Joe pye weed		0.005		
		Eutrolchium perfoliatum	Boneset		0.005		
		Iris virginica*	Virginia iris		0.005		
		Ludwigia alternifolia	Seedbox		0.005		
		Penthorum sedoides	Ditch stonecrop		0.005		
		Solidago rugosa*	Wrinkleleaf goldenrod		0.005		

D- PALUSTRINE EMERGENT WETLAND RESTORATION PLANTING

KEY	QTY	Botanical Name	Common Name	Size	Spacing	ROOT	Remarks
	66	**Restoration Shrubs**		**#1**	**SEE L-LP-1/502**	CONTAINER	
		Cephalanthus occidentalis	Buttonbush				
		Hibiscus moscheutos*	Crimsoneyed rosemallow				
		Rhododendron viscosum	Swamp azalea				
		Rosa palustris	Swamp rose				
	6525	**Restoration Herbaceous Perennials**		**SP4**	**SEE L-LP-4/502**	CONTAINER	
		Bidens laevis	Smooth beggartick				
		Carex comosa *	Longhair sedge				
		Iris versicolor	Harlequin blueflag				
		Nuphar advena (lutea)	Yellow pond-lily				
		Onoclea sensibilis	Sensitive fern				
		Peltandra virginica *	Green arrow arum				
		Pontederia cordata *	Pickerelweed				
		Sagittaria latifolia	Broadleaf arrowhead				
		Schoenoplectus fluviatilis	River bulrush				
		Zizania aquatica	Annual wildrice				
	20,540 sf	**Seed Mix**					
		PEM Seed Mix [Adapted from OBL Wetland Mix (ERNMX-131, Ernst Conservation Seeds, or Equivalent)]					
		Apply at a rate of 30 lbs/Ac or per Manufacturer's specifications					
					% of Mix		
		Carex vulpinoidea	Fox sedge		0.35		
		Carex lurida	Shallow sedge		0.2		
		Carex lupulina	Hop sedge		0.07		
		Scirpus atrovirens	Green bulrush		0.07		
		Carex scoparia	Blunt broom sedge		0.06		
		Sparganium eurycarpum	Broadfruit bur-reed		0.04		
		Verbena hastata	Blue vervain		0.04		
		Juncus effusus	Soft rush		0.03		
		Glyceria striata*	Fowl mannagrass		0.02		
		Sparganium americanum	American bur-reed		0.02		
		Ascelepias incarnata	Swamp milkweed		0.01		
		Carex crinita	Fringed sedge		0.01		
		Mimulus ringens	Square stemmed monkeyflower		0.01		
		Onoclea sensibilis	Sensitive fern		0.01		
		Scirpus cyperinus	Woolgrass		0.01		
		Schoenoplectus tabernaemontani	Softstem bulrush		0.01		
		Alisma subcordatum	American water plantain		0.005		
		Bidens cernua	Nodding beggarticks		0.005		
		Eupatorium distulosum	Joe pye weed		0.005		
		Eutrolchium perfoliatum	Boneset		0.005		
		Iris virginica*	Virginia iris		0.005		
		Ludwigia alternifolia	Seedbox		0.005		
		Penthorum sedoides	Ditch stonecrop		0.005		
		Solidago rugosa*	Wrinkleleaf goldenrod		0.005		

1 / LP-504 **WETLAND RESTORATION PLANT SCHEDULE**
NTS

E- STEEP SLOPE UPLAND RESTORATION MIX

KEY	QTY	Botanical Name	Common Name	Size	Spacing	ROOT	Remarks
	23	**Visual Mitigation Canopy Trees**		**2.5 - 3" cal. minimum**	**AS SHOWN**	**B&B**	
		Acer rubrum	Red maple				
		Acer saccharum*	Sugar maple				
		Carya cordiformis *	Bitternut hickory				
		Carya glabra*	Pignut hickory				
		Celtis occidentalis*	Common hackberry				
		Liquidambar stryaciflua	Sweetgum				
		Liriodendron tulipifera	Tulip tree				
		Nyssa sylvatica	Blackgum				
		Ostrya virginiana	Eastern hophornbeam				
		Platanus ocidentalis	American sycamore				
		Quercus alba	White oak				
		Quercus palustris	Pin oak				
		Quercus rubra*	Northern red oak				
		Tilia americana*	American basswood				
	12	**Visual Mitigation Understory Trees**		**1.5 - 2" cal. minimum**	**AS SHOWN**	**B&B**	
		Amelanchier canadensis	Serviceberry				
		Carpinus caroliniana*	Hornbeam				
		Cercis canadensis*	Eastern redbud				
		Magnolia virginiana	Sweetbay				
		Prunus serotina*	Black cherry				
	13	**Visual Mitigation Evergreen Trees**		**10' ht. minimum**	**AS SHOWN**	**B&B**	
		Ilex opaca*	American holly				
		Juniperus virginiana	Eastern red cedar				
		Pinus echinata*	Shortleaf pine				
		Thuja occidentalis	Eastern arborvitae				
	144	**Restoration Canopy Trees**		**1-1.5" cal.**	**SEE L-LP-5/502**		
		Acer saccharum*	Sugar maple				
		Acer rubrum	Red maple				
		Carya cordiformis *	Bitternut hickory				
		Celtis occidentalis*	Common hackberry				
		Ilex opaca*	American holly				
		Liquidambar stryaciflua	Sweetgum				
		Liriodendron tulipifera	Tulip tree				
		Nyssa sylvatica	Blackgum				
		Pinus echinata*	Shortleaf pine				
		Pinus taeda	Loblolly pine				
		Pinus virginiana*	Virginia pine				
		Platanus ocidentalis	American sycamore				
		Quercus palustris	Pin oak				
		Quercus rubra*	Northern red oak				
		Thuja occidentalis	Eastern arborvitae				
		Tilia americana*	American basswood				
	30	**Restoration Understory Trees**		**#3**	**SEE L-LP-5/502**		
		Amelanchier canadensis	Serviceberry				
		Quercus nigra	Water Oak				
		Quercus palustris	Pin Oak				
		Carpinus caroliniana*	Hornbeam				
		Cercis canadensis*	Eastern redbud				
		Magnolia virginiana	Sweetbay				
		Prunus serotina*	Black cherry				
	66	**Restoration Shrubs**		**#1**	**SEE L-LP-5/502**		
		Asimina triloba	Pawpaw				
		Ilex verticillata	Winterberry				
		Lindera benzoin	Spicebush				
		Sambucus racemosa	Elderberry				
		Viburnum dentatum	Southern arrowwood				
	26,435 sf	**Seed Mix**					
		ERNMX-181-2 Native Steep Slope Mix w/Grain Rye, or Equivalent Apply at a rate of 75 - 100 lbs/Ac or per Manufacturer's specifications					

F- METRO STATION UPLAND BUFFER

KEY	QTY	Botanical Name	Common Name	Size	Spacing	ROOT	Remarks
	6	**Canopy Trees**		**2.5 - 3" cal. minimum**	**AS SHOWN**	**B&B**	
		Acer rubrum	Red maple				
		Acer saccharum*	Sugar maple				
		Carya cordiformis *	Bitternut hickory				
		Carya glabra*	Pignut hickory				
		Celtis occidentalis*	Common hackberry				
		Liquidambar stryaciflua	Sweetgum				
		Liriodendron tulipifera	Tulip tree				
		Nyssa sylvatica	Blackgum				
		Ostrya virginiana	Eastern hophornbeam				
		Platanus ocidentalis	American sycamore				
		Quercus alba	White oak				
		Quercus palustris	Pin oak				
		Quercus rubra*	Northern red oak				
		Tilia americana*	American basswood				
	5	**Understory Trees**		**1.5 - 2" cal. Minimum**	**AS SHOWN**	**B&B**	
		Amelanchier canadensis	Serviceberry				
		Cornus florida	Flowering dogwood				
		Cercis canadensis	Eastern redbud				
	13	**Evergreen Trees**		**10' ht. minimum**	**AS SHOWN**	**B&B**	
		Ilex opaca*	American holly				
		Juniperus virginiana	Eastern red cedar				
		Pinus echinata*	Shortleaf pine				
		Thuja occidentalis	Eastern arborvitae				
	5,188 sf	**Seed Mix**					
		ERNMX-106 Athletic Field Mix Apply at a rate of 150lbs/Ac or per Manufacturer's specifications					

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DEPARTMENT OF TRANSPORTATION & ENVIRONMENTAL SERVICES
SITE PLAN NO. _____

_____ DIRECTOR _____ DATE

_____ CHAIRMAN, PLANNING COMMISSION _____ DATE

DATE RECORDED _____

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REV.	DATE	DESCRIPTION

COMMONWEALTH OF VIRGINIA
JOSÉ MARIA ALMIÑANA
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AA PROJECT #:	130014.01
PROJECT PHASE:	DESIGN DEVELOPMENT

DRAWING TITLE:
WETLAND PLANT SCHEDULE

SHEET:
LP-504

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DATE MODIFIED: 5/17/2016