APPENDIX J

Habitat Assessment

Stantec Consulting Services Inc.
150 Riverside Parkway, Suite 301
Fredericksburg, Virginia 22406

January 4, 2019
File: 203401233

Attention: Mitchell C. Bernstein, P.E., CCM
City of Alexandria, Virginia
Department of Project Implementation
301 King Street, Room 3200
Alexandria, Virginia 22314

Dear Mr. Bernstein,

Reference: Habitat Assessment within Proposed Impact Areas - Potomac Yard Metrorail Station, City of Alexandria, Virginia

Stantec Consulting Services Inc. (Stantec) conducted a site visit on November 28, 2018 to assess general habitat conditions within the proposed primary impact area within the preferred alternative (Build Alternative B) associated with the proposed Potomac Yard Metrorail Station. Habitat was also assessed within areas downstream of Build Alternative B and within impact areas associated with the other Build Alternatives discussed in the Final Environmental Impact Assessment (FEIS). The purpose of this assessment was to gain a better understanding of the type and quality of habitat present within potential impact areas to facilitate the permitting process.

The primary proposed impact area associated with Build Alternative B is situated between the George Washington Memorial Parkway (GWMP) and the CSXT railroad tracks, north of the Potomac Greens neighborhood. The land within this area has been highly modified as evidenced by review of historical aerial imagery and the presence of spoil piles observed in the field, resulting in mounding and irregular topography throughout this area. Palustrine emergent and forested wetlands as well as areas of higher ground are present within this area, all occupied by ruderal vegetative communities, containing both native and invasive plant species.

Palustrine emergent (PEM) wetland areas on Build Alternative B contain only sparsely scattered trees, saplings, and shrubs such as eastern cottonwood (*Populus deltoids*), American sycamore (*Platanus occidentalis*), Siberian elm (*Ulmus pumila*), and amur honeysuckle (*Lonicera maackii*). Dominant vegetation within these palustrine emergent wetlands includes common reed (*Phragmites australis*), goldenrod (*Solidago spp.*), sawtooth blackberry (*Rubus argutus*), arrowleaf tearthumb (*Persicaria sagittata*), broadleaf cattail (*Typha latifolia*) and significant vine cover from porcelain berry (*Ampelopsis brevipedunculata*), with Japanese honeysuckle (*Lonicera japonica*) also present. Siberian elm, amur honeysuckle, common reed, porcelain berry, and Japanese honeysuckle are classified as invasive by the Virginia Department of Conservation and Recreation (DCR). Hydrology present within the PEM wetland areas during field observations varied from areas of saturation in the upper 12 inches of the soil profile to inundation within depressional areas. Soils observed within PEM wetlands were sandy to silty clay loams 10YR 4/1 to 2.5Y 4/1 in Munsell color notation, with redoximorphic features present, suggesting a fluctuating water table.

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Palustrine forested (PFO) wetlands within Build Alternative B contain red maple (*Acer rubrum*), eastern cottonwood, green ash (*Fraxinus pennsylvanica*), and silver maple (*Acer saccharinum*) in the canopy. The understory contains red maple, American hornbeam (*Carpinus caroliniana*), and river birch (*Betula nigra*) saplings as well as shrubs such as amur honeysuckle and vine cover from porcelain berry, Japanese honeysuckle and common greenbrier (*Smilax Rotundifolia*). Hydrology present within the PFO areas during field observations varied from areas of saturation in the upper 12 inches of the soil profile to inundation within depressional areas. Soils observed within PFO wetlands were primarily silty clay loams 10YR 4/1 to 7.5YR 4/2 in Munsell color notation, with redoximorphic features present, suggesting a fluctuating water table.

The rest of the primary proposed impact area associated with Build Alternative B can be described as non-wetland area situated on higher ground and characterized by ruderal vegetation with significant cover from invasive species. These areas appeared to lack one or more of the three parameters (vegetation, soils, hydrology) required for positive wetland identification during field observations due primarily to topographic setting resulting from historic alteration of the landscape. Vegetative cover within these areas consists of eastern cottonwood, red maple, black locust (*Robinia pseudoacacia*), and black cherry (*Prunus serotina*) in the canopy and amur honeysuckle, eastern red cedar (*Juniperus virginiana*), staghorn sumac (*Rhus typhina*), sawtooth blackberry, and Japanese knotweed (*Fallopia japonica*) in the understory. There is significant vine cover throughout these areas in the form of porcelain berry, Japanese honeysuckle, oriental bittersweet (*Celastrus orbiculatus*), and English ivy (*Hedera helix*). Amur honeysuckle, Japanese knotweed, porcelain berry, Japanese honeysuckle, oriental bittersweet, and English ivy are classified as invasive by DCR. Soils observed throughout these areas were highly variable as a result of historic alteration to the landscape.

Downstream areas associated with Build Alternative B, situated southeast of the primary impact area and extending south and east to the Potomac River, were also assessed. These areas are comprised primarily of regularly and irregularly flooded emergent tidal (E2EM) wetlands, tidal open waters (E1UB), and tidal stream channel (R1SB), with a small component of tidal scrub shrub (E2SS) wetlands also present. The northern most portion of this downstream area represents the upper limits of tidal influence from the Potomac River as indicated by field observations and tidal survey that was conducted by Waterway Survey in December 2018. Dominant vegetation within the emergent tidal wetlands at the upper end of the tidal limits consists of common reed and broadleaf cattail, with rose mallow (*Hibiscus moscheutos*), rough barnyard grass (*Echinochloa muricata*), goldenrod, and arrowleaf tearthumb also present to a lesser degree. Further downstream, green arrow arum (*Peltandra virginica*) becomes more prevalent within the emergent tidal wetlands. Areas identified as tidal scrub shrub wetlands contain many of the dominant plant species found in the emergent tidal wetlands and are also characterized by sapling cover consisting of green ash, slippery elm (*Ulmus rubra*), black willow (*Salix nigra*) and boxelder (*Acer negundo*). Very narrow bands of palustrine forested and palustrine scrub shrub (PSS) wetlands were also identified within this downstream area, where the transition from tidal wetlands to uplands is less abrupt.

Land cover associated with Build Alternative A, Build Alternative B-CSX Design Option, and a majority of Build Alternative D can be characterized as developed urban land. The northern extents of Build Alternative D are located on the north and south banks of Four Mile Run, near its confluence with the Potomac River. Four Mile Run and an unnamed tributary, entering Four Mile Run from the north, can be classified as tidal streams (R1) in this area. These stream channels have been historically modified, with an abrupt transition from tidal stream to upland and near vertical gabion and rip rap lined banks observed along both streams in this area.

Reference: **Habitat Assessment within Proposed Impact Areas - Potomac Yard Metrorail Station, City of Alexandria, Virginia**

In summary, it appears that the primary proposed impact area associated with Build Alternative B has been highly modified through the years as a result of surrounding land use, road construction, and remediation activities. The landscape within this area is occupied by ruderal vegetative communities characterized by significant invasive cover. Tidal wetlands located within the downstream areas associated with Build Alternative B have also been historically modified due to surrounding land use. The upper reaches of the downstream area are bound by the Potomac Greens development and Potomac Greens Park to the west and the GWMP to the east and is also occupied by a ruderal vegetation community, characterized by dominant invasive cover, primarily in the form of common reed. Representative photographs of the areas discussed are included with this letter.

Regards,

Stantec Consulting Services Inc.

Jason Mann
Senior Ecologist
Phone: (540) 785-5544
Fax: (540) 785-1742
jason.mann@stantec.com

Attachment: Representative Photographs

c. Loretta Cummings, Ph.D. – Stantec

Photograph 1: Palustrine emergent wetland within Build Alternative B.

Photograph 2: Palustrine forested wetland within Build Alternative B.

Photos taken by: J. Mann
Stantec Consulting Services Inc.
November 28, 2018
Project #203401233

Photograph 3: Non-wetland area containing significant invasive cover within Build Alternative B.

Photograph 4: Previously disturbed landscape within Build Alternative B containing significant mounding and heavy invasive vine cover in the form of porcelain berry.

Photos taken by: J. Mann
Stantec Consulting Services Inc.
November 28, 2018
Project #203401233

Photograph 5: Tidal stream channel and adjacent tidal emergent wetlands dominated by common reed and cattail vegetative cover within the northern end of the downstream area associated with Build Alternative B.

Photograph 6: Tidal open water area between Potomac Greens and the George Washington Memorial Parkway within the downstream area associated with Build Alternative B.

Photograph 7: Tidal stream channel and adjacent tidal emergent wetlands within the Alternative B downstream area, east of the George Washington Memorial Parkway, looking east towards the Potomac River.

Photograph 8: Four Mile Run near its confluence with the Potomac River at the northern end of Build Alternative D.

Photograph 9: Tributary to Four Mile Run with rip rap and gabion lined banks at the northern end of Build Alternative D.

LEGEND:

- APPROXIMATE FORESTED WETLAND (PFO) LIMITS
- APPROXIMATE EMERGENT WETLAND (PEM) LIMITS
- PROJECT LIMITS
- # PHOTO-LOCATION

SITE DATA:

PROJECT AREA	16.84 ACRES ±
PFO WETLANDS	2.27 ACRES ±
PEM WETLANDS	2.16 ACRES ±

NOTES:

1. COORDINATE SYSTEM WMATA 2009
2. TOPOGRAPHY PROVIDED BY BOWMAN CONSULTING
3. THE LIMITS OF WETLANDS AND OTHER WATERS OF THE U.S. SHOWN ON THIS MAP HAVE BEEN FIELD SURVEYED AND ARE FOR PLANNING PURPOSES ONLY.

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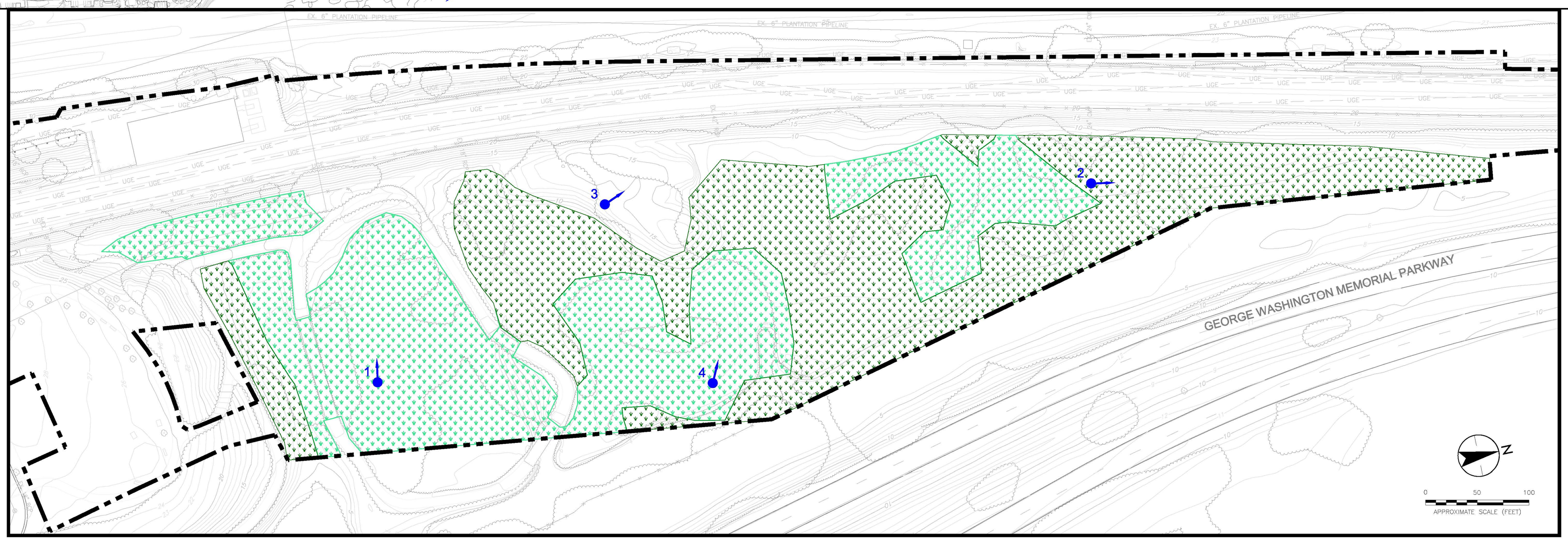
0 200 400
APPROXIMATE SCALE (FEET)



INSET

Stantec
150 Riverside Parkway, Suite 301
Fredericksburg, VA 22406
PHONE: (540) 785-5544 FAX: (540) 785-1742

FOR:			FIGURE:
CITY OF ALEXANDRIA, VIRGINIA	COA POTOMAC YARDS METRO HABITAT ASSESSMENT PHOTO-LOCATIONS MAP		1
JOB NUMBER: 203401233	DRAWN BY: REC	CHECKED BY: AF / APPROVED BY: LC	DATE: DECEMBER 21, 2018

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