

## 1 1.0 PROJECT PURPOSE AND NEED

### 2 1.1 Introduction

3 The Federal Transit Administration (FTA), as the lead Federal agency, and the City of Alexandria, as the project  
4 sponsor and joint lead agency, in cooperation with the Washington Metropolitan Area Transit Authority  
5 (WMATA), and the National Park Service (NPS), prepared this Draft Environmental Impact Statement (EIS),  
6 under the National Environmental Policy Act (NEPA), for the proposed Potomac Yard Metrorail Station (or “the  
7 project”). Because the project has the potential to utilize Federal funds, FTA is the lead Federal agency for the  
8 project.

9 The project consists of construction of a new Metrorail station and ancillary facilities located at Potomac Yard  
10 within the City of Alexandria along the existing Metrorail Blue and Yellow Lines between the Ronald Reagan  
11 Washington National Airport Station and the Braddock Road Station. **Figure 1-1** shows the project study area in  
12 northern Alexandria and southern Arlington County. The project would serve existing neighborhoods and retail  
13 centers as well as high-density, transit-oriented development planned by the City of Alexandria. The project  
14 would provide access to the regional Metrorail system for the U.S. Route 1 corridor of north Alexandria. The  
15 Potomac Yard area is currently without direct access to regional transit services, such as Metrorail.

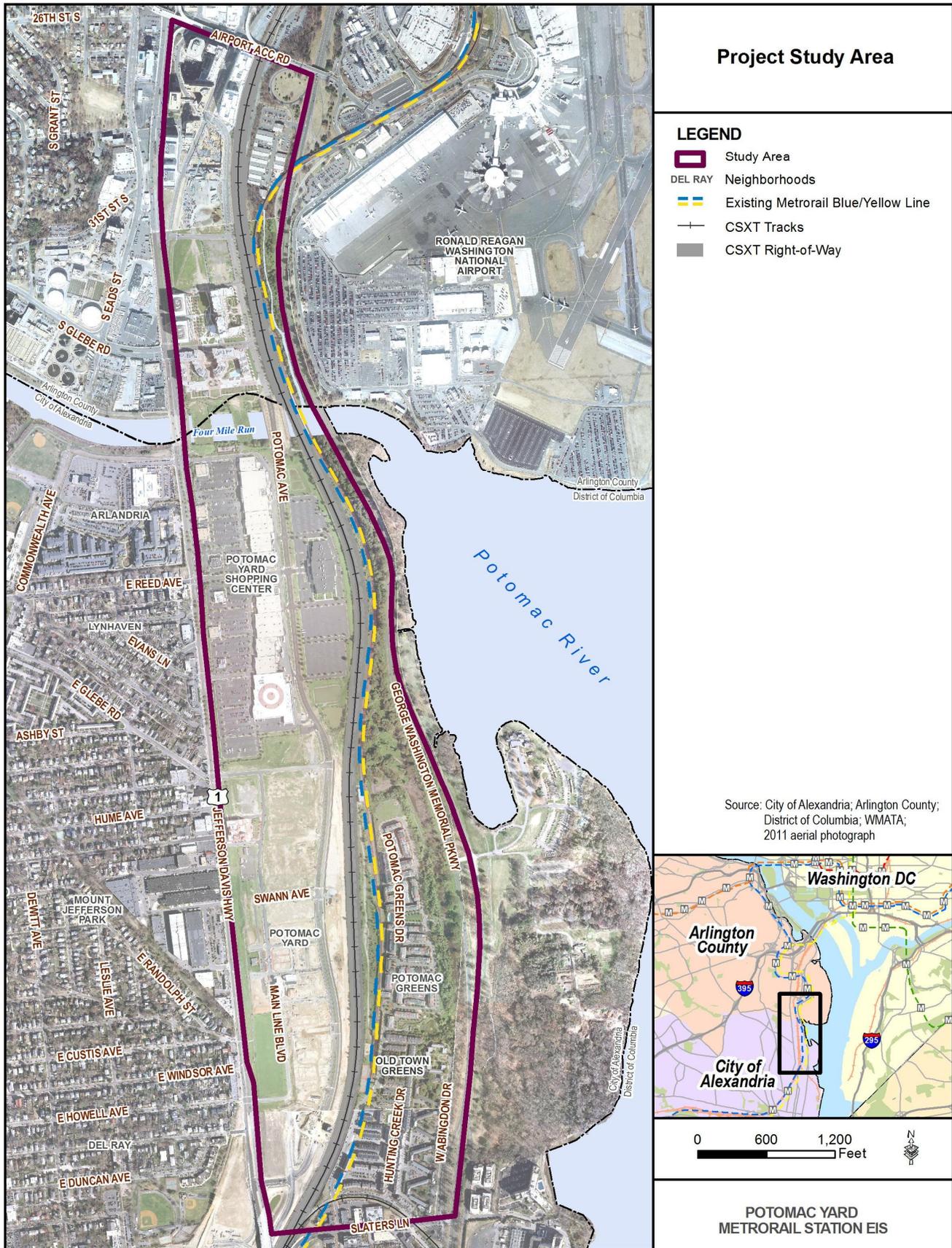
### 16 1.2 Project Background

17 The study area for the proposed Potomac Yard Metrorail Station is in the City of Alexandria and Arlington  
18 County, Virginia, located in the Northern Virginia portion of the Washington metropolitan region. The area is  
19 bound by U.S. Route 1 (Jefferson Davis Highway) on the west, George Washington Memorial Parkway (a unit of  
20 the National Park System) on the east, Slaters Lane on the south, and the Ronald Reagan Washington National  
21 Airport Access Road on the north.

22 The construction of a Metrorail station in Potomac Yard was anticipated when WMATA established the *Metrorail*  
23 *Adopted Regional System Plan* in 1968. At the time the Blue and Yellow Line tracks were built, the area was  
24 occupied by the Richmond, Fredericksburg & Potomac (RF&P) Railroad Potomac Yard, and a station was not  
25 justified by WMATA. Metrorail planners identified the site for a station to be added later, and the *Final*  
26 *Environmental Impact Statement, Metropolitan Washington Regional Rapid Rail Transit System* (August 1975,  
27 p. 188) cites the provision for a future station at Potomac Yard, although at the time, the City of Alexandria  
28 decided to proceed with a station near existing development further south at Braddock Road. Beginning in the  
29 late 1980s, the rail yard was phased out, and the area was being considered for redevelopment. By 1992, the  
30 existing rail yard was rezoned to allow for redevelopment, and, by the late 1990s, commercial stores were built,  
31 followed by residential units, office space, retail, and park space. The commercial stores on the northern portion  
32 of the site within the City of Alexandria were intended as an interim use, until demand was sufficient for higher-  
33 density uses. Currently, portions of Potomac Yard are still under development, either under construction or  
34 planned for higher-density mixed-use redevelopment in the coming years.

35 Since removal of the former rail yard, multiple plans have included construction of a Metrorail station in Potomac  
36 Yard to serve new development. A potential Potomac Yard Metrorail Station was included in WMATA’s 1999  
37 *Transit Service Expansion Plan*, the 2010 *Financially Constrained Long-Range Transportation Plan for the*  
38 *National Capital Region* (CLRP), and earlier WMATA and regional transportation plans. A Metrorail station at  
39 Potomac Yard was also included in the City of Alexandria’s 1992 and 2008 *Transportation Master Plans* and  
40 2010 *North Potomac Yard Small Area Plan* (NPYSAP).

41 Figure 1-1: Project Study Area



42

## 43 1.3 Project Purpose and Need

### 44 Project Purpose

45 The purpose of the project is to improve local and regional transit accessibility to and from the Potomac Yard  
46 area adjacent to the U.S. Route 1 corridor for current and future residents, employees, and businesses.

### 47 Project Need

48 Currently, the project area is not served by direct access to regional transit services, such as Metrorail. The  
49 initial segment of the Crystal City/Potomac Yard (CCPY) Transitway (also known as Metroway) opened in  
50 August 2014. Metroway is a premium bus service that serves riders along the U.S. Route 1 corridor between the  
51 Braddock Road and Crystal City Metrorail Stations and operates in bus-only lanes for the most congested  
52 portions of the route. The second phase of the project, which will provide dedicated bus-only lanes along  
53 segments within Arlington County and extend the route to the Pentagon City Metrorail Station, is currently under  
54 construction. The existing transitway and its future extension will improve reliability and travel times of local bus  
55 transit services along the corridor. However, direct access to the regional Metrorail system is still needed to  
56 enhance accessibility and mobility to and from the area via longer transit trips, both for existing travel demand  
57 and to support the City of Alexandria's planned redevelopment of Potomac Yard, which will include a major  
58 transit-oriented, mixed-use activity center.

59 According to the Metropolitan Washington Council of Governments (MWCOC) *Round 8.1 Cooperative Forecast*,  
60 the population of Alexandria is expected to grow by 35 percent over the next 30 years, while the population of  
61 the Northern Virginia area as a whole is expected to grow by 41 percent. Within the same time period,  
62 employment in Alexandria is expected to grow by 46 percent, while Northern Virginia as a whole will experience  
63 a 53 percent increase in employment. This growth would result in increased vehicle miles traveled (VMT) and  
64 congestion; the transportation study conducted as part of the *North Potomac Yard Small Area Plan* (NPYSAP)  
65 indicates that traffic congestion will increase on U.S. Route 1 even without the proposed development in  
66 Potomac Yard. Increasing the share of transit trips would help to manage congestion, reduce auto trips and  
67 emissions along transit corridors, and make efficient use of existing infrastructure.

68 The study area includes and is located adjacent to existing residential neighborhoods and includes an  
69 approximately 600,000 square-foot retail center. In 2010, the Alexandria City Council approved the NPYSAP,  
70 which guides redevelopment of the existing retail center into a dense walkable urban environment with a mix of  
71 uses supported by new local and regional transit services. The NPYSAP plans for 7.525 million square feet of  
72 mixed-use development, including office, retail, residential, and hotel uses supported by a proposed Metrorail  
73 station located east of North Potomac Yard and the CSXT tracks, just north of the Potomac Greens  
74 neighborhood (approximate location of Build Alternative B considered in the Draft EIS and described in **Chapter**  
75 **2 Alternatives Considered**). If a Metrorail station is not constructed or is constructed in a different location,  
76 then the allowable development volume in North Potomac Yard would be reduced by as much as 3.8 million  
77 square feet to a total of 3.7 million square feet. Properties in the South Potomac Yard redevelopment area are  
78 approved for a total of approximately 5.1 million square feet of development, much of which has already been  
79 constructed.

80 Thus, the planned redevelopment of Potomac Yard will impact the existing roadway network with increased  
81 travel demand resulting in additional vehicle and transit trips. The NPYSAP states that "New transit  
82 infrastructure including a new Metrorail station, dedicated high-capacity transitway and expanded local bus  
83 service are required by the Plan to support the proposed density." (City of Alexandria, NPYSAP, p. 57) The  
84 *Potomac Yard Multimodal Transportation Study* (City of Alexandria, 2010) found that these transit services  
85 would support a high transit mode share, and that the transitway and expanded bus service by themselves  
86 would not be able to accommodate the expected increase in travel demand from the fully-built urban activity  
87 center envisioned in the NPYSAP.

88 Further expansion of the roadway network in the project area to accommodate local and regional trips is limited  
89 by the heavy rail tracks to the east, a pedestrian-friendly urban street grid within Potomac Yard, and existing  
90 residential neighborhoods along the west side of U.S. Route 1. Due to the constrained capacity of the roadway  
91 network, additional transportation options are needed to support the City of Alexandria's redevelopment plans  
92 by accommodating travel demand through transit and other non-auto modes. Direct regional transit access  
93 would provide more transportation choices for residents and workers and would enhance connections to  
94 regional employment and activity centers.

## 2.0 ALTERNATIVES CONSIDERED

This chapter describes each project alternative considered in the Potomac Yard Metrorail Station Draft Environmental Impact Statement (EIS), the planning processes used to identify and develop the alternatives, and the evaluation process used to compare the effects of the alternatives. This chapter is organized as follows:

- **Section 2.1** describes the local planning process which led to the Draft EIS.
- **Section 2.2** discusses the development and refinement of the alternatives considered for the project.
- **Section 2.3** describes the No Build Alternative.
- **Section 2.4** describes the three Build Alternatives and B-CSX Design Option.
- **Section 2.5** evaluates the performance of the No Build Alternative and the three Build Alternatives and B-CSX Design Option relative to the project purpose and need and environmental consequences.

The No Build Alternative would include the existing transportation network plus committed improvements from local and regional transportation plans. The No Build Alternative is used as a baseline from which to compare each proposed Build Alternative. The project includes three Build Alternatives and a design option for one of the Build Alternatives (B-CSX Design Option), each of which includes construction of a Metrorail station in Potomac Yard. The City of Alexandria's preferred alternative will be selected by the City Council following publication of the Draft EIS. The acceptability of the preferred alternative with regard to National Environmental Policy Act (NEPA) compliance and other laws and regulations is subject to federal agency review. Throughout the NEPA process, the City of Alexandria has consulted with the Federal Transit Administration (FTA) and the National Park Service (NPS), as well as other relevant Federal and state agencies, in an effort to ensure project compliance with NEPA, Section 4(f) of the U.S. Department of Transportation Act, Section 106 of the National Historic Preservation Act, and other applicable laws (see **Section 4.1 Agency Coordination**).

### 2.1 Local Planning Process

As redevelopment of Potomac Yard has proceeded, various land use and transportation plans have included the addition of a new Metrorail station in the area. The construction of a Metrorail station has typically been included in land use plans as part of the transportation network to accommodate new development.

The Washington Metropolitan Area Transit Authority (WMATA) initially considered construction of a Metrorail station at Potomac Yard during the planning of the Metrorail Regional System. In 1975, the United States Department of Transportation (USDOT), in cooperation with WMATA, released the *Final Environmental Impact Statement, Metropolitan Washington Regional Rapid Rail Transit System*. The Metrorail system Final EIS noted that Metrorail access at Potomac Yard could be beneficial to new industrial development and proposed a station within the vacant tracts of land near Monroe Avenue (now Slaters Lane). However, to serve existing development at the time, the City of Alexandria requested that a station instead be considered farther south at Braddock Road. The station was constructed at Braddock Road rather than at Monroe Avenue.

In the 1960s, the Richmond, Fredericksburg & Potomac (RF&P) Railroad had leased underutilized and vacant land adjacent to Potomac Yard to a private developer, who proposed several plans for redevelopment in the 1960s and 1970s. This land is now occupied by the Old Town Greens and Potomac Greens neighborhoods. In the 1970s, plans for redevelopment included setting aside land for construction of a rapid rail station, but were not executed until later planning efforts and development agreements in the 1990s (described on the following page). During the mid-1980s, several plans were submitted for redevelopment of the Old Town Greens and Potomac Greens site. Concern by citizens groups and the City of Alexandria over the potential impacts of dense development and a new interchange on the George Washington Memorial Parkway (GWMP) led the U.S. Congress to direct NPS to conduct an EIS. In 1991, NPS released the *George Washington Memorial Parkway – Potomac Greens Final Environmental Impact Statement*, which evaluated several “protection alternatives,” including acquisition of all or part of the Old Town Greens and Potomac Greens site. No final Record of Decision was prepared for the 1991 EIS, as the EIS was prepared in response to a Congressional directive rather than under NEPA, and no final decision document was requested by Congress.

Because a portion of the rail yard in Arlington County had been constructed on fill over waters of the United States, an indenture, granted in 1938, was necessary to allow operation of rail uses on the land parcels. For non-rail uses to occur, the federal government needed to release the landowner from the requirement to operate rail-related uses on the property. In 2000, as part of a land exchange to allow redevelopment of the Arlington

51 County portion of Potomac Yard and negate the right to build an interchange on the GWMP to serve Potomac  
52 Greens, the owner of the property conveyed a perpetual scenic easement (known as the Greens Scenic Area  
53 easement) to the United States Department of the Interior for much of the land to the north of the Potomac  
54 Greens neighborhood and east of the Metrorail tracks. The scenic easement was created "...for the purpose of  
55 conserving and preserving the natural vegetation, topography, habitat and other natural features now existing  
56 within the Greens Scenic area" (Release Agreement and Scenic Easement, Title Document #000005341, p.0029).  
57 See **Appendix G** for additional information and title documents relating to the Greens Scenic Area easement.

58 The rail yard was decommissioned in 1989, and environmental remediation of the site was undertaken by the  
59 United States Environmental Protection Agency (USEPA) as a Comprehensive Environmental Response,  
60 Compensation, and Liability Act (CERCLA, also referred to as "Superfund") Removal Action during the 1990s  
61 and early 2000s. As preparations to decommission the rail yard continued, planning began for eventual re-use  
62 of the site and surrounding properties. In the mid-1980s, the City of Alexandria drafted the *Alexandria 2020* plan,  
63 which introduced the first proposal for a mixed-use, neighborhood development for Potomac Yard. The plan  
64 proposed a site for a Metrorail station near the center of the yard; however, the plan was never formally  
65 submitted to the Alexandria City Council for approval.

66 The City adopted the *Potomac Yard/Potomac Greens Small Area Plan* (PYGSAP) in 1992. A Coordinated  
67 Development District (CDD), which is a new zoning district specific to the development, was adopted in  
68 accordance with the plan, which permitted approximately 8.8 million square feet of development in Potomac  
69 Yard. A number of development proposals, including a proposed professional football stadium and a new U.S.  
70 Patent and Trademark Office, were proposed for the site between 1992 and 1999. In 1995, the northernmost  
71 portion of Potomac Yard within the City of Alexandria (what is now known as North Potomac Yard or Landbay F)  
72 was developed as a retail shopping center (the existing Potomac Yard Shopping Center) in accordance with the  
73 CDD. The PYGSAP was revised in 1999, and Potomac Yard was rezoned as CDD #10, which allowed for 6.4  
74 million square feet of development, including the existing 600,000 square feet of retail uses in North Potomac  
75 Yard (Landbay F).

76 The PYGSAP planned a Town Center, focused on East Glebe Road, surrounded by a network of open spaces  
77 and neighborhoods west of the CSXT and Metrorail tracks and provided for the development of the Old Town  
78 Greens and Potomac Greens neighborhoods east of the tracks. The planning process for the PYGSAP  
79 identified the potential for a Metrorail station on the existing Metrorail line at a straight section of track roughly  
80 east of Raymond Avenue in the area adjacent to the Town Center and Potomac Greens. The plan also  
81 established CDD guidelines for Potomac Yard/Potomac Greens (*amended by Ordinance #4076 October 16,*  
82 *1999*) that state that CDD development shall not preclude the possible future construction of a Metrorail  
83 station. Development Condition 30(A) for CDD #10 expressly contemplates the construction of a Metrorail  
84 station and related infrastructure at Potomac Yard. In accordance with this CDD Development Condition,  
85 Development Special Use Permit (DSUP) #2002-0026 as approved for Potomac Greens required the  
86 reservation of the Metrorail station area. The reservation area for the Metrorail station was identified on the  
87 Potomac Greens site plan and ultimately dedicated to the City of Alexandria in 2004.

88 The area set aside for a station has become known as the Metrorail Reservation. The Metrorail Reservation  
89 includes land in Potomac Greens Park, Rail Park, Potomac Yard Park, and the WMATA right of way.

90 In 2008, the City of Alexandria created the Potomac Yard Planning Advisory Group (PYPAG) to evaluate land  
91 use density and zoning for North Potomac Yard. In coordination with the PYPAG, the City also formed a  
92 Metrorail Station Feasibility Work Group to evaluate the technical elements related to a potential Metrorail  
93 station. These advisory committees played an important role in identifying additional Metrorail station locations  
94 and contributed to the studies described in more detail below.

95 In the *Potomac Yard Metrorail Station Concept Development Study* (2010), the City of Alexandria and WMATA  
96 collaborated to identify, examine, and screen potential locations for a Potomac Yard Metrorail station. The study  
97 analyzed eight potential locations. The study included conceptual site plans and station layouts for many of the  
98 studied alternatives, but ultimately recommended further examination of only Alternatives A, B2, and B3 (shown  
99 in **Figure 2-1**).

100 Also in 2010, the City of Alexandria adopted the *North Potomac Yard Small Area Plan* (NPYSAP) and  
101 associated CDD, which are intended to guide redevelopment of the area currently occupied by the Potomac  
102 Yard Shopping Center. The plan supersedes the PYGSAP in the North Potomac Yard area, and a new CDD  
103 #19 was adopted for the site. The NPYSAP envisions the replacement of the retail center with a high-density,

104 transit-oriented neighborhood, connected by a multi-modal transportation network which includes a Metrorail  
 105 station. The mixed-use development includes office, retail, residential and hotel uses, and permitted building  
 106 heights range from 50 feet to 250 feet. A total of 7.525 million square feet of development in North Potomac  
 107 Yard (Landbay F) is permitted if a Metrorail station is constructed at the location designated in the plan. If no  
 108 Metrorail station is built or if the Metrorail station is built at an alternate location from the specified plan, then the  
 109 approved development volume would be reduced to 3.7 million square feet and would require re-planning for the  
 110 Small Area Plan and amendments to CDD #19. The NPYSAP notes that a station at the B2 or B3 locations  
 111 would best serve the intent and vision of the plan. This recommended station location, the NPYSAP notes, is  
 112 subject to coordination among stakeholders, resolution of environmental issues, and consideration of  
 113 alternatives under a NEPA process:

114       The implementation of the Metrorail station will require coordination with WMATA, the National Park  
 115 Service, Federal highway and transit agencies, CSX, and adjoining developers. Issues to be resolved  
 116 include impacts on the NPS scenic easement, the George Washington Memorial Parkway, and  
 117 delineation and mitigation of potential impacts to wetlands and floodplains. The developer will be  
 118 required to contribute substantially to the financing of the construction of the Metrorail station, and  
 119 special tax districts in all of the Potomac Yard CDDs will be necessary. It is required that federal  
 120 environmental review processes be followed and that a final station location will not be established until  
 121 these review processes are completed. (City of Alexandria, NPYSAP, 2010, p. 58)

122 Two separate Memoranda of Understanding (May and June 2010) between the City of Alexandria and  
 123 Potomac Yard developers provided for financing of the Metrorail station (in the Alternative B location),  
 124 associated easements, and other provisions (see City of Alexandria Potomac Yard Memoranda of  
 125 Understanding, Volume II of the Draft EIS).

126 Current plans and zoning approvals in effect for Potomac Yard are described in **Section 3.4 Land Use and**  
 127 **Zoning** and **Section 3.5 Consistency with Local Plans**.

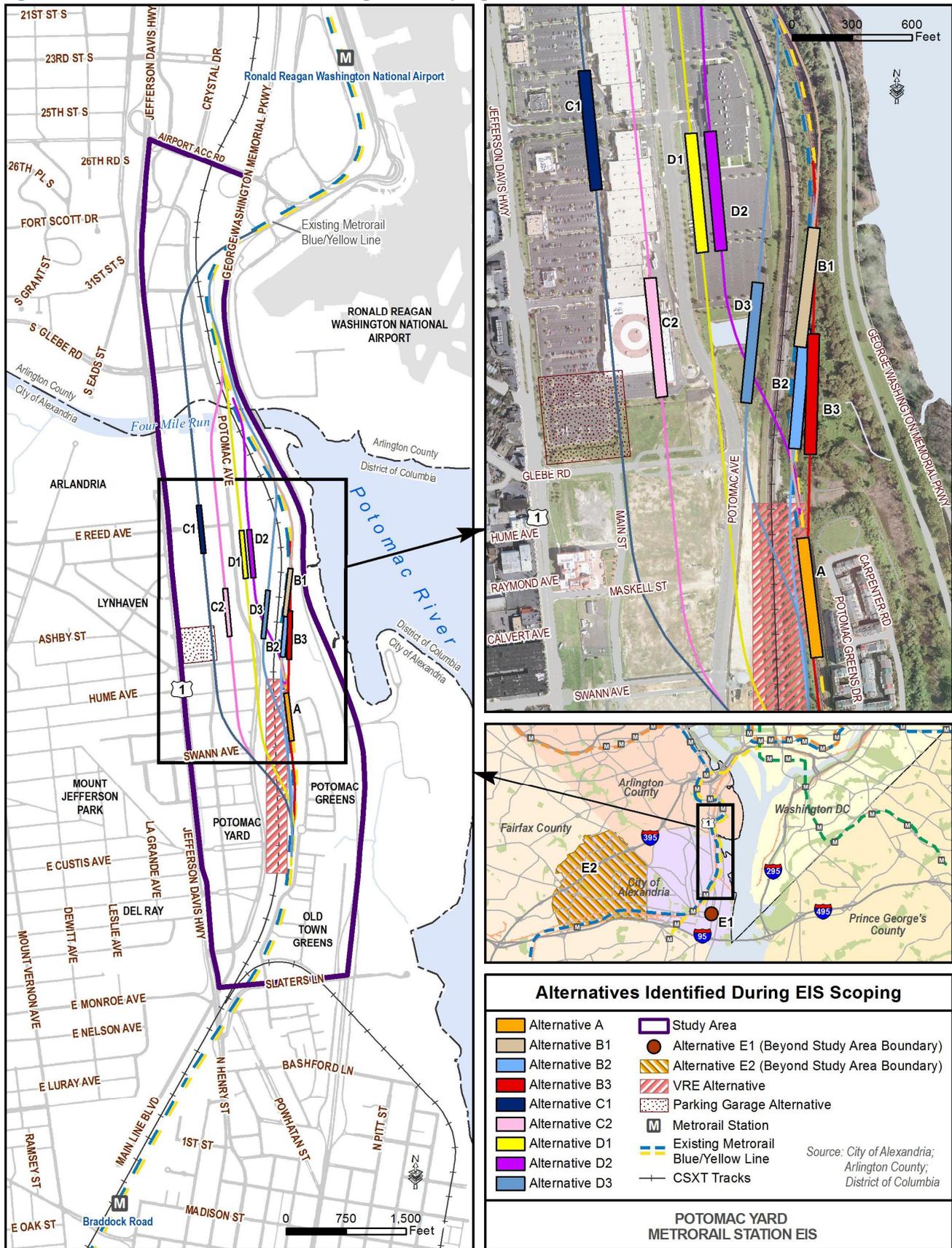
## 128 **2.2 Screening Process**

### 129 **2.2.1 Alternatives Identified During the EIS Scoping Process**

130 As noted in **Section 2.1**, The *Potomac Yard Metrorail Station Concept Development Study* identified potential  
 131 locations for a Metrorail station in Potomac Yard. All eight alternatives identified during the *Concept*  
 132 *Development Study*, in addition to a No Build Alternative, were advanced into the scoping phase of the EIS for  
 133 consideration as part of the NEPA environmental review. The purpose of re-introducing alternatives dismissed  
 134 as part of the *Concept Development Study* was to allow for consideration of a full range of alternatives during  
 135 the scoping phase. These alternatives were presented to governmental agencies and the general public for  
 136 review and comment during the scoping process and at scoping meetings.

137 For the purposes of the scoping process, each of the Build Alternatives included three potential station options  
 138 (underground, at-grade, and aerial). These Metrorail station alternatives, referred to during the scoping process  
 139 as Metrorail Station Alternatives A, B1, B2, B3, C1, C2, D1, and D2, are shown in **Figure 2-1**.

140 **Figure 2-1: Alternatives Identified During EIS Scoping**



142 During and after the public and agency scoping meetings, scoping participants suggested several new  
 143 alternatives, also shown in **Figure 2-1**. The scoping meetings are summarized in the *Scoping Summary Report*  
 144 (June 2011). Based on comments received during scoping, the following alternatives were added for  
 145 consideration:

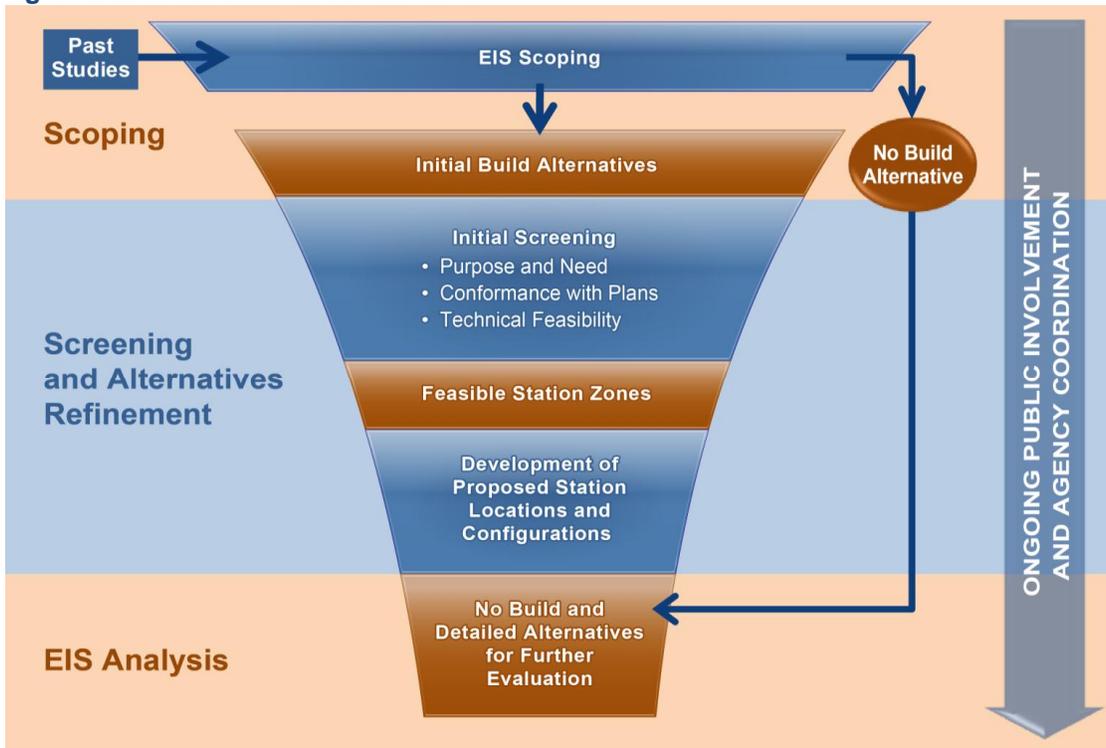
- 146 • **Metrorail Station Alternative D3**, defined as a Metrorail station located in Potomac Yard west of the  
 147 CSX Transportation (CSXT) tracks;
- 148 • **Metrorail Station Alternative E1**, defined as a Metrorail station located in Old Town Alexandria;
- 149 • **Metrorail Station Alternative E2**, defined as a Metrorail station located in the West End of Alexandria;
- 150 • **The VRE Station Alternative**, defined as a new Virginia Railway Express (VRE) commuter rail station  
 151 at Potomac Yard, located at-grade along the existing CSXT tracks;
- 152 • **The Bus Alternative**, defined as changes to area bus routes and improvements to the transportation  
 153 network to support increased trips within the corridor and improve access to existing stations of the  
 154 regional Metrorail system. This alternative would include enhancements beyond those included in the  
 155 No Build Alternative; and
- 156 • **The Parking Garage Alternative**, defined as construction of a parking deck located along U.S. Route 1  
 157 to accommodate trips with a destination in Potomac Yard.

158 The screening process evaluated a total of 36 Build Alternatives. All Build Alternatives presented and suggested  
 159 during the scoping process were considered in the initial screening.

160 **2.2.2 Screening and Alternatives Refinement**

161 Each proposed Build Alternative documented in **Section 2.4** is the result of a multi-step process intended to  
 162 develop a reasonable range of alternatives to be evaluated in the EIS. This evaluation framework is shown in  
 163 **Figure 2-2**.

164 **Figure 2-2: Refinement of Alternatives**



165 Each alternative detailed in previous applicable studies was carried through the scoping phase, as described in  
 166 **Section 2.2.1**. These alternatives, as well as the new alternatives suggested during the scoping process, were  
 167 then carried through an initial screening and refinement of alternatives. This process assessed each alternative  
 168 based on the following criteria:  
 169

- 170 1. Responsiveness to project purpose and need;  
 171 2. Consistency with land use and development plans; and  
 172 3. Technical feasibility.

173 **2.2.2.1 Initial Alternatives Unresponsive to Purpose and Need**

174 Five alternatives – the Bus Alternative, Metrorail station Build Alternatives E1 and E2, the VRE Station  
 175 Alternative, and the Parking Garage Alternative – did not pass the initial screening because they did not respond  
 176 to the project purpose and need as follows:

- 177 • **Bus Alternative** – improves local transit accessibility, including connecting service to regional transit  
 178 stations outside of Potomac Yard, but does not provide direct regional transit access to and from the  
 179 Potomac Yard area;
- 180 • **Metrorail station Build Alternatives E1 and E2** – provide direct regional transit access, but do not  
 181 serve the Potomac Yard area;
- 182 • **VRE Station Alternative** – provides direct regional transit access to the Potomac Yard area, but would  
 183 only serve a small portion of existing and potential transit users due to the limited service of commuter  
 184 rail (serves only peak period, peak-direction commuter trips); and
- 185 • **Parking Garage Alternative** – does not improve local or regional transit accessibility of the Potomac  
 186 Yard area.

187 **2.2.2.2 Initial Alternatives Inconsistent with Land Use and Development Plans**

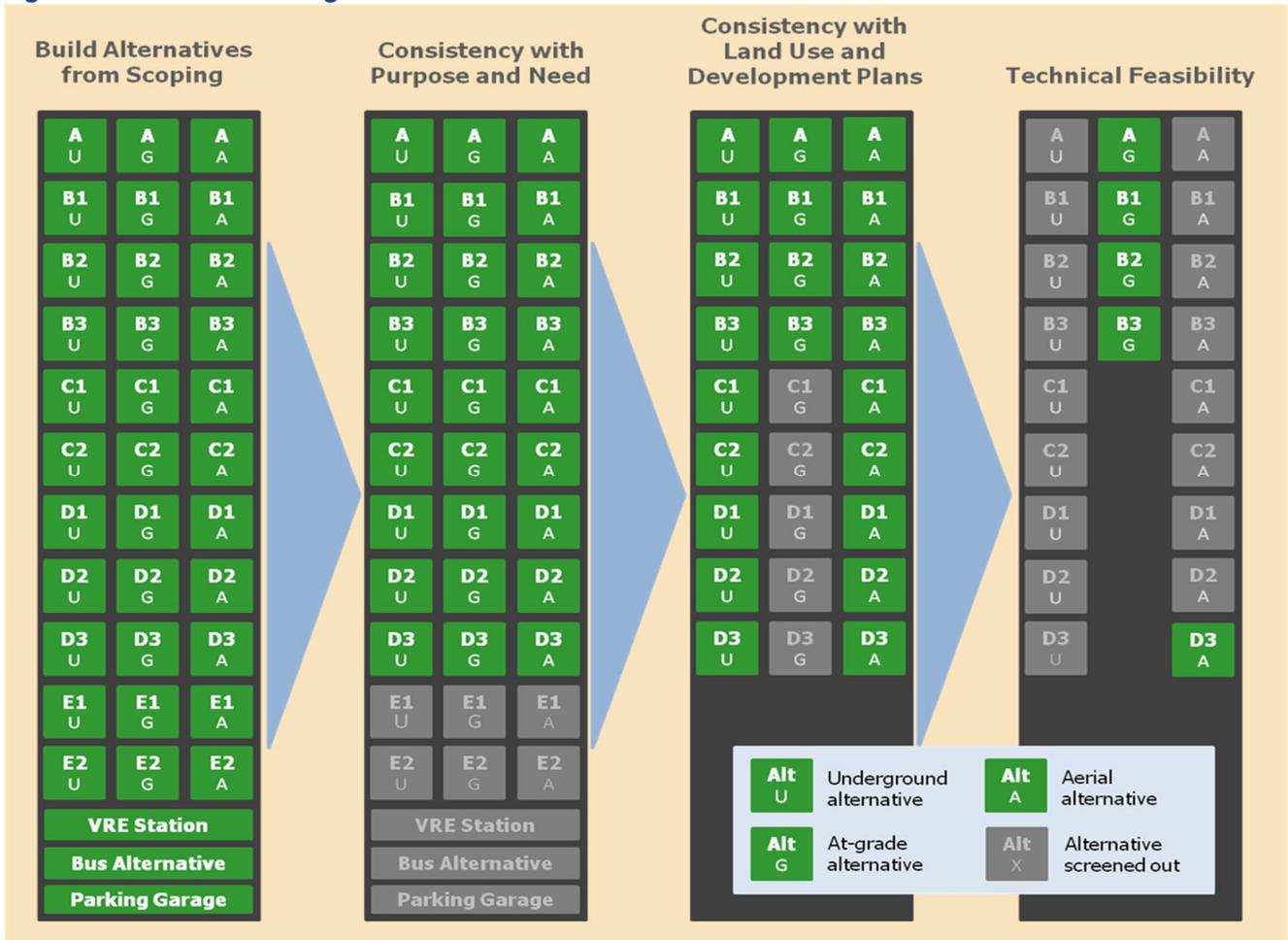
188 An additional five alternatives – at-grade Metrorail station Build Alternatives C1, C2, D1, D2, and D3 – did not  
 189 pass the initial screening because they were not consistent with land use and development plans. These  
 190 alternatives would have made the implementation of a high-density, pedestrian-friendly mixed-use community in  
 191 Potomac Yard impossible by requiring at-grade crossings (bridges or tunnels) over the Metrorail right-of-way.

192 **2.2.2.3 Initial Alternatives Technically Infeasible**

193 Finally, nine alternatives – the aerial and underground options for Alternatives A, B1, B2, B3, C1, C2, D1, and  
 194 D2, and the underground option for Alternative D3 – did not pass the initial screening because they were not  
 195 technically feasible. Technical feasibility criteria included: maximum grade, clearance over the CSXT right-of-  
 196 way, horizontal clearance from the CSXT right-of-way, minimum spacing for constructability between existing  
 197 and new track, and the amount of straight track required for a station.

198 The screening process and results are illustrated in **Figure 2-3**.

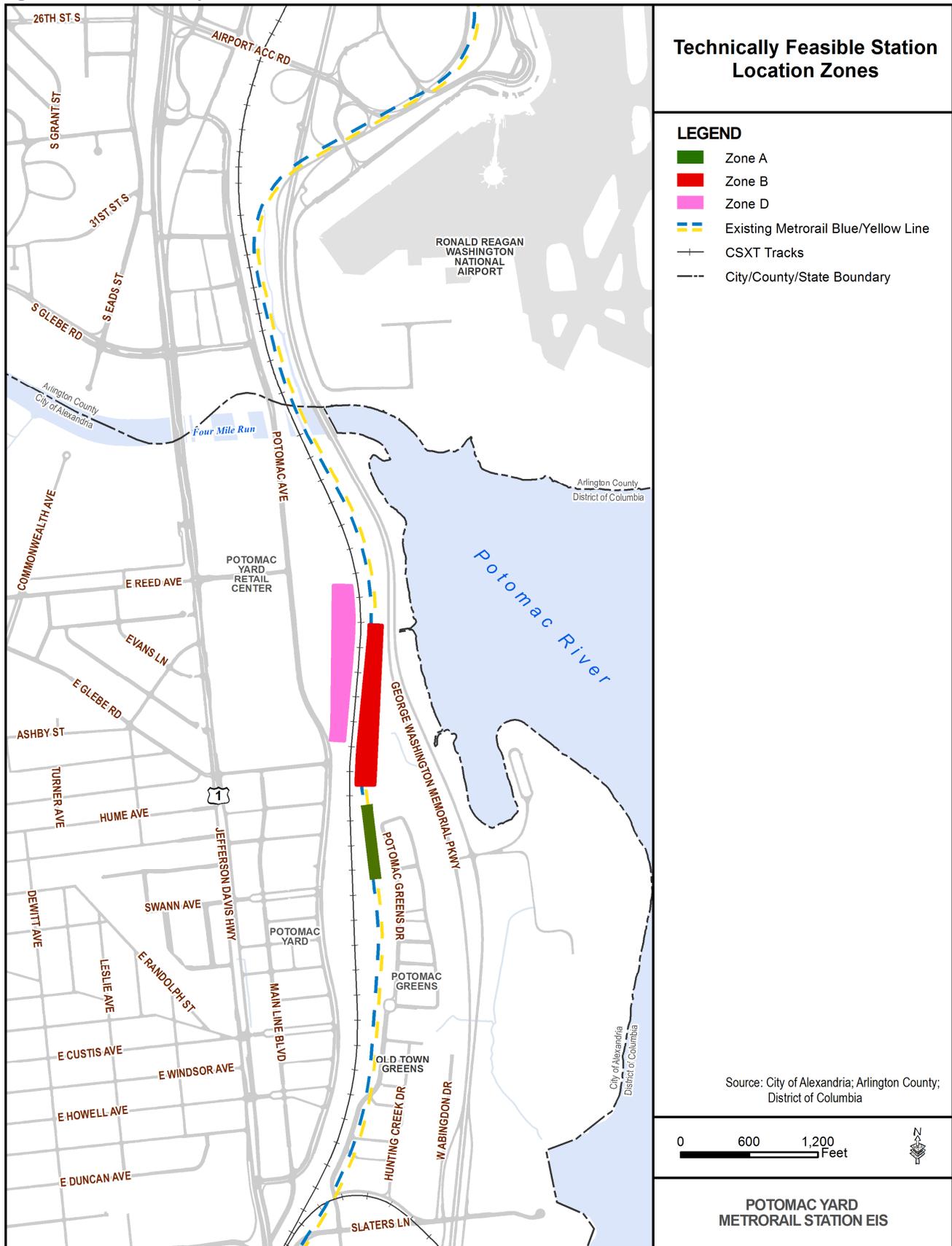
199 **Figure 2-3: Initial Screening Process Results**



200  
201 **2.2.2.4 Refinement of Feasible Alternatives**

202 As a result of the initial screening of alternatives, five Metrorail station Build Alternatives – Alternatives A, B1,  
 203 B2, B3, and D3 – were identified as potentially feasible location options for a Potomac Yard Metrorail Station.  
 204 However, the screening process also determined that there could be numerous variations in the precise layouts  
 205 and locations of these five general alternatives. Therefore, “feasible station zones” that could accommodate  
 206 Alternatives A, B, and D3 were identified for further analysis. These technically feasible station zones are shown  
 207 in **Figure 2-4**. For additional information regarding this portion of the screening process, see the *Initial*  
 208 *Screening of Alternatives* report (October 2011) in Volume II of the Draft EIS.

209 **Figure 2-4: Technically Feasible Station Location Zones**



210

211 After the initial screening, station locations were identified within each of the feasible zones that minimize the  
 212 potential for adverse social, environmental, and economic impacts, while maximizing the potential benefits of a  
 213 Metrorail station. The size, location, and configuration of the station and associated facilities were determined  
 214 for each of the alternatives based on technical considerations to minimize track length and complexity; minimize  
 215 impacts to existing Metrorail facilities; maintain track alignment geometry in accordance with WMATA standards;  
 216 and comply with CSXT standards for vertical and horizontal clearance. In addition to technical considerations,  
 217 the station location for each alternative considered NPS property boundaries, wetlands, approved plans, land  
 218 ownership, construction impacts and access, and potential ridership capture. For additional information, see the  
 219 *Refinement of Alternatives, Constructability, and Construction Staging Report* (March 2012) in Volume II.

220 The station locations within each zone were chosen to maximize access to the planned development in  
 221 Potomac Yard, minimize impacts to the Greens Scenic Area easement to the north of Potomac Greens, and  
 222 minimize impacts to wetlands. The Build Alternatives were developed based on these considerations and are  
 223 described in detail in **Section 2.4**.

### 224 **2.2.3 Alternatives Identified After the EIS Scoping Process**

225 The following three additional alternatives were suggested by cooperating and participating agencies for  
 226 consideration after the EIS scoping process and initial screening of alternatives was complete:

- 227 • **CSXT Realignment Alternative** – defined as moving the existing CSXT tracks further to the west to  
 228 allow a new Metrorail station to be constructed in the existing CSXT right-of-way. The realigned CSXT  
 229 tracks would be either elevated, at grade, or in a tunnel;
- 230 • **New Ferry Service Alternative** – defined as a ferry service along the Potomac River connecting the  
 231 Potomac Yard area to the District of Columbia; and
- 232 • **Streetcar Service Alternative** – defined as a streetcar service along the planned Crystal City/Potomac  
 233 Yard (CCPY) Transitway.

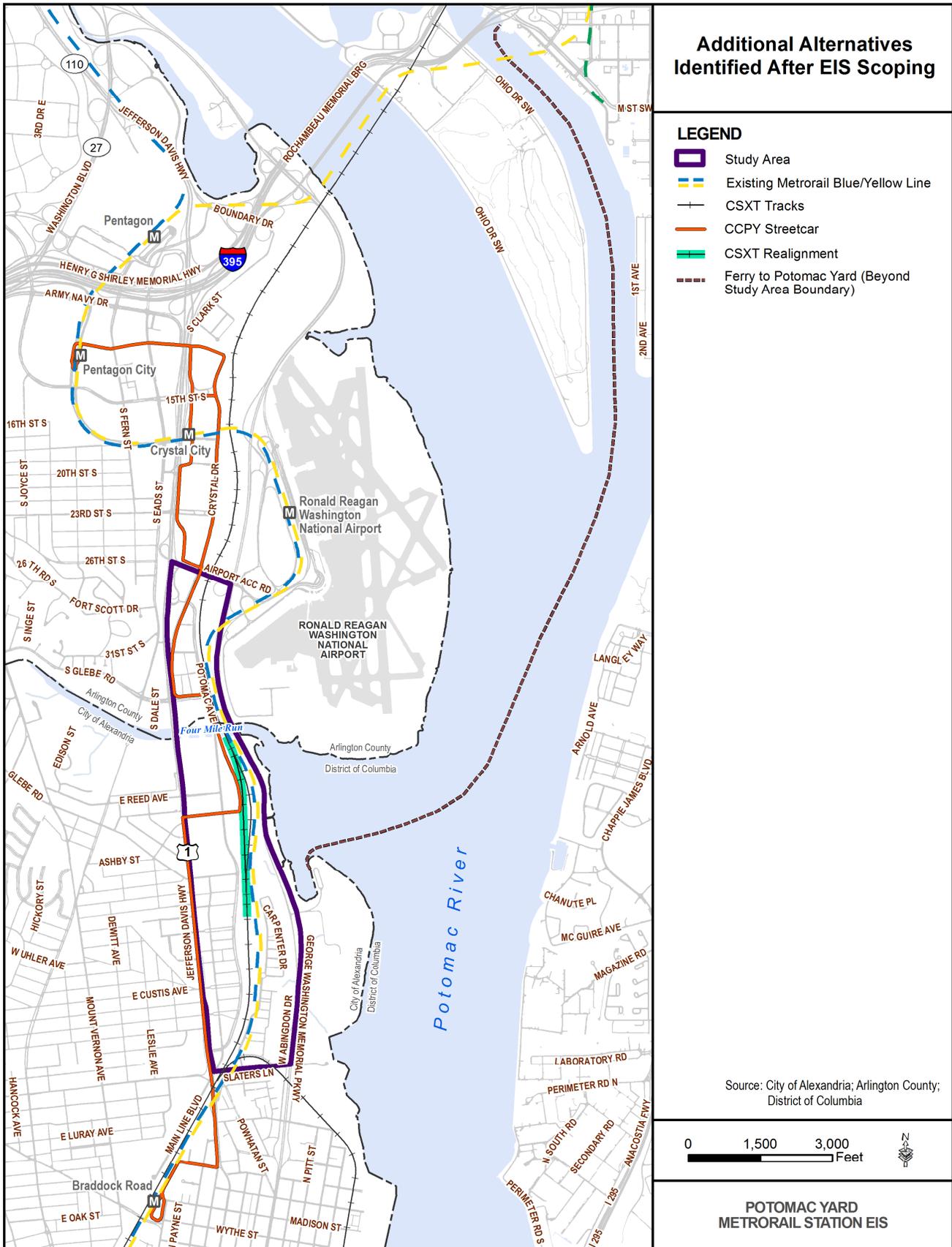
234 These additional alternatives are shown in **Figure 2-5**. The same screening process that was applied to the  
 235 initial set of alternatives during the scoping process was applied to the additional alternatives suggested after  
 236 scoping.

237 The elevated and tunnel options for the CSXT Realignment Alternative were eliminated from further  
 238 consideration based on a review of technical feasibility. With a maximum allowable grade of less than one  
 239 percent for freight rail, the CSXT tunnel option could not pass underneath the Potomac Yard redevelopment  
 240 area and Four Mile Run and reconnect with the existing at-grade CSXT alignment within the project study area.  
 241 Similarly the elevated CSXT Realignment option could not pass over the Potomac Yard redevelopment area  
 242 with adequate vertical clearance of at-grade street connections and be able to reconnect with the existing at-  
 243 grade CSXT alignment within the study area. The at-grade CSXT Realignment option was found to be  
 244 technically feasible and was developed further as a design refinement of Build Alternative B (described in detail  
 245 in **Section 2.4**) to assess its potential to avoid and minimize some of the adverse impacts of Alternative B that  
 246 were found during the environmental impacts evaluation for the EIS.

247 The New Ferry Service Alternative and Streetcar Service Alternative were eliminated from further consideration  
 248 because they do not respond to the project purpose and need. The alternatives provide local transit service that  
 249 connects to regional transit services, such as Metrorail, but do not provide direct regional transit access to and  
 250 from Potomac Yard.

251

252 **Figure 2-5: Additional Alternatives Identified After EIS Scoping**



## 254 2.3 No Build Alternative

255 The No Build Alternative would consist of the existing transportation network, plus all of the committed projects  
 256 within the study area. Analysis of the No Build Alternative is required pursuant to the Council on Environmental  
 257 Quality (CEQ) regulations for implementing NEPA (40 CFR 1502.14). The Draft EIS does not detail the impacts  
 258 of projects included in the No Build Alternative. However, impacts of the No Build Alternative are considered  
 259 collectively as part of the secondary and cumulative effects analysis found in **Section 3.23**. The No Build  
 260 Alternative includes planned projects from the following adopted plans and improvement programs:

- 261 • *Financially Constrained Long-Range Plan for the National Capital Region (CLRP)*, National Capital Region  
 262 Transportation Planning Board, 2014 Update;
- 263 • *FY 2013-2018 Transportation Improvement Program for the Washington Metropolitan Region (TIP)*, National  
 264 Capital Region Transportation Planning Board, adopted 2010;
- 265 • *City of Alexandria FY 2012-2021 Capital Improvement Program (CIP)*, adopted 2011;
- 266 • *Potomac Yard Coordinated Development District Concept Plan*, City of Alexandria, adopted 1999 with  
 267 amendments through 2010;
- 268 • *North Potomac Yard Small Area Plan*, City of Alexandria, adopted by ordinance in 2010; and
- 269 • *Coordinated Development District (CDD) #10 and #19*, City of Alexandria, adopted 2010.

270 **Table 2-1** provides a summary of improvements included in the No Build Alternative. Current and future year  
 271 conditions for the No Build Alternative were used as a basis for identifying the transportation, environmental,  
 272 and community impacts of the proposed Potomac Yard Metrorail Station Build Alternatives.

273 The No Build Alternative would include the completion of the internal street network within Potomac Yard,  
 274 generally from Four Mile Run to Braddock Road, in addition to investments in transit and bicycle/pedestrian  
 275 facilities.

276 Transit investments include the completion of the Arlington County portion of the CCPY Transitway, shown in  
 277 **Figure 2-6**, as well as expansion of local transit service. Local bus service under the No Build Alternative is  
 278 shown in **Table 2-2**. The future internal street network for North Potomac Yard is shown in **Figure 2-6**. The No  
 279 Build Alternative also includes completion of the off-street multi-use trail from Four Mile Run to Braddock Road  
 280 that will enhance access to the primary regional trail network, which serves recreational users and commuters,  
 281 as well as a pedestrian bridge over the Metrorail and CSXT right-of-way between Potomac Greens and  
 282 Potomac Yard.

283 Metrorail service under the No Build Alternative would include the Yellow and Blue Lines, which operate through  
 284 the study area along an alignment parallel to and just east of the CSXT Railroad. The closest Metrorail stations  
 285 to the study area will continue to be the Ronald Reagan Washington National Airport (National Airport) Station  
 286 north of the study area and the Braddock Road Station to the south. The distance between these two existing  
 287 stations is 3.1 miles.

288 Yellow Line trains are scheduled for 6-minute frequencies in the peak hours and 12 to 20 minute frequencies in the  
 289 off-peak hours. Blue Line Trains are scheduled for 12-minute frequencies in the peak hours and 12 to 20 minute  
 290 service in the off-peak hours. The Yellow Line provides service from the Huntington Metrorail Station in Virginia  
 291 to the Fort Totten Metrorail Station in the District of Columbia. During peak hours, some Yellow Line trains  
 292 provide service from the Franconia-Springfield Metrorail Station in Virginia to the Greenbelt Metrorail Station in  
 293 Maryland and some terminate at the Mount Vernon Square Metrorail Station in the District of Columbia. The  
 294 Blue Line provides service from the Franconia-Springfield Metrorail Station in Virginia to the Largo Town Center  
 295 Metrorail Station in Maryland. Yellow and Blue Line Service runs from the National Airport and Braddock Road  
 296 Stations starting at approximately 5:00 am weekdays, and at approximately 7:00 am on Saturday and Sunday.  
 297 The last train leaves the National Airport and Braddock Road Stations at approximately 12:30 am Sunday  
 298 through Thursday, and at approximately 2:30 am on Friday and Saturday. Metrorail fares are distance-based,  
 299 and currently range from \$1.75 to \$3.60 in the off-peak, and from \$2.15 to \$5.90 in the peak. An additional \$1  
 300 surcharge is added to these fares for riders using paper farecards.

301 The CSXT rail corridor is expected to expand track capacity from three tracks to four tracks through the  
 302 Potomac Yard area (known as the "Long Bridge Corridor"). The *VRE System Plan 2040 Study* identifies the  
 303 expansion as critical to obtain higher volumes of rail traffic and more reliable operations in the future, as two  
 304 tracks could be dedicated for passenger trains and two tracks for freight trains. The Long Bridge Corridor track

305 expansion is anticipated to be completed between 2021-2030 within the existing CSXT right-of-way. The *VRE*  
 306 *System Plan 2040 Study* was approved as part of the October 2014 CLRP Update.

307 The Long Bridge Corridor is also being assessed as part of the *Long Bridge Study* by the District Department of  
 308 Transportation (DDOT) in cooperation with the Federal Railroad Administration (FRA) of the freight and  
 309 passenger rail bridge between the District of Columbia and Virginia. Although the Long Bridge project area  
 310 extends into Potomac Yard, the improvements are largely planned at the bridge itself and along the bridge  
 311 approach north of Crystal City. The final results of the *Long Bridge Study* are anticipated by late 2015.

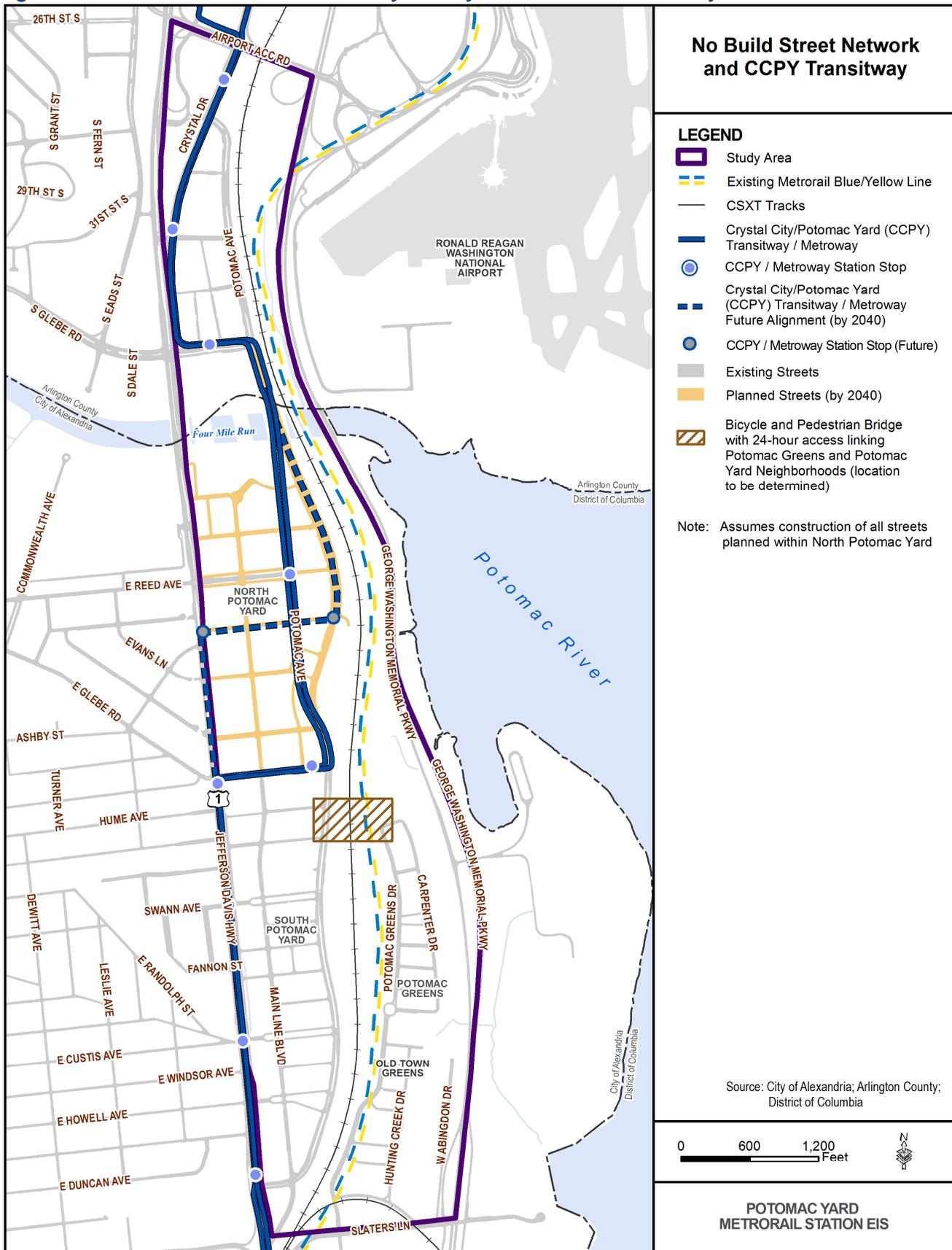
312 **Table 2-1: Projects Included in No Build Alternative**

Project	Location	Improvements	Reference
<b>Transit infrastructure improvements</b>			
Crystal City/ Potomac Yard (CCPY) Transitway	Between Braddock Road Metrorail Station and Pentagon City Metrorail Station	Construction of a two-lane transitway to provide high-quality, high-capacity transit service through Potomac Yard and between the Pentagon City, Crystal City, and Braddock Road Metrorail Stations. The portion of the Transitway within the City of Alexandria has been completed.	CLRP, TIP, CIP
Local and Circulator Transit Service	North Potomac Yard	Transit service expansion providing service between Potomac Yard and existing neighborhoods and other destinations.	CIP, NPYSAP
<b>Roadway infrastructure improvements</b>			
U.S. Route 1 Widening	From Monroe Avenue Bridge to Wesmond Drive	Widening to accommodate transit lanes to support the CCPY Transitway. Completed	CIP
Potomac Yard Spine Road	From U.S. Route 1 to Crystal Drive	Construction of 4-lane Potomac Yard Spine Road (Potomac Avenue). Completed.	CLRP
Internal Street Network	South Potomac Yard (between U.S. Route 1 and Potomac Avenue)	Construction of an interconnected network of streets, including the development/extension of E. Glebe Road, Swann Avenue, E. Custis Avenue, E. Howell Avenue; and construction of Main Line Boulevard and Maskell Street. Completed.	SAP
	North Potomac Yard (between U.S. Route 1 and Potomac Avenue)	Construction of an interconnected network of streets, including the development/extension of E. Reed Avenue, Evans Lane, and Main Line Boulevard.	NPYSAP
<b>Non-motorized infrastructure improvements</b>			
Bicycle/Pedestrian Facilities	Potomac Yard, alongside the CSXT right-of-way (from Braddock Road to Four Mile Run)	Construction of linear Potomac Yard Park and multi-use trail from Braddock Road to Four Mile Run. The portion of the multi-use trail from Four Mile Run to the intersection of Potomac Avenue and Main Line Boulevard has already been completed. The remainder of the trail is anticipated to be complete by 2016.	SAP, NPYSAP
	Bicycle and pedestrian bridge connecting Potomac Greens and Potomac Yard neighborhoods	Construction of a bicycle and pedestrian bridge over the existing CSXT Railroad and Metrorail Line providing 24-hour access between Potomac Greens and North and/or South Potomac Yard neighborhoods	SAP
<b>Railroad Improvements</b>			
VRE System Plan	Multiple locations, including the Long Bridge Corridor (between southwest Washington DC and the VRE Station In Alexandria, Virginia)	Long Bridge Corridor updates include adding track capacity to four tracks from current three tracks.	CLRP

313 References:

- 314 CIP = *City of Alexandria FY 2015-2024 Capital Improvement Program*, City of Alexandria, 2014;
- 315 CLRP = *Financially Constrained Long-Range Plan for the National Capital Region*, 2014 Update, National Capital Region Transportation
- 316 Planning Board, 2014;
- 317 NPYSAP = *North Potomac Yard Small Area Plan*, City of Alexandria, 2010;
- 318 SAP = *Potomac Yard/Potomac Greens Small Area Plan*, City of Alexandria, 1992 (revised 1999 with amendments through 2010); and
- 319 TIP = *FY 2011-2016 Transportation Improvement Program for the Washington Metropolitan Region*, National Capital Region Transportation
- 320 Planning Board, 2010.

321 **Figure 2-6: No Build Street Network and Crystal City/Potomac Yard Transitway**



322

323

**Table 2-2: No Build Alternative Bus Service**

Route	Primary Alignment in Potomac Yard Area	Span of Service	Service Headway (Minutes)
<b>Metrobus Services</b>			
<b>9A</b>	U.S. Route 1	Weekdays: 4:30 a.m. to 1:30 a.m. Saturday: 5:30 a.m. to 1:30 a.m. Sunday: 5:00 a.m. to 1:00 a.m.	Weekday Peak: 30 Weekday Off-Peak: 30 Saturday: 30 Sunday: 40
<b>10S</b>	U.S. Route 1	Morning: 6:45 a.m. to 8:15 a.m. Afternoon: 4:30 p.m. to 6:00 p.m. ( <i>Weekday peak periods and reverse direction only</i> )	Morning: 3 trips ( <i>southbound only</i> ) Afternoon: 3 trips ( <i>northbound only</i> )
<b>11Y</b>	Express Line along GWMP. Only one stop at Slaters Lane/ Abingdon Drive in vicinity of study area.	Weekdays: 6:40 a.m. to 9:00 a.m. and 4:10 p.m. to 7:25 p.m.	Weekday Peak: 30
<b>Metroway</b>	CCPY Transitway	Monday – Thursday: 5:30 a.m. to 10:20 p.m. Friday: 5:30 a.m. to 12:20 a.m. Saturday: 6:30 a.m. to 12:20 a.m. Sunday: 7:30 a.m. to 10:20 p.m.	Weekday Peak: 12 along full route; 6 between Crystal City Metro and S. Glebe Road Weekday Off-Peak: 12-15 Weekend: 20 (all day Saturday and Sunday)
<b>DASH Services</b>			
<b>AT 4</b>	Slaters Lane	Weekdays: 5:45 a.m. to 10:30 p.m. Saturday: 7:30 a.m. to 9:30 p.m. Sunday: 9:00 a.m. to 7:00 p.m.	Weekday Peak: 20 Weekday Off-Peak: 60 Saturday: 60 Sunday: 60
<b>AT 9</b>	E Glebe Road	Weekdays: 6:30 a.m. to 10:00 p.m. Saturday: 6:45 a.m. to 10:30 p.m.	Weekdays: 30 Saturday: 60
<b>AT 10</b>	E Reed Avenue	Weekdays: 6:30 a.m. to 11:00 p.m. Saturday: 7:00 a.m. to 11:00 p.m. Sunday: 9:00 a.m. to 7:00 p.m.	Weekdays: 30 Saturday: 30 Sunday: 60

Source: WMATA published schedules, dated March and October 2014, and Alexandria Transit Company published schedules, July 2014.

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325

## 326 2.4 Build Alternatives

327 This section describes the three Build Alternatives and B-CSX Design Option analyzed in the EIS. Each  
 328 description includes the conceptual station layout (platforms and grade), necessary track work improvements,  
 329 pedestrian access facilities, and additional structures (bridges or retaining walls) required to construct the  
 330 station. **Figure 2-7** shows the track alignment, station location, facilities, and construction access areas  
 331 associated with the three Build Alternatives and B-CSX Design Option. The Build Alternatives are summarized  
 332 in **Table 2-3**.

333 The three Build Alternatives and B-CSX Design Option were designed to include standard station elements for  
 334 an urban Metrorail station without Park & Ride or off-street Kiss & Ride facilities. Build Alternatives A and B each  
 335 include two pedestrian access bridges over the CSXT right-of-way, one at each end of the station. The City of  
 336 Alexandria is required to construct a bicycle and pedestrian bridge over the CSXT Railroad and Metrorail Line to  
 337 provide 24-hour access between the Potomac Greens and Potomac Yard neighborhoods whether or not a  
 338 Metrorail station is built in this area.

339 • Build Alternatives A and B provide an opportunity to utilize one of the station's access bridges to provide  
 340 this required pedestrian and bicycle connection and integrate the bridge into the design of the Metrorail  
 341 station. The northern bridge of Build Alternative A and the southern bridge of Build Alternative B would  
 342 provide 24-hour pedestrian/bicycle access between Potomac Yard and the Potomac Greens  
 343 neighborhood.

344 • A design refinement of Build Alternative B, referred to as B-CSX Design Option, would shift the CSXT  
 345 tracks and provide two pedestrian access bridges over the CSXT right-of-way, one at each end of the  
 346 station. B-CSX Design Option and Build Alternative D are located too far away from the Potomac  
 347 Greens neighborhood to integrate the pedestrian and bicycle bridge into the design of the station.  
 348 Pedestrian access would not be provided to Potomac Greens under the B-CSX Design Option as part of  
 349 this project, but would be developed as a separate project by the City of Alexandria. Build Alternative D  
 350 does not include a pedestrian/bicycle bridge over the CSXT right-of-way between Potomac Greens and  
 351 Potomac Yard; this would need to be completed as a separate project by the City of Alexandria.

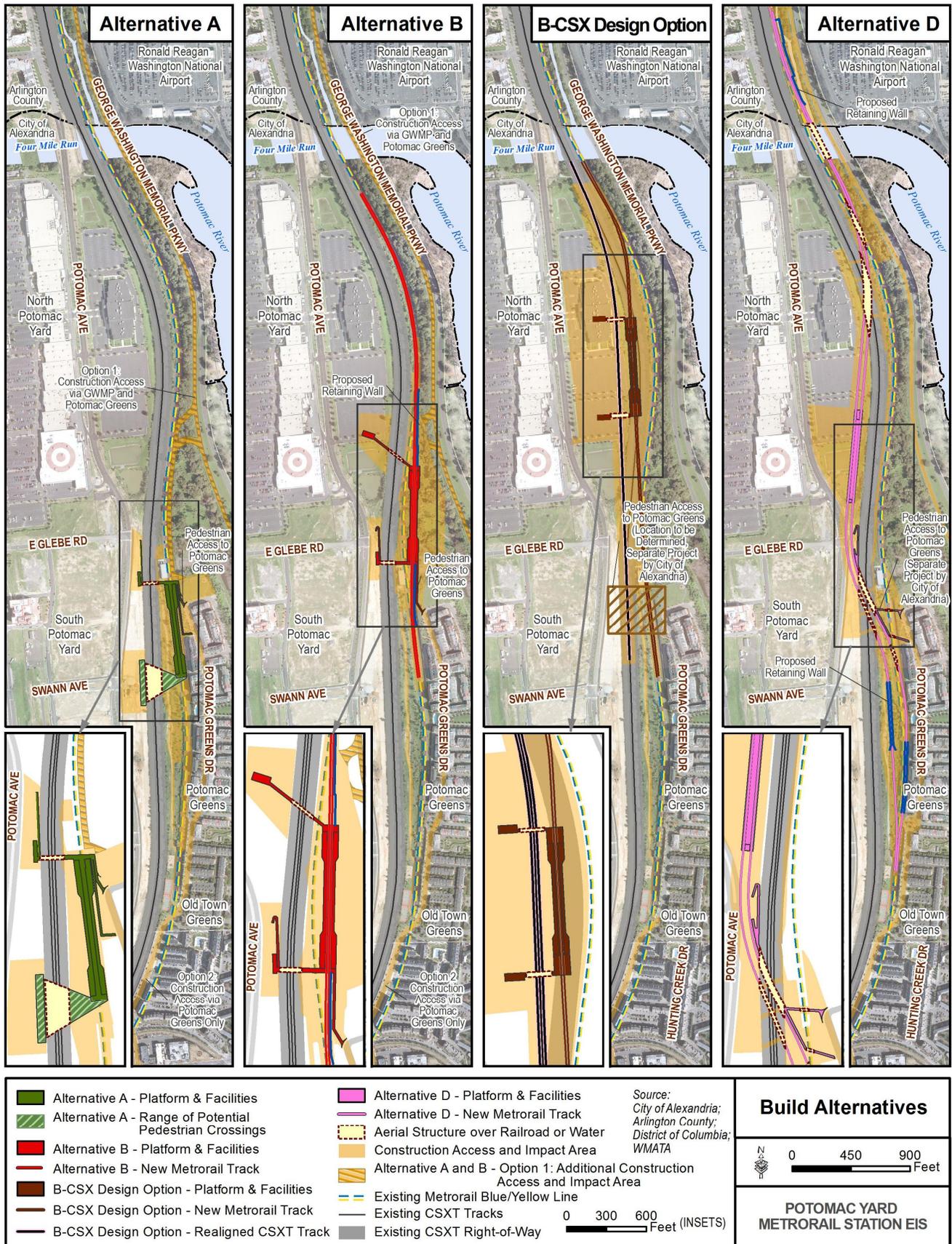
352 For each station, passengers would enter the station at the mezzanine level, which would include a station  
 353 manager's kiosk, fare gates, and fare vendors. Service and ancillary rooms required for electrical, mechanical,  
 354 and plumbing services would be located between the mezzanine and platform levels for Build Alternatives A and  
 355 B and B-CSX Design Option and at the same level as the mezzanine for Build Alternative D.

356 The Metrorail operating plan would be the same for the three Build Alternatives and B-CSX Design Option, and  
 357 would differ from the No Build Alternative only in the addition of a station at Potomac Yard. As in the No Build  
 358 Alternative, the combined peak headways for the Blue and Yellow Lines would be 3.5 minutes, with combined  
 359 headways of 6 minutes in the off-peak. Service would run from Potomac Yard Metrorail station starting at  
 360 approximately 5:00 am weekdays, and at approximately 7:00 am on Saturday and Sunday. The last train would  
 361 leave Potomac Yard Metrorail station at approximately 12:30 am Sunday through Thursday and at  
 362 approximately 2:30 am on Friday and Saturday. Fares would be consistent with the rest of the Metrorail system.  
 363 Metrorail fares are distance-based, and currently range from \$1.75 to \$3.60 in the off-peak and from \$2.15 to  
 364 \$5.90 in the peak.

365 No new bus routes, in addition to those included in the No Build Alternative, would be added as part of the Build  
 366 Alternatives. As described for the No Build Alternative in **Section 2.3**, new planned services, such as the  
 367 completion of the CCPY Transitway, are expected to be in place, as are planned modifications to existing routes  
 368 that are intended to serve the new development and street pattern in Potomac Yard. Buses would use stops  
 369 along the CCPY Transitway route, or other on-street stops, to provide transfer service for the Potomac Yard  
 370 Metrorail Station. No off-street bus facilities would be added as part of the Build Alternatives. No modifications to  
 371 bus routes outside of the Potomac Yard redevelopment area are assumed for the Build Alternatives and Design  
 372 Option.

373

374 Figure 2-7: Build Alternatives



376

**Table 2-3: Build Alternatives Characteristics Summary**

Alternative	Grade and Layout of Station	Track Work	Facilities for Station Access	Additional Structures Required
<b>Build Alternative A</b>	At-grade, side platforms	Minimal track work	Two pedestrian bridges over CSXT right-of-way; access to Potomac Greens via walkway	None
<b>Build Alternative B</b>	At-grade, side platforms	Moderate track work	Two pedestrian bridges over CSXT right-of-way; access to Potomac Greens via walkway	Structures (retaining wall) to support new track and station
<b>B-CSX Design Option</b>	At-grade, side platforms	Major track work, including realignment of CSXT tracks	Two pedestrian bridges over CSXT right-of-way	None
<b>Build Alternative D</b>	Aerial, center platform	Major track work	None	Two aerial structures over CSXT right-of-way, one Metrorail bridge over Four Mile Run, aerial track and supports, and retaining wall replacement on the east and west sides of the tracks north of the existing Metrorail portal. New structures would pass over the existing Metrorail tracks, which would be removed following construction.

Note: track work for Build Alternatives B and D assumes existing Blue and Yellow Line Metrorail track would be removed where the track is realigned.

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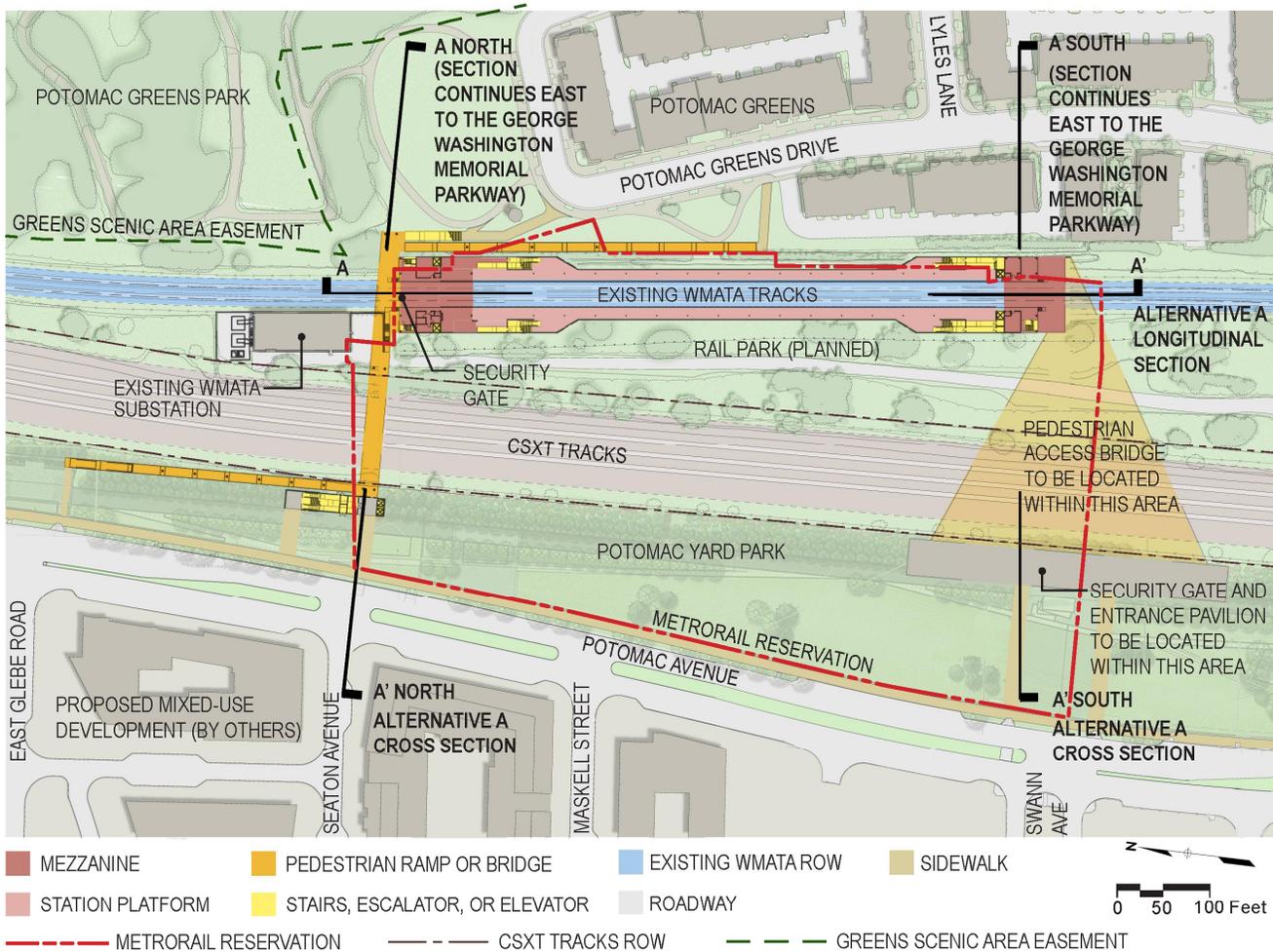
379 **2.4.1 Build Alternative A**

380 Build Alternative A would be located on the existing Metrorail tracks between the CSXT Railroad tracks and the  
 381 north end of the Potomac Greens neighborhood, mostly within the “Metrorail Reservation” easement identified  
 382 area as part of the PYGSAP. The station would be at-grade with a side platform layout. Additional station  
 383 facilities would include two pedestrian bridges from the station over the CSXT right-of-way to the planned  
 384 development in Potomac Yard. The bridge at the northern end of the station would provide 24-hour  
 385 pedestrian/bicycle access between Potomac Yard and the Potomac Greens neighborhood. The exact location  
 386 and configuration of the pedestrian access from the southern end of the Metrorail station to Potomac Yard is still  
 387 under development; thus, **Figure 2-7** above and other plans of Build Alternative A in the Draft EIS depict the  
 388 general area within which the pedestrian bridge would be located.

389 Build Alternative A would include construction of a double crossover located approximately 900 feet south of the  
 390 station, which would allow trains to switch from one track to the other when necessary for operations.

391 **Figure 2-8** shows the site plan for Build Alternative A. The cross sections and longitudinal section for Build  
 392 Alternative A are shown in **Figure 2-9**.

393 **Figure 2-8: Build Alternative A Plan View**

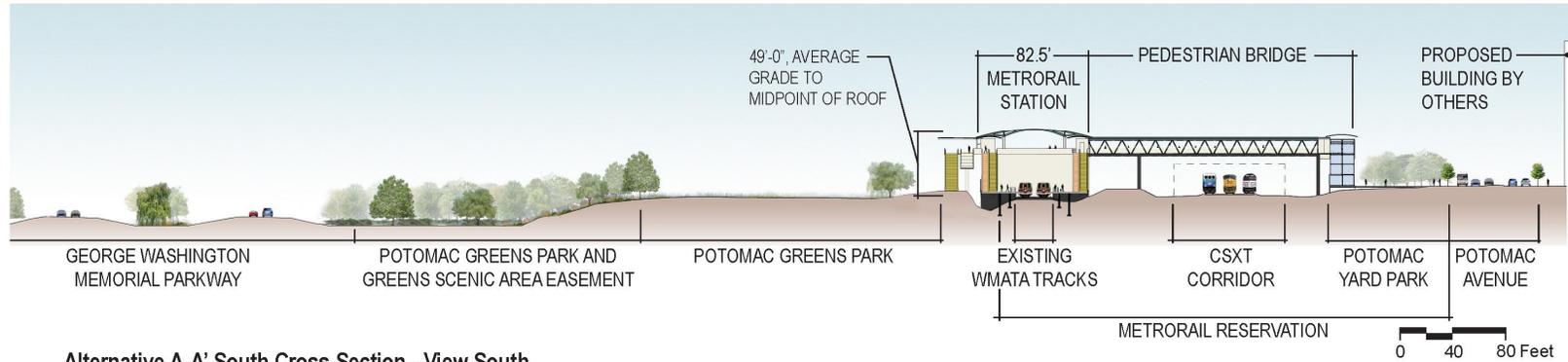


NOTE: THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY. THE FINAL DESIGN OF THE STATION, AMENDMENTS TO OPEN SPACE, AND THE PEDESTRIAN BRIDGES WILL OCCUR AS PART OF THE DESIGN-BUILD PROCESS AND WILL REQUIRE ALL APPLICABLE WMATA AND CITY APPROVALS.

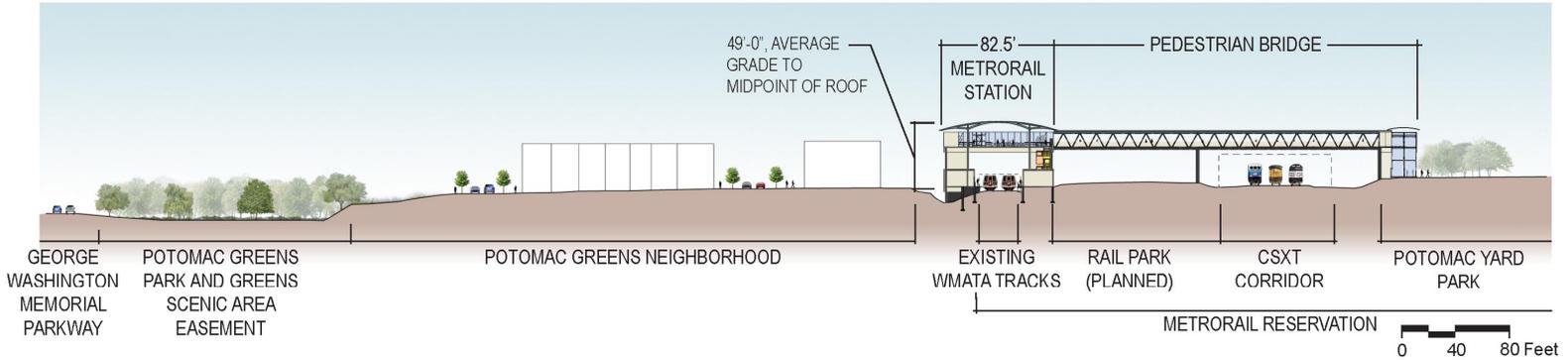
394

395 **Figure 2-9: Build Alternative A Cross Sections and Longitudinal Section**

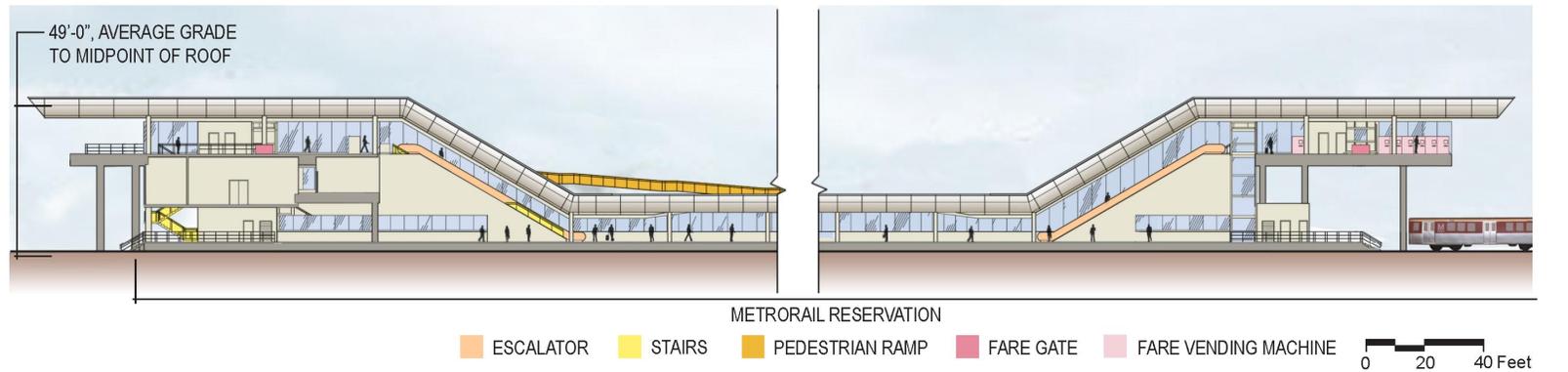
**Alternative A-A' North Cross Section - View South**



**Alternative A-A' South Cross Section - View South**



**Alternative A-A' Longitudinal Section - View East**



NOTE: SECTIONS DEPICT CONCEPTUAL DESIGNS. ALL DESIGNS OF THE STATION ARE SUBJECT TO ALL APPLICABLE WMATA AND CITY APPROVALS.

### 397 2.4.1.1 Construction Staging and Access

398 To construct Build Alternative A, access would be required to the areas immediately west and east of the  
 399 existing Metrorail tracks. On the east side of the existing Metrorail tracks, access would be provided through one  
 400 of two options:

- 401 • **Option 1:** Option 1 would include access to the area east of the existing Metrorail tracks provided via a  
 402 temporary construction access driveway from the GWMP through Potomac Greens Park, as shown in  
 403 **Figure 2-10.** Construction vehicles would use the southbound GWMP roadway from the Airport Access  
 404 Road to Slaters Lane (1.7 miles). Additional access would be provided through the residential areas of  
 405 Potomac Greens and Old Town Greens via the entire length of Potomac Greens Drive (0.7 mile);  
 406 construction vehicles would access this area from U.S. Route 1.
- 407 • **Option 2:** Option 2 would only include access to the area east of the existing Metrorail tracks through  
 408 the residential areas of Potomac Greens and Old Town Greens via the entire length of Potomac Greens  
 409 Drive (0.7 mile); construction vehicles would access this area from U.S. Route 1.

410 Both options would require access on the west side of the existing Metrorail alignment; temporary construction  
 411 access would be provided utilizing the access road through the Rail Park to the WMATA traction power  
 412 substation (0.5 mile), crossing over the existing Metrorail alignment at the tennis court area of Old Town Greens  
 413 (where Metrorail begins to travel below-grade). Access would also be required west of the CSXT right-of-way in  
 414 Potomac Yard Park to construct landings and vertical circulation elements (escalators, elevators, and ramp) for  
 415 the pedestrian bridges. Access would be provided via Potomac Avenue. Construction vehicles would use U.S.  
 416 Route 1 to reach the local access routes described above.

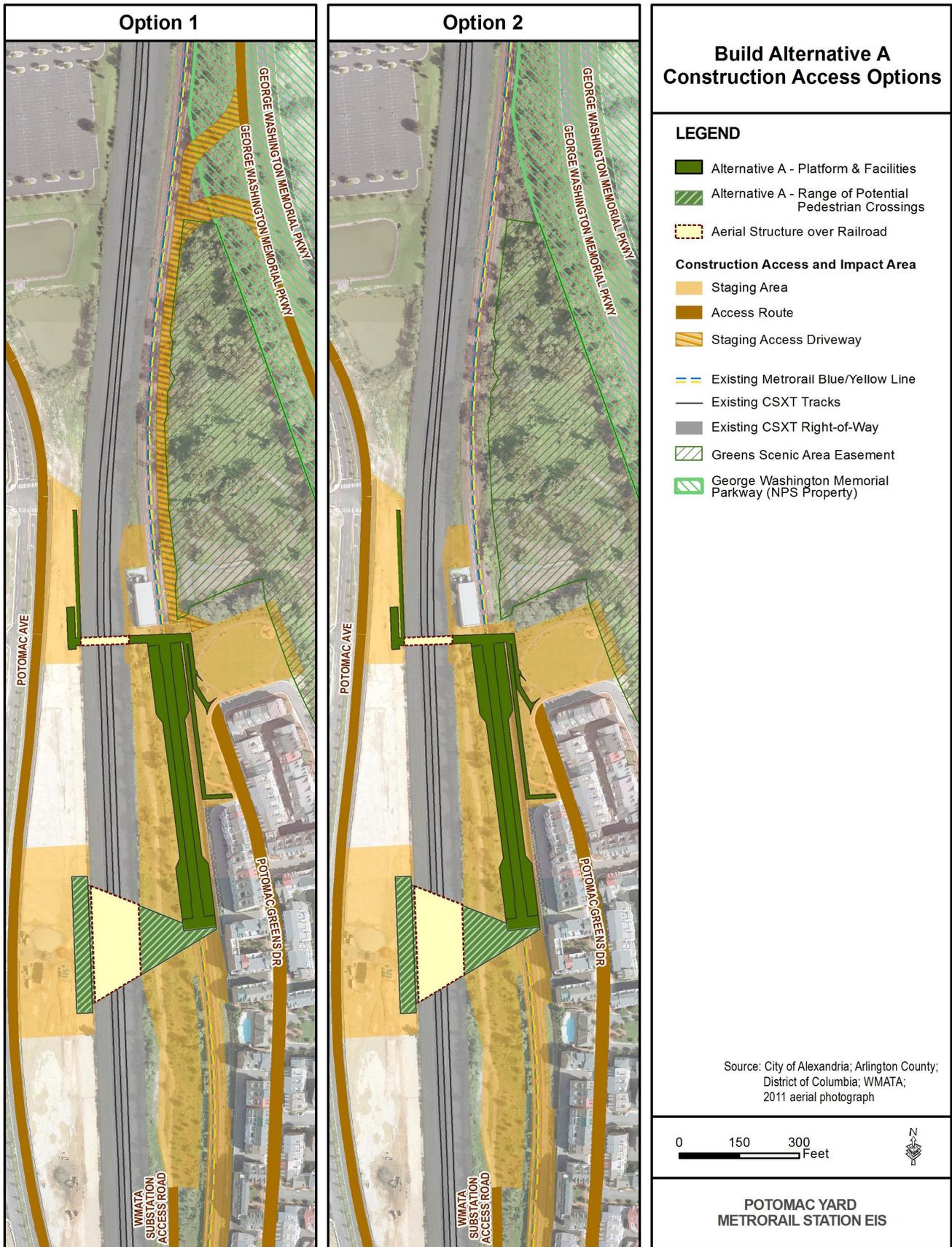
417 Commercial vehicles are prohibited from the GWMP under *NPS Management Policies 2006* (9.2.1.2.1) and  
 418 Federal regulations (36 CFR 5.6). The NPS policies state that "commercial traffic will be prohibited on roads  
 419 within parks, except for the purpose of serving park visitors and park operations (9.2.1.2.1)." If access to private  
 420 lands is otherwise not available, the park Superintendent has the discretion to issue permits for commercial  
 421 vehicles. The proposed construction project area for Build Alternative A is accessible from locations other than  
 422 the GWMP. However, since potential impacts would occur to residential communities at these other locations,  
 423 construction access from the GWMP was also studied as an option in the Draft EIS.

424 Discussions are ongoing regarding the location of construction staging areas and have yet to be resolved.  
 425 Preliminary staging areas have been identified. For Option 1, preliminary design has construction staging  
 426 occupying 8.1 acres, while Option 2 would occupy 7.0 acres. More detail on construction staging would become  
 427 available as discussions with property owners continue through the Final EIS and through final engineering  
 428 design prior to construction.

429

430

431 Figure 2-10: Build Alternative A Construction Staging and Access Options



432

433 **2.4.2 Build Alternative B**

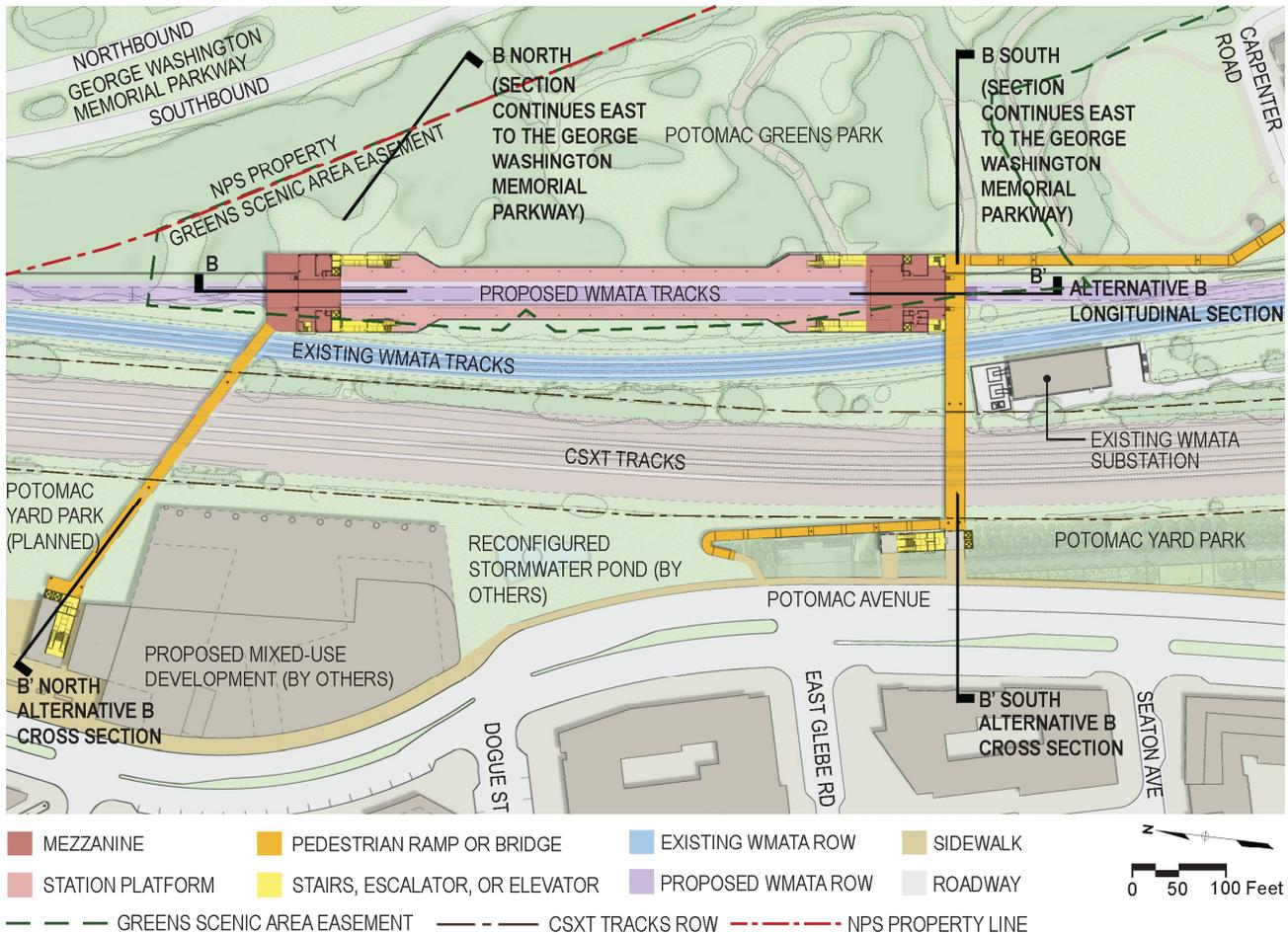
434 Build Alternative B would be located between the GWMP and the CSXT right-of-way, north of the Potomac  
 435 Greens neighborhood, partially within Potomac Greens Park and the Greens Scenic Area easement, and east of  
 436 the existing Potomac Yard Shopping Center (North Potomac Yard) and the CSXT right-of-way. The station  
 437 would be at-grade with a side platform layout. Additional station facilities would include two pedestrian bridges  
 438 from the station over the CSXT right-of-way to the planned development in Potomac Yard. The bridge at the  
 439 southern end of the station would provide 24-hour pedestrian/bicycle access between Potomac Yard and the  
 440 Potomac Greens neighborhood.

441 **Figure 2-11** shows the site plan for Build Alternative B. The cross sections and longitudinal section for Build  
 442 Alternative B are shown in **Figure 2-12**.

443 Build Alternative B would require the realignment of approximately 650 feet of existing track, as well as the  
 444 installation of approximately 1,450 feet of new track to provide a straight section of track for the proposed station  
 445 location and meet other WMATA track design requirements. Special track work – a double crossover – would be  
 446 required approximately 100 feet north of the station.

447 The new track and station would be built on retained fill, and a new retaining wall would be constructed on the  
 448 east side of the track and station to support the structures. The station would be located partly in existing  
 449 wetlands.

450 **Figure 2-11: Build Alternative B Plan View**



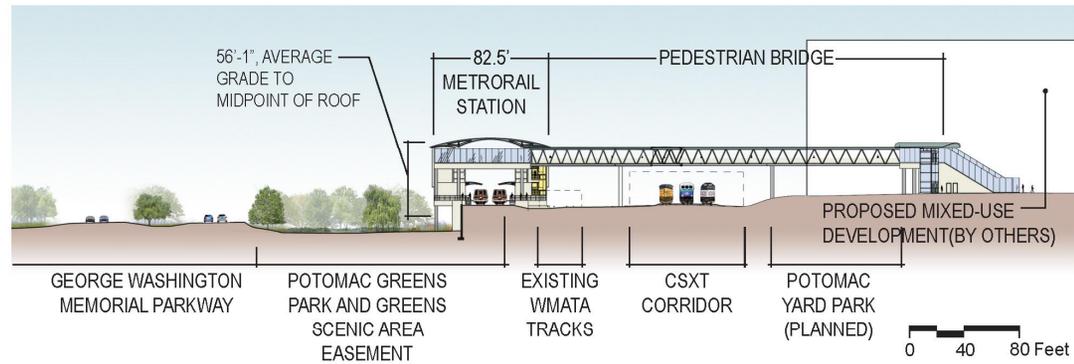
NOTE: THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY. THE FINAL DESIGN OF THE STATION, AMENDMENTS TO OPEN SPACE, AND THE PEDESTRIAN BRIDGES WILL OCCUR AS PART OF THE DESIGN-BUILD PROCESS AND WILL REQUIRE ALL APPLICABLE WMATA AND CITY APPROVALS.

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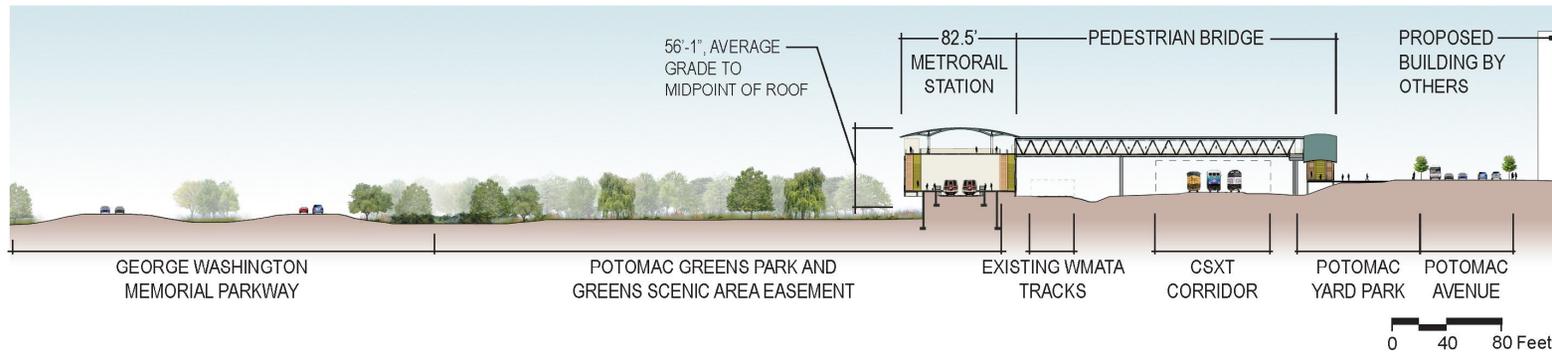
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453 **Figure 2-12: Build Alternative B Cross Sections and Longitudinal Section**

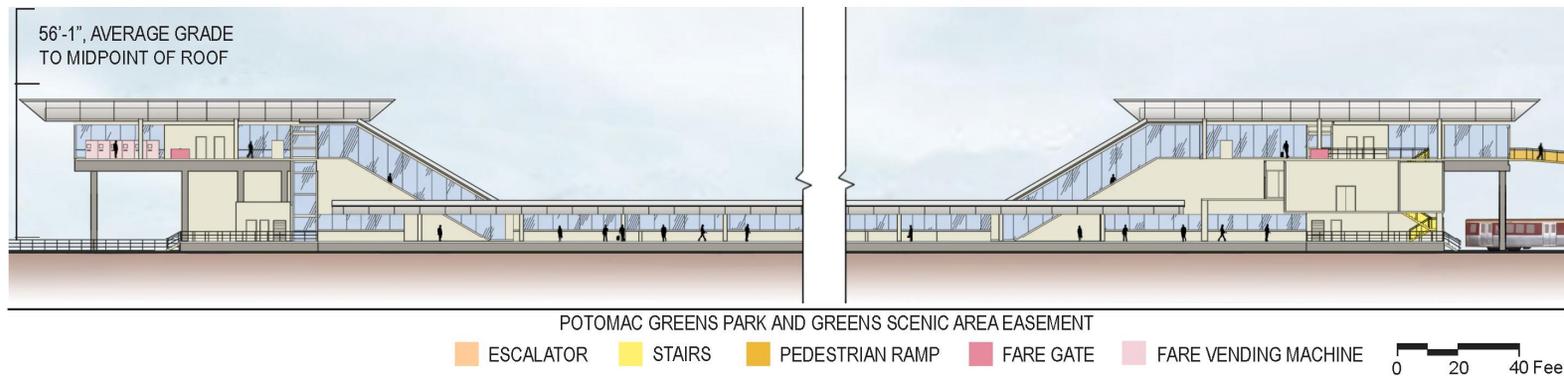
**Alternative B-B' North Cross Section - View South**



**Alternative B-B' South Cross Section - View South**



**Alternative B-B' Longitudinal Section - View East**



454 NOTE: SECTIONS DEPICT CONCEPTUAL DESIGNS. ALL DESIGNS OF THE STATION ARE SUBJECT TO ALL APPLICABLE WMATA AND CITY APPROVALS.

#### 455 2.4.2.1 Construction Staging and Access

456 Build Alternative B would require realignment of existing track, construction of new track, and construction of the  
 457 proposed station in the vicinity of existing Metrorail tracks. To construct Build Alternative B, access would be  
 458 required to the area east of the existing Metrorail tracks. Construction access to the site would be provided by  
 459 one of two options:

- 460 • **Option 1:** Option 1 would include access to the area east of the existing Metrorail tracks provided via a  
 461 temporary construction access driveway from the GWMP, as shown in **Figure 2-13**. Construction  
 462 vehicles would use the southbound GWMP roadway from the Airport Access Road to Slaters Lane (1.7  
 463 miles). Additional access would be provided through the residential areas of Potomac Greens and Old  
 464 Town Greens via the entire length of Potomac Greens Drive (0.7 mile); construction vehicles would  
 465 access this area from U.S. Route 1.
- 466 • **Option 2:** Option 2 would only include access to the area east of the existing Metrorail tracks through  
 467 the residential areas of Potomac Greens and Old Town Greens via the entire length of Potomac Greens  
 468 Drive (0.7 mile); construction vehicles would access this area from U.S. Route 1.

469 Both options would require access to the area west of the existing Metrorail tracks for some construction tasks,  
 470 including the construction of the two pedestrian bridges; the access would utilize the access road through the  
 471 Rail Park to the WMATA traction power substation (0.5 mile), crossing the existing Metrorail alignment at the  
 472 tennis court area of Old Town Greens (where Metrorail begins to travel below-grade). A construction access  
 473 easement would also be required across a portion of the CSXT right-of-way so that construction vehicles  
 474 utilizing the Rail Park roadway can get around the west side of the existing traction power substation and be  
 475 able to access the area north of the substation between the existing CSXT and Metrorail tracks. The easement  
 476 would not cross CSXT tracks.

477 Although Build Alternative B is located east of the CSXT right-of-way, access would be required west of the  
 478 CSXT right-of-way in Potomac Yard Park to construct landings and vertical circulation elements (escalators,  
 479 elevators, and ramp) for the pedestrian bridges. Access would be provided via Potomac Avenue and U.S. Route  
 480 1.

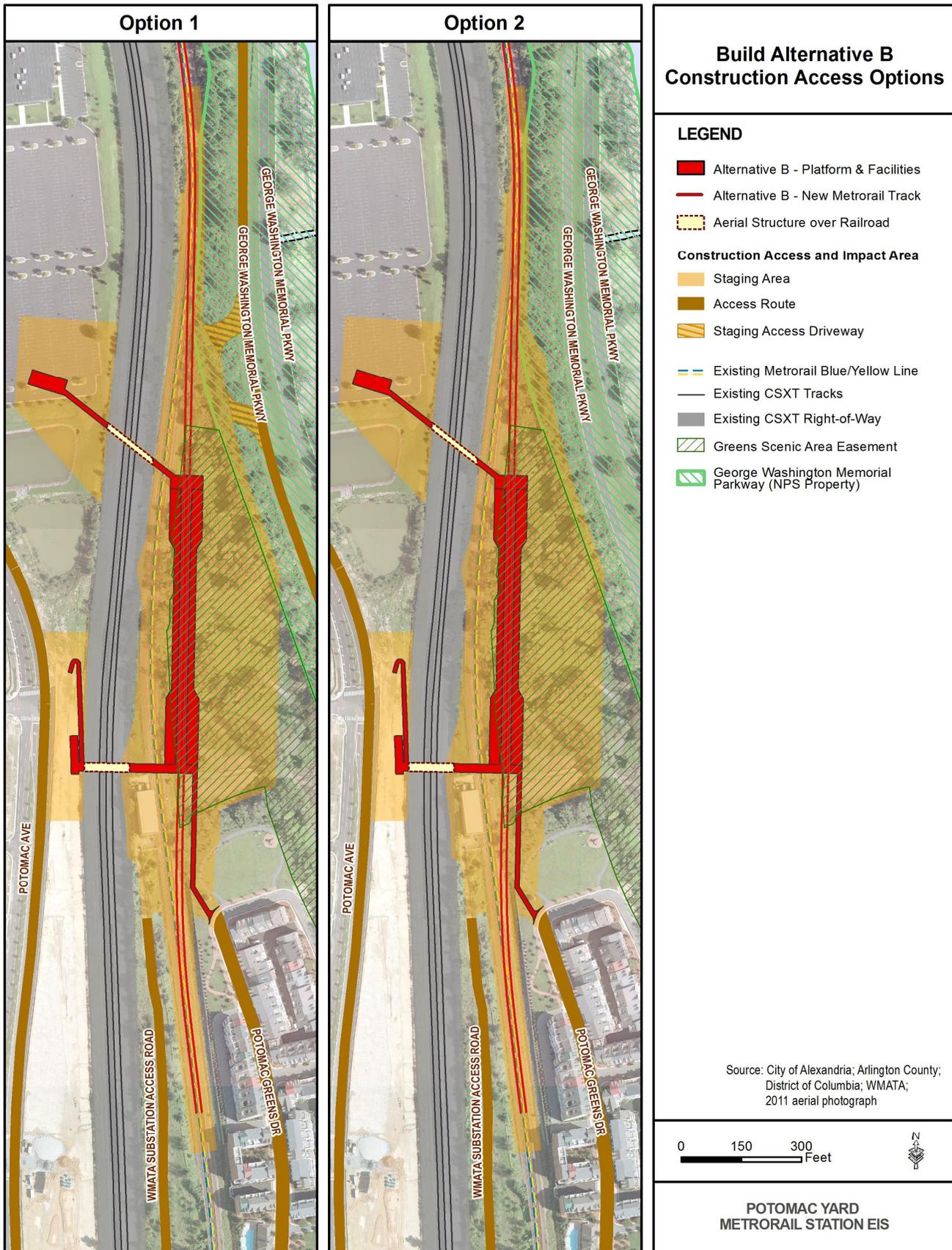
481 Commercial vehicles are prohibited from the GWMP under *NPS Management Policies 2006* (9.2.1.2.1) and  
 482 Federal regulations (36 CFR 5.6). The NPS policies state that "commercial traffic will be prohibited on roads  
 483 within parks, except for the purpose of serving park visitors and park operations (9.2.1.2.1)." If access to private  
 484 lands is otherwise not available, the park Superintendent has the discretion to issue permits for commercial  
 485 vehicles. The proposed construction project area for Build Alternative B is accessible from locations other than  
 486 the GWMP. However, since potential impacts would occur to residential communities at these other locations,  
 487 construction access from the GWMP was also studied as an option in the Draft EIS.

488 Discussions are ongoing regarding the location of construction staging areas and have yet to be resolved.  
 489 Preliminary staging areas have been identified. For Option 1, preliminary design has construction staging  
 490 occupying 9.1 acres, while Option 2 would occupy 8.9 acres. More detail on construction staging would become  
 491 available as discussions with property owners continue through the Final EIS and through final engineering  
 492 design prior to construction.

493 The tracks and ties would be removed from the segment of the existing Metrorail line that would no longer be  
 494 needed for Build Alternative B. No decision has been made regarding the re-use of this segment of track.

495

496 **Figure 2-13: Build Alternative B Construction Staging and Access Options**



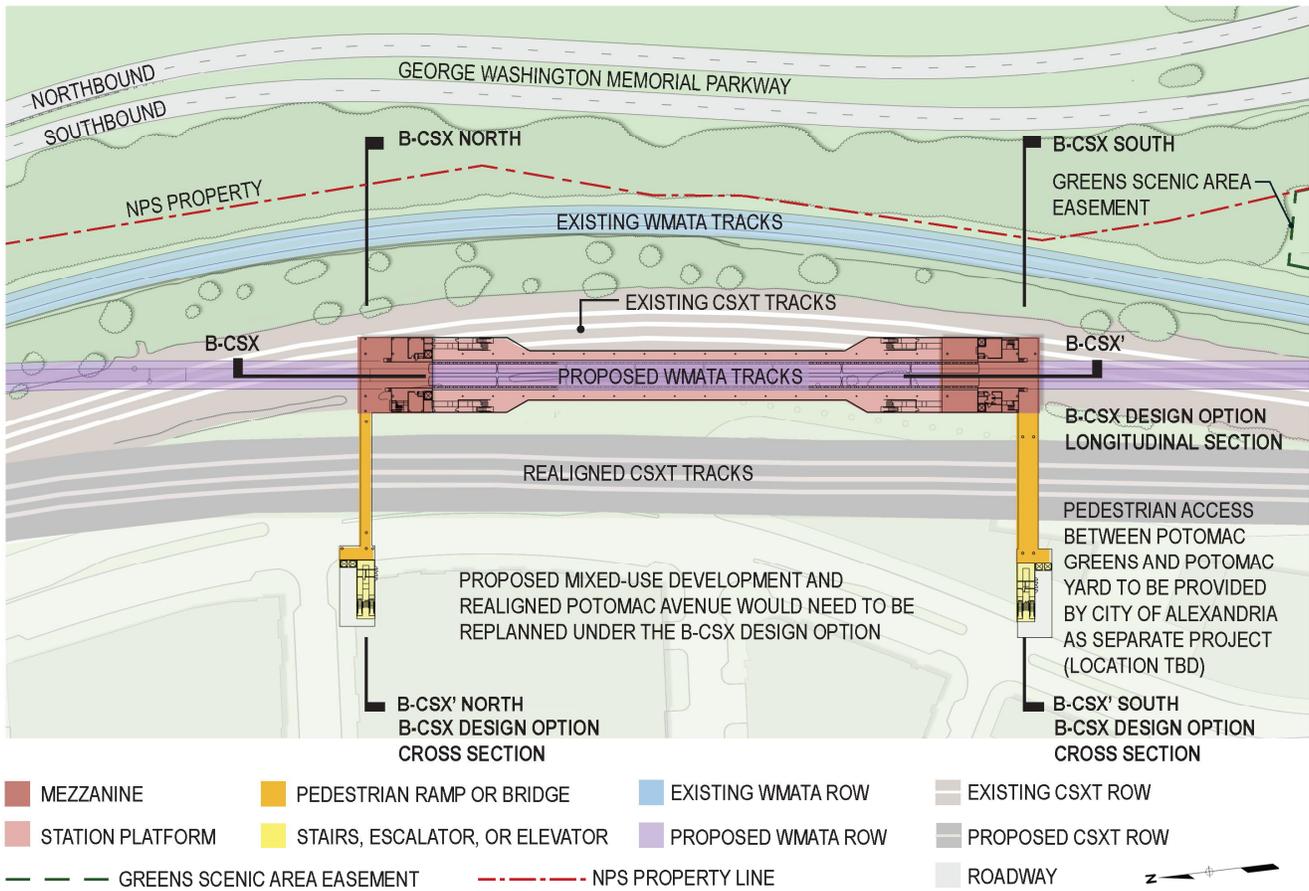
### 498 2.4.3 B-CSX Design Option

499 B-CSX Design Option would relocate the CSXT tracks to the west of the existing line, straightening the  
500 alignment and eliminating the eastward curve of the existing CSXT line from a point near the intersection of  
501 Potomac Avenue and East Glebe Road to a point just north of the existing Potomac Yard Movie Theater. The  
502 relocation of the CSXT line would provide the room necessary to relocate the Build Alternative B station and its  
503 connecting track to avoid GWMP property and the Greens Scenic Area easement. The track design would  
504 maintain the WMATA and CSXT design standards for minimum clearance (50 feet) between the Metrorail  
505 facilities and the CSXT tracks and design standards for vehicle operating speeds along the relocated tracks.

506 The Metrorail station for B-CSX Design Option would be located about 1,150 feet to the north and 150 feet to  
507 the west of the Build Alternative B station and just east of the existing Potomac Yard Movie Theater on land that  
508 currently is occupied by the CSXT line. Similar to the Build Alternative B station design, the B-CSX Design  
509 Option would include an at-grade station with a side platform layout. Additional station facilities would include  
510 two pedestrian bridges from the station over the CSXT right-of-way to the planned development in Potomac  
511 Yard. The B-CSX Design Option station would not include a bicycle and pedestrian bridge connecting the  
512 Potomac Greens and Potomac Yard neighborhoods. Direct bicycle and pedestrian access from Potomac  
513 Greens to the Metrorail station along the east side of the Metrorail tracks is not possible without a permanent  
514 encroachment into the Greens Scenic Area easement and wetlands. Thus, a separate pedestrian bridge over  
515 the CSXT right-of-way and existing Metrorail tracks providing 24-hour pedestrian/bicycle access between the  
516 Potomac Yard and the Potomac Greens neighborhoods would be constructed as part of a separate City of  
517 Alexandria project. The design option also includes crossover tracks just north of the station to maintain  
518 operational flexibility. B-CSX Design Option would leave adequate room to accommodate planned  
519 improvements to Long Bridge, a railroad bridge located to the north of the project study area.

520 **Figure 2-14** shows the site plan for B-CSX Design Option. The cross sections and longitudinal section for B-  
521 CSX Design Option are shown in **Figure 2-15**.

522 **Figure 2-14: B-CSX Design Option Plan View**



NOTE: THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY. THE FINAL DESIGN OF THE STATION, AMENDMENTS TO OPEN SPACE, AND THE PEDESTRIAN BRIDGES WILL OCCUR AS PART OF THE DESIGN-BUILD PROCESS AND WILL REQUIRE ALL APPLICABLE WMATA AND CITY APPROVALS.

523

524 **2.4.3.1 Construction Staging and Access**

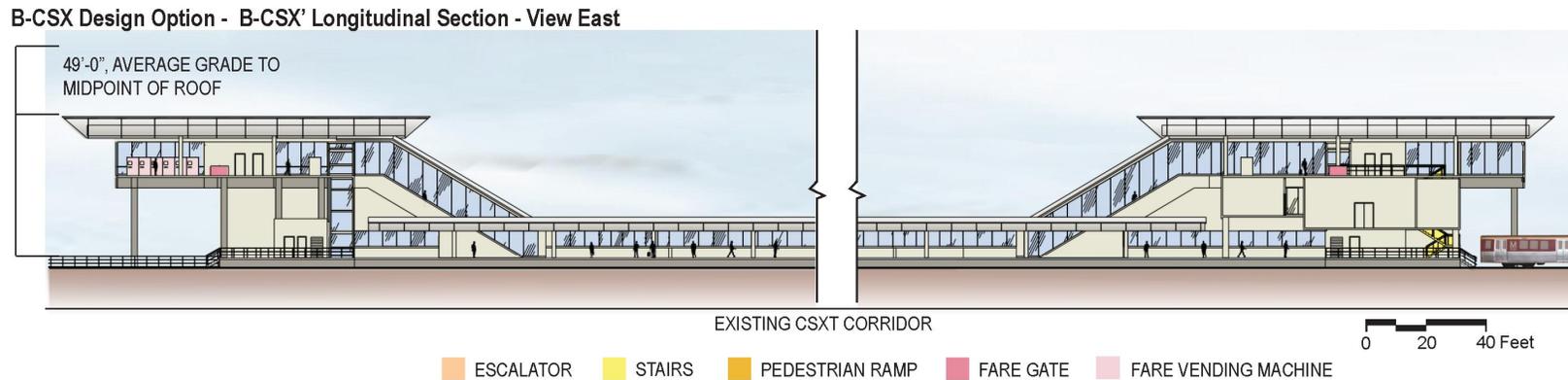
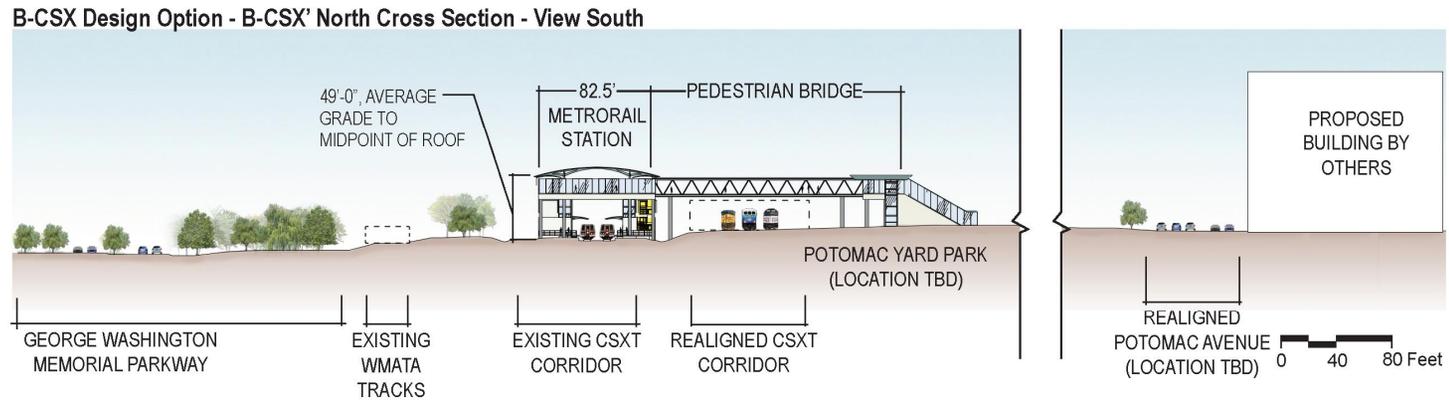
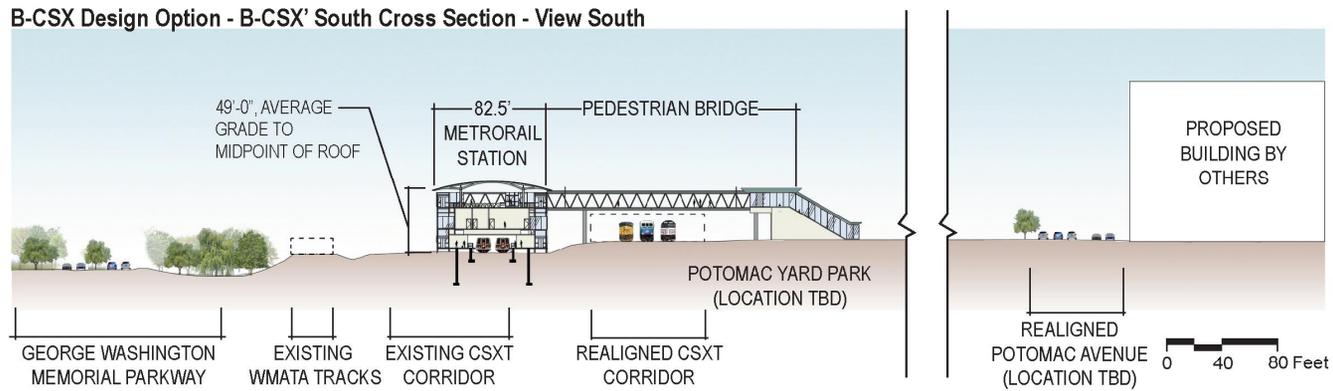
525 To construct B-CSX Design Option, access would be required from the west side of the Metrorail and CSXT  
 526 tracks, utilizing Potomac Avenue. To access the area between the relocated CSXT tracks and the Metrorail  
 527 Line, construction access would be required via the road through the Rail Park and across the CSXT tracks  
 528 during temporary stoppages of CSXT operations. CSXT operations would be shifted to the three new tracks one  
 529 at a time. Once the new CSXT tracks are complete and CSXT operations have ceased along the existing tracks,  
 530 then the construction of the Metrorail station and new track would occur.

531 Discussions are ongoing regarding the location of construction staging areas and have yet to be resolved.  
 532 Preliminary staging areas have been identified. Preliminary design has construction staging occupying 13.3  
 533 acres. More detail on construction staging would become available as discussions with property owners  
 534 continue through the Final EIS and through final engineering design prior to construction. Preliminary staging  
 535 and access areas are shown in **Figure 2-16** and **2-17**.

536 The tracks and ties would be removed from the segment of the existing Metrorail line that would no longer be  
 537 needed for B-CSX Design Option. No decision has been made regarding the re-use of this segment of track.

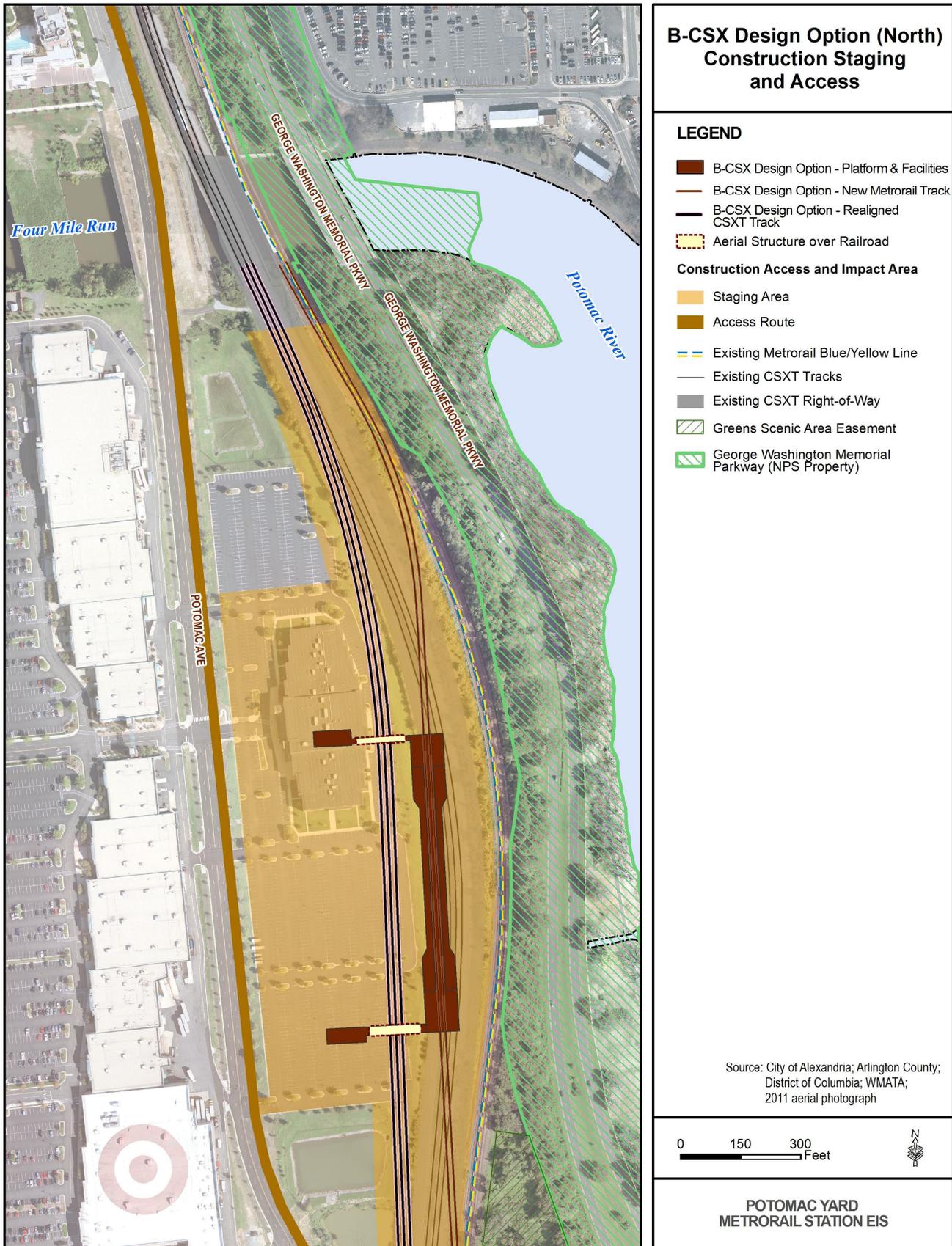
538

539 **Figure 2-15: B-CSX Design Option Cross Sections and Longitudinal Section**



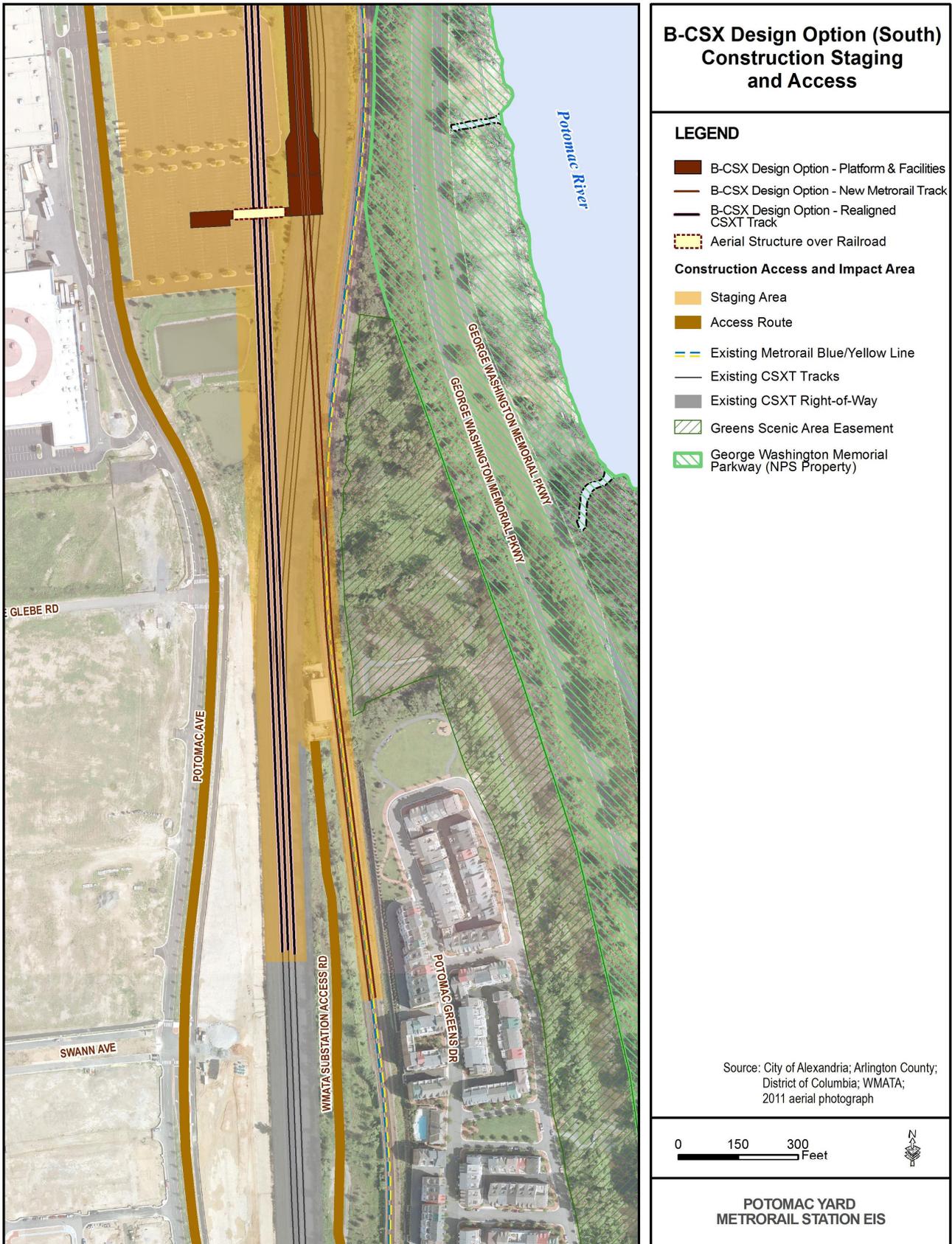
540 NOTE: SECTIONS DEPICT CONCEPTUAL DESIGNS. ALL DESIGNS OF THE STATION ARE SUBJECT TO ALL APPLICABLE WMATA AND CITY APPROVALS.

541 **Figure 2-16: B-CSX Design Option (North) Construction Staging and Access**



542

543 **Figure 2-17: B-CSX Design Option (South) Construction Staging and Access**



544

545 **2.4.4 Build Alternative D**

546 Build Alternative D would be located in North Potomac Yard west of the CSXT right-of-way near the existing  
 547 Potomac Yard Shopping Center in an existing parking lot and Potomac Yard Park. The station would be aerial  
 548 with an elevated center platform layout and ground floor entrance mezzanine. One pedestrian bridge over the  
 549 CSXT right-of-way would be constructed simultaneously as a separate project by the City of Alexandria,  
 550 providing 24-hour pedestrian/bicycle access between Potomac Yard and the Potomac Greens neighborhood.  
 551 **Figures 2-18** and **2-19** show the site plan for Build Alternative D. The cross sections and longitudinal section for  
 552 Build Alternative D are shown in **Figure 2-20**.

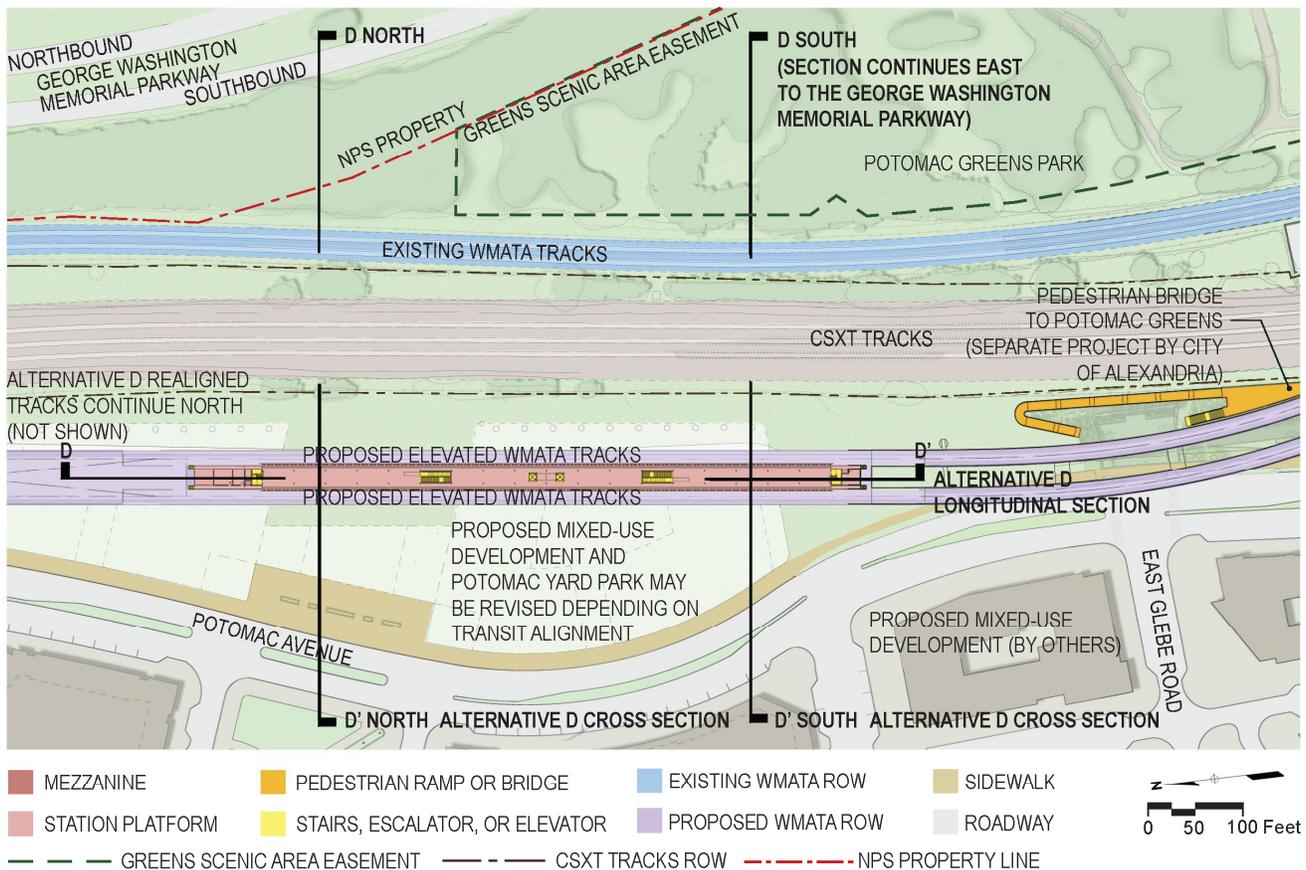
553 Build Alternative D would require the realignment of approximately 550 feet of existing track, as well as the  
 554 installation of approximately 5,800 feet of new track, a portion of which would be within Arlington County just  
 555 north of Four Mile Run. The majority of new track would be elevated.

556 Build Alternative D would include the following new bridges:

- 557 • One Metrorail aerial bridge crossing the CSXT right-of-way to the north of the station;
- 558 • Two bridges (northbound and southbound) crossing the CSXT right-of-way south of the station; and
- 559 • One new Metrorail bridge over Four Mile Run, located between the existing Metrorail bridge and the  
 560 GWMP, at an elevation approximately 19 feet higher on average than the existing Metrorail bridge.

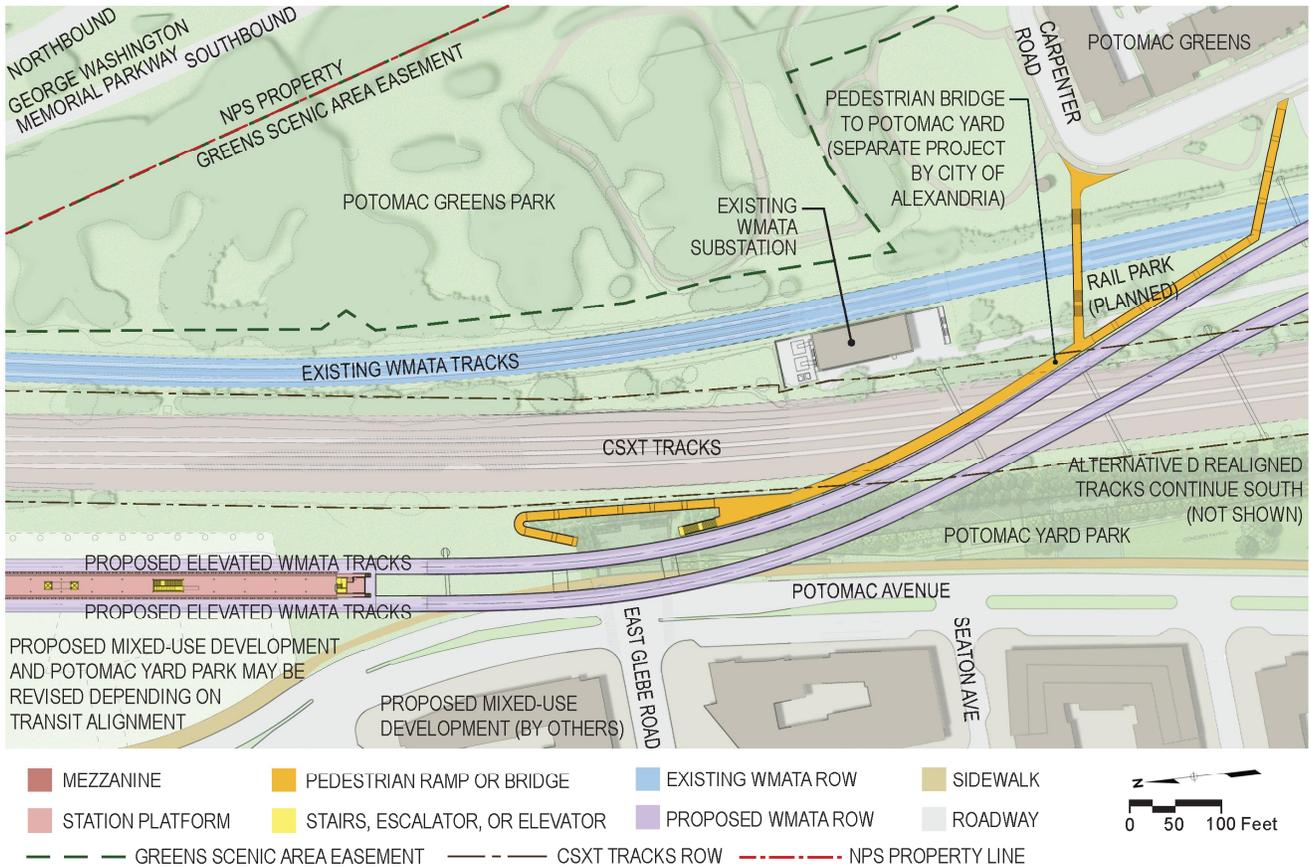
561 Construction of a double crossover track would be required in a location approximately 100 feet north of the  
 562 station. Additional structural improvements to accommodate the new and realigned Metrorail tracks would  
 563 include the removal and replacement of the existing retaining wall near the Potomac Greens neighborhood and  
 564 the removal of an additional retaining wall west of the existing Metrorail tracks, north of the existing Metrorail  
 565 tunnel entrance at the southern end of the neighborhood.

566 **Figure 2-18: Build Alternative D Plan View (1 of 2)**



567 NOTE: THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY. THE FINAL DESIGN OF THE STATION, AMENDMENTS TO OPEN SPACE, AND THE PEDESTRIAN BRIDGES WILL OCCUR AS PART OF THE DESIGN-BUILD PROCESS AND WILL REQUIRE ALL APPLICABLE WMATA AND CITY APPROVALS.

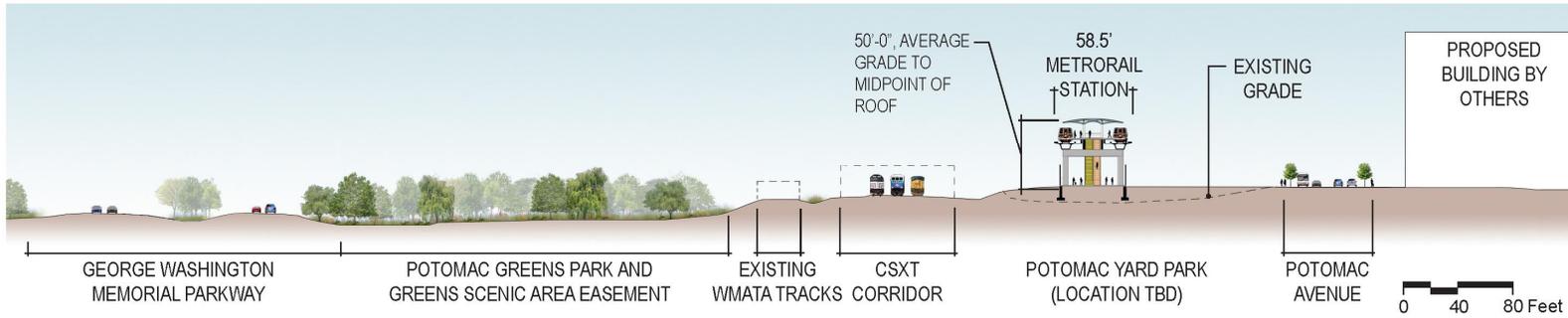
568 **Figure 2-19: Build Alternative D Plan View (2 of 2)**



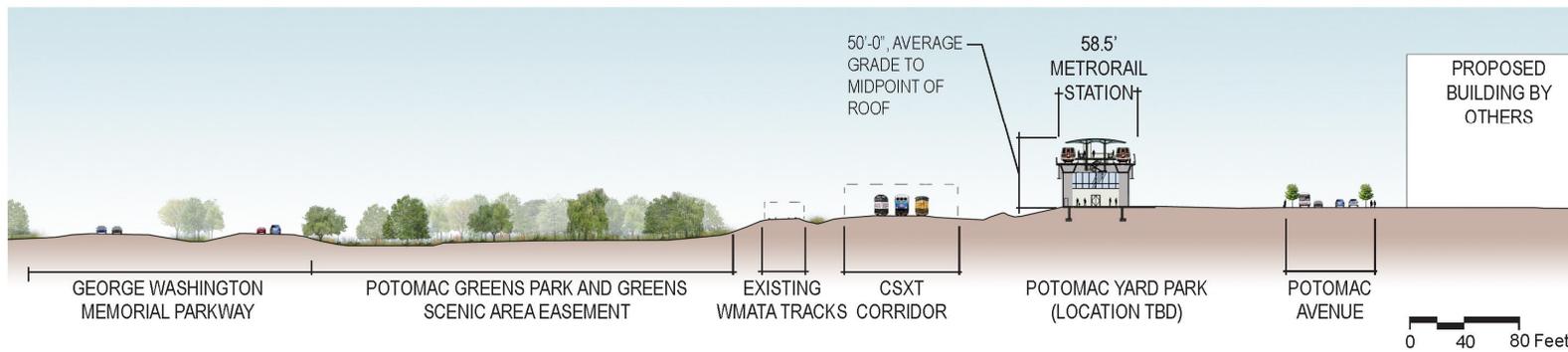
569 NOTE: THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY. THE FINAL DESIGN OF THE STATION, AMENDMENTS TO OPEN SPACE, AND THE PEDESTRIAN BRIDGES WILL OCCUR AS PART OF THE DESIGN-BUILD PROCESS AND WILL REQUIRE ALL APPLICABLE WMATA AND CITY APPROVALS.

570 **Figure 2-20: Build Alternative D Cross Sections and Longitudinal Section**

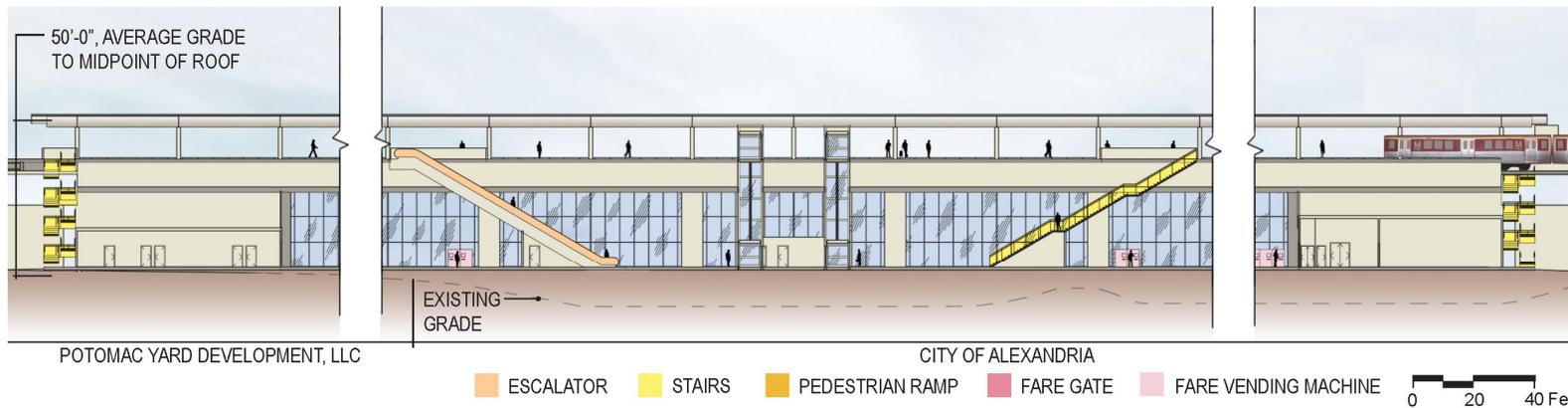
**Alternative D-D' North Cross Section - View South**



**Alternative D-D' South Cross Section - View South**



**Alternative D-D' Longitudinal Section - View East**



571 NOTE: SECTIONS DEPICT CONCEPTUAL DESIGNS. ALL DESIGNS OF THE STATION ARE SUBJECT TO ALL APPLICABLE WMATA AND CITY APPROVALS.

#### 572 2.4.4.1 Construction Staging and Access

573 Build Alternative D would require the majority of the proposed Metrorail track alignment to be constructed on  
 574 retained fill or on aerial structures. Retained fill would be required on both sides of Four Mile Run. The station  
 575 platform would be constructed on an aerial structure. At the north end of the alternative, construction of the new  
 576 aerial track would be required in close proximity to the existing Metrorail alignment, an existing stream channel,  
 577 and the GWMP roadway. To construct Build Alternative D, construction access would be required in several  
 578 areas, as described below. These areas are shown in **Figure 2-21** and **Figure 2-22**.

579 For construction activities located west of the CSXT right-of-way, access would be provided within Potomac  
 580 Yard through existing and planned public rights-of-way, utilizing Potomac Avenue; construction vehicles would  
 581 access this area from U.S. Route 1.

582 For construction activities in the vicinity of the Potomac Greens and Old Town Greens neighborhoods, access  
 583 would be provided via the entire length of Potomac Greens Drive; construction vehicles would access this area  
 584 from U.S. Route 1. Access to the area between the existing Metrorail tracks and CSXT right-of-way would be  
 585 provided through Potomac Greens Drive (0.7 mile) and via the access road through the Rail Park to the WMATA  
 586 traction power substation (0.5 mile). Additional construction access would be required at locations where  
 587 proposed Metrorail aerial structures and pedestrian structures cross over the CSXT right-of-way, including  
 588 locations north and south of the proposed station and locations west of the Potomac Greens and Old Town  
 589 Greens neighborhoods.

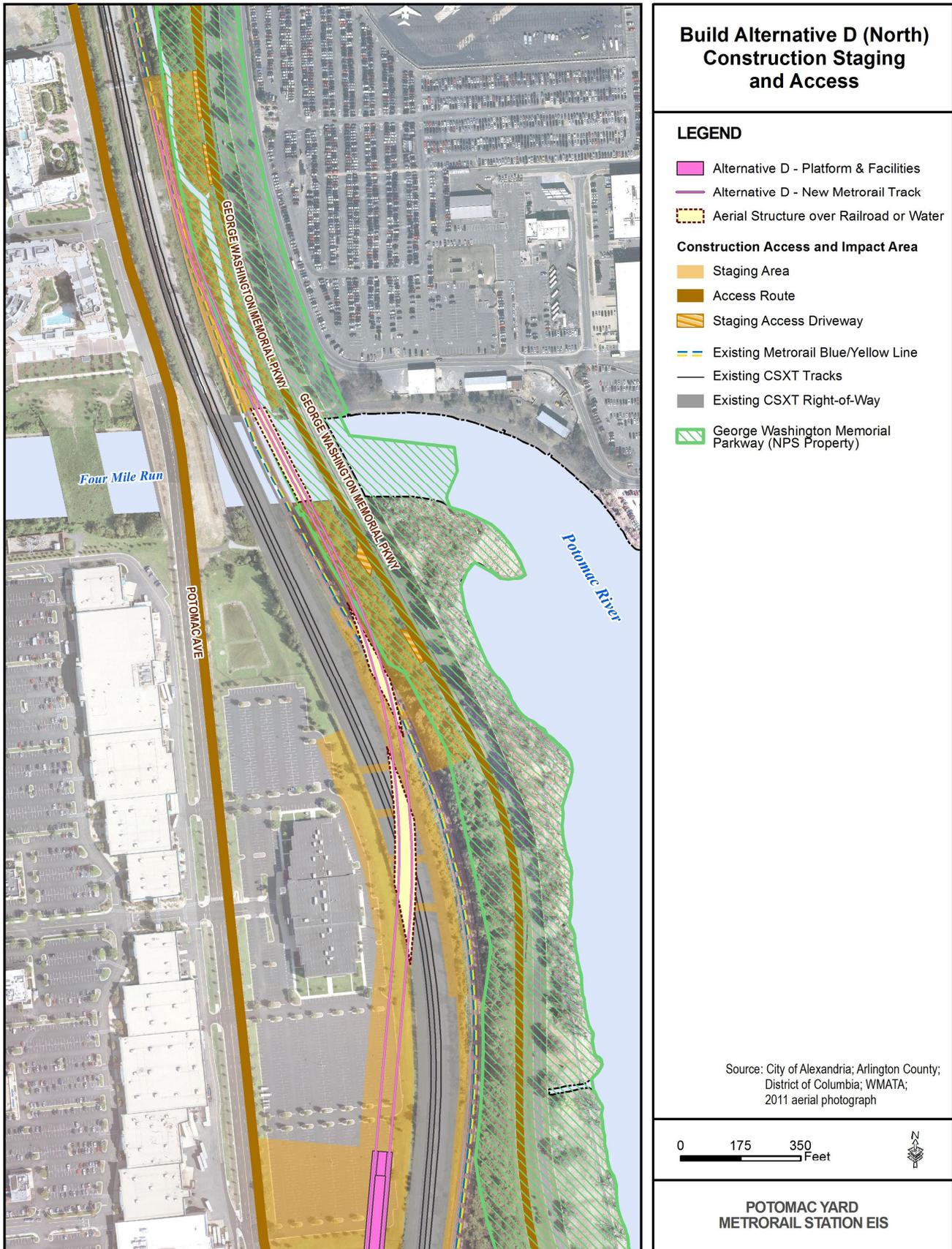
590 For construction activities on the east side of the existing Metrorail alignment, in the vicinity of Four Mile Run,  
 591 access would be provided via the GWMP; construction vehicles would use only the southbound GWMP  
 592 roadway, entering from the Airport Access Road and exiting at Slaters Lane, 1.7 miles to the south. Construction  
 593 access from the GWMP is needed for this part of Build Alternative D since access to the site is limited by site  
 594 constraints and the inability to connect to other access roads. Access is precluded from the west due to the  
 595 existing Metrorail Line and CSXT right-of-way, and north-south access is precluded by Four Mile Run. Attempting  
 596 to avoid construction access from the GWMP with a temporary access road connecting to Potomac Greens Drive  
 597 (south of Four Mile Run) would result in substantially greater vegetation and habitat impacts to the GWMP. This  
 598 leaves access from the east via the GWMP as the only viable option.

599 Commercial vehicles are prohibited from the GWMP under *NPS Management Policies* (9.2.1.2.1) and Federal  
 600 regulations (36 CFR 5.6). The NPS policies state that "commercial traffic will be prohibited on roads within  
 601 parks, except for the purpose of serving park visitors and park operations (9.2.1.2.1)." If access to private lands  
 602 is otherwise not available, the park Superintendent has the discretion to issue permits for commercial vehicles.

603 Discussions are ongoing regarding the location of construction staging areas and have yet to be resolved.  
 604 Preliminary staging areas have been identified. Preliminary design has construction staging occupying 18.0  
 605 acres. More detail on construction staging would become available as discussions with property owners  
 606 continue through the Final EIS and through final engineering design prior to construction.

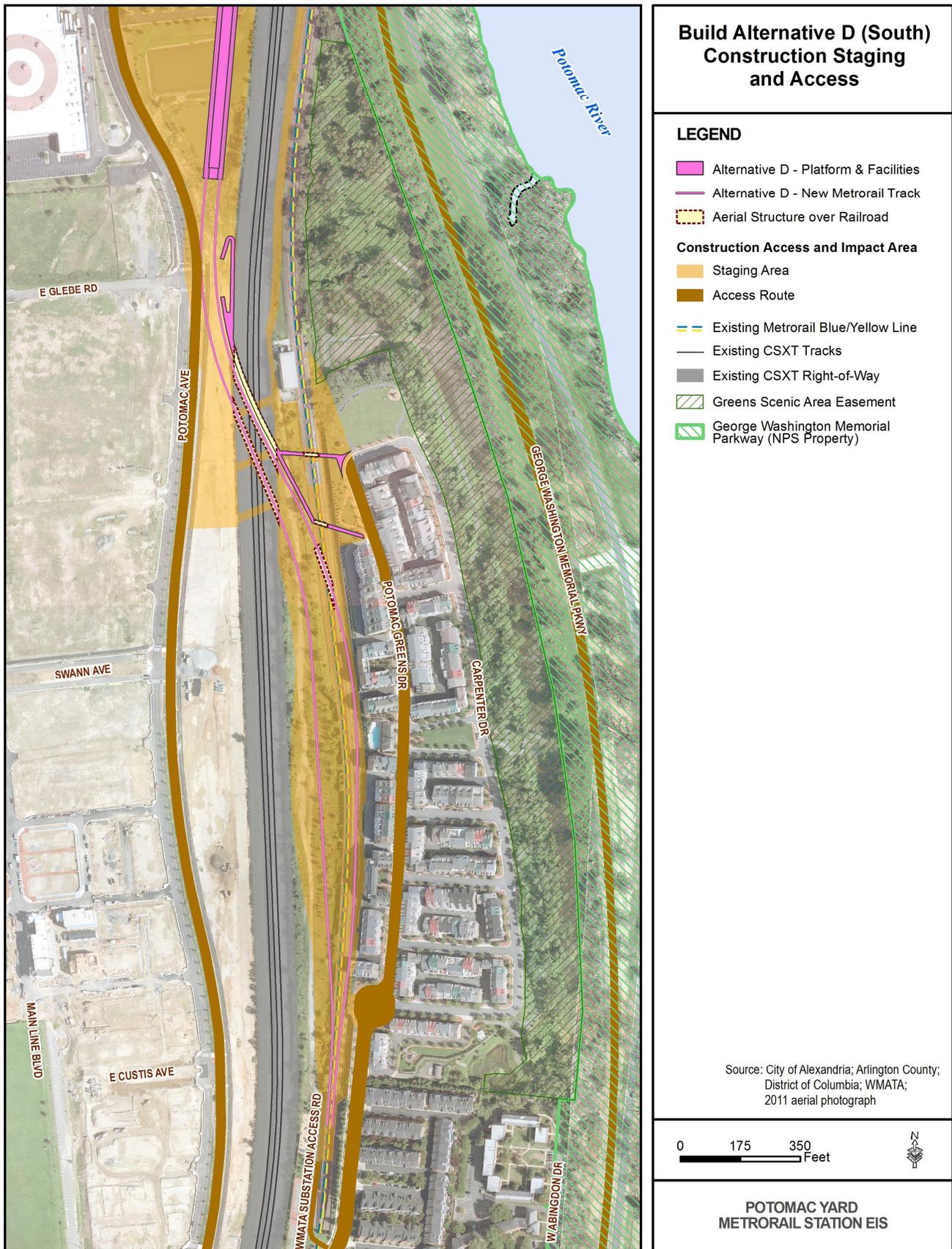
607 The tracks and ties would be removed from the segment of the existing Metrorail line that would no longer be  
 608 needed for Build Alternative D. No decision has been made regarding the re-use of this segment of track.

609 **Figure 2-21: Build Alternative D (North) Construction Staging and Access**



610

611 Figure 2-22: Build Alternative D (South) Construction Staging and Access



612

## 613 2.4.5 Alternative Construction Staging Scenarios

614 During the development of Build Alternatives A and B, the potential to use a crane from the west side of the  
615 CSXT right-of-way was considered. This option could reduce the need for construction access through the  
616 residential neighborhoods of Potomac Greens and Old Town Greens for both alternatives, as well as via the  
617 GWMP for Build Alternative B. However, lifting materials over live Metrorail tracks could only be accomplished  
618 during weekend outages, or between the hours of midnight and 5 am when Metrorail is not operating. The City  
619 of Alexandria Noise Control Code (Code of the City of Alexandria, Section 11-5) enforces quiet hours between  
620 11 pm and 7 am. The operation of construction devices and power equipment is prohibited between the hours of  
621 6:00 pm and 7:00 am Monday through Friday, before 9:00 am and after 6:00 pm on Saturday, and all hours on  
622 Sunday. In addition, the Code of the City of Alexandria (Section 13-1-3) restricts the use of outdoor lighting that  
623 would affect residential properties. Lighting required for nighttime construction activities associated with use of  
624 the crane would violate these standards. Based on these constraints, the duration of construction would greatly  
625 increase if the primary means of access were via crane. Therefore, the option of using a crane instead of  
626 providing construction access via Potomac Greens Drive and the GWMP was not considered further. Other  
627 construction mitigation measures may be identified and considered as more detailed design and construction  
628 plans are completed for the project.

## 629 2.5 Evaluation of Alternatives

630 This section provides a summary comparison of the No Build Alternative, the three Build Alternatives, and the B-  
631 CSX Design Option, based on an alternative's ability to minimize potential adverse impacts, maximize  
632 environmental benefits, and support the project purpose and need.

### 633 2.5.1 Methodology

634 The performance of each alternative relative to environmental consequences and project purpose and need is  
635 based on the quantitative and qualitative results of the technical analyses. Details are presented in **Chapter 3**  
636 and in the supporting technical memoranda and appendices provided in Volume II. The sections below  
637 summarize the performance of each alternative, with the intent of enabling comparison of the potential impacts  
638 and benefits of the No Build Alternative and Build Alternatives.

### 639 2.5.2 Environmental Consequences

640 Based on the results of the analysis of potential environmental effects and mitigation, the key resource areas  
641 affected by the project are land acquisitions and displacements; land use, zoning, and local plans; visual  
642 resources; parklands; cultural resources; noise and vibration; water resources; and construction impacts.  
643 Construction impacts are presented for two access options for Build Alternatives A and B. Option 1 assumes  
644 access from both GWMP and Potomac Greens Drive while Option 2 assumes access from Potomac Greens Drive  
645 only (both construction options include access to the area west of the existing Metrorail tracks for some  
646 construction activities). Other resources that were identified as important by the public during project scoping  
647 include transportation, air quality, ecosystems and endangered species, safety and security, and contaminated  
648 materials. **Table 2-4** and the following subsections summarize the effects of each alternative and design option.

649

650 **Table 2-4: Evaluation of Alternatives**

Evaluation Criteria	No Build Alternative	Build Alternatives			
		Alternative A	Alternative B	B-CSX Design Option	Alternative D
<b>Land Acquisition</b>					
Acres of property to be acquired by WMATA	None	1.27 acres	3.97 acres	14.36 acres	10.04 acres
<b>Land Use and Parkland</b>					
Acres of City of Alexandria Parks permanently impacted	None	1.16 acres	3.01 acres	3.86 acres	5.38 acres
Acres of National Park Service Parks (GWMP) permanently impacted	None	None	0.16 acre	None	1.43 acres
Acres of Greens Scenic Area easement permanently impacted <sup>1</sup>	None	None	1.71 acres	None	None
<b>Zoning and Local Plans</b>					
Consistency with City of Alexandria Plans	Not Consistent	Not Consistent	Consistent	Not Consistent	Not Consistent
Consistency with GWMP Plans	Neither Consistent nor Inconsistent	Neither Consistent nor Inconsistent	Neither Consistent nor Inconsistent	Neither Consistent nor Inconsistent	Neither Consistent nor Inconsistent
<b>Visual Resources</b>					
Adverse visual impacts to GWMP	Yes (due to development)	Yes	Yes	Yes	Yes
Adverse visual impacts to Potomac Greens/South Potomac Yard	Yes (due to development)	Yes	Yes	Yes	Yes
<b>Cultural Resources</b>					
Acres of MVMH (Mount Vernon Memorial Highway) and GWMP impacted	None	<u>Option 1</u> 0.30 acre <u>Option 2</u> None	<u>Option 1</u> 0.94 acre <u>Option 2</u> 0.71 acre	None	3.83 acres
Number of potential archaeological sites impacted	None Known	<u>Option 1</u> 2 sites <u>Option 2</u> None Known	<u>Option 1</u> 2 sites <u>Option 2</u> None Known	None Known	1 site
Trees in areas of original landscape design for MVMH and GWMP to be removed	None	<u>Option 1</u> 5-10 trees <u>Option 2</u> None	<u>Option 1</u> 15-20 trees <u>Option 2</u> 10-15 trees	None	70-75 trees
<b>Noise and Vibration</b>					
Exceedances of WMATA Noise Criteria for Moderate or Severe Impacts	7 residences (residences built after Metrorail)	7 residences (no addition compared to No Build)	7 residences (no addition compared to No Build)	7 residences (no addition compared to No Build)	3 residences (-4 compared to No Build)
Exceedances of FTA Noise Criteria for Moderate or Severe Impacts	None	None	None	None	7 residences (+7 compared to No Build)
Station noise (announcements and door chimes)	Yes (announcements from train)	Yes (in close proximity to residences)	Yes	Yes	Yes
Vibration impacts	None	6 Residences	None	None	7 Residences

Evaluation Criteria	No Build Alternative	Build Alternatives			
		Alternative A	Alternative B	B-CSX Design Option	Alternative D
<b>Water Resources</b>					
Acres of USACE regulated wetlands impacted	None	0.02 acre	1.22 acres	None	0.52 acre
Acres of NPS regulated wetlands permanently impacted	None	0.02 acre	1.28 acres	None	0.50 acre
Acres of Resource Protection Areas permanently impacted (GSAE=Greens Scenic Area easement administered by NPS)	None	<u>GWMP Land</u> 0 acres <u>GSAE Land</u> 0 acres <u>Other Land</u> 0.41 acre <u>Total Land</u> 0.41 acre	<u>GWMP Land</u> 0.10 acre <u>GSAE Land</u> 1.71 acres <u>Other Land</u> 1.54 acres <u>Total Land</u> 3.36 acres	<u>GWMP Land</u> 0 acres <u>GSAE Land</u> 0 acres <u>Other Land</u> 1.12 acres <u>Total Land</u> 1.12 acres	<u>GWMP Land</u> 1.12 acres <u>GSAE Land</u> 0 acres <u>Other Land</u> 0.95 acre <u>Total Land</u> 2.07 acres
Acres of 100-year floodplain permanently impacted	None	None	<u>GWMP Land</u> 0.05 acre <u>GSAE Land</u> 1.26 acres <u>Other Land</u> 0.17 acre <u>Total Land</u> 1.48 acres	None	<u>GWMP Land</u> 0.77 acre <u>GSAE Land</u> 0 acres <u>Other Land</u> 0.13 acre <u>Total Land</u> 0.90 acre
Additional impervious surface	0 acres	1.82 acres	2.24 acres	(-0.02) acre	9.24 acres
<b>Construction Impacts</b>					
Acres of GWMP parkland temporarily impacted	None	<u>Option 1</u> 0.30 acre <u>Option 2</u> None	<u>Option 1</u> 0.78 acre <u>Option 2</u> 0.55 acres	None	2.40 acres
Acres of City of Alexandria parkland temporarily impacted	None	<u>Option 1</u> 5.49 acres <u>Option 2</u> 4.80 acres	<u>Option 1</u> 5.48 acres <u>Option 2</u> 5.48 acres	0.97 acres	5.53 acres
Acres of Greens Scenic Area easement temporarily impacted	None	<u>Option 1</u> 0.25 acre <u>Option 2</u> 0.13 acre	<u>Option 1</u> 3.09 acres <u>Option 2</u> 3.09 acres	None	0.02 acre
Acres of USACE regulated wetlands impacted	None	<u>Option 1</u> 0.30 acre <u>Option 2</u> 0.01 acre	<u>Option 1</u> 3.61 acres <u>Option 2</u> 3.54 acres	None	0.41 acre
Acres of NPS regulated wetlands impacted	None	<u>Option 1</u> 0.35 acre <u>Option 2</u> 0.01 acre	<u>Option 1</u> 3.68 acres <u>Option 2</u> 3.57 acres	None	0.48 acre
Acres of 100-year floodplain impacted	None	<u>Option 1</u> 0.53 acre <u>Option 2</u> None	<u>Option 1</u> 3.86 acres <u>Option 2</u> 3.63 acres	None	1.22 acres
Acres of Resource Protection Areas impacted	None	<u>Option 1</u> 1.75 acres <u>Option 2</u> 0.49 acre	<u>Option 1</u> 5.50 acres <u>Option 2</u> 5.27 acres	0.58 acres	2.40 acres

Evaluation Criteria	No Build Alternative	Build Alternatives			
		Alternative A	Alternative B	B-CSX Design Option	Alternative D
Acres of trees and associated vegetation on GWMP cleared	None	Option 1 0.30 acre Option 2 None	Option 1 0.77 acre Option 2 0.55 acre	None	2.40 acres
Acres of trees and associated vegetation on Greens Scenic Area easement cleared	None	Option 1 0.18 acre Option 2 0.09 acre	Option 1 0.83 acre Option 2 0.83 acre	None	None

651 \*Impact calculations to Greens Scenic Area easement are also included under "Acres of City of Alexandria Parks permanently impacted" as the  
652 easement is located within the City's Potomac Greens Park.

653 **2.5.2.1 No Build Alternative**

654 Baseline conditions under the No Build Alternative are expected to result in the following changes to study area  
655 resources:

656 **Zoning and Local Plans:** The No Build Alternative does not include a Metrorail station. The NPYSAP and CDD  
657 #19 zoning regulations stipulate a Metrorail station in the vicinity of Build Alternative B to support the planned  
658 level of development in CDD #19 (7.525 million square feet). The No Build Alternative would permit a  
659 substantially smaller volume of development in CDD #19 (3.700 million square feet) than planned. The No Build  
660 Alternative requires a re-planning of North Potomac Yard. The No Build Alternative is neither consistent nor  
661 inconsistent with plans for the GWMP, because NPS plans do not address a Metrorail station in this area.

662 **Visual Resources:** Adverse visual impacts result from visible changes in a viewshed that alter its visual character  
663 and diminish its visual quality through changes to vividness, intactness, and unity. New development in Potomac  
664 Yard would result in adverse visual effects to viewsheds from the GWMP and the South Potomac Yard and  
665 Potomac Greens neighborhoods.

666 **Noise:** The residences in the Potomac Greens neighborhood were constructed alongside the existing Metrorail  
667 alignment. Because of the proximity of the existing Metrorail right-of-way to the residences in Potomac Greens,  
668 current Metrorail operations exceed WMATA noise criteria at seven residences. This baseline condition would  
669 remain the same under the No Build Alternative. Noise is also generated by announcements on trains passing  
670 through the study area.

671 **2.5.2.2 Build Alternative A**

672 Environmental impacts due to Build Alternative A would include consistency with land use, zoning, and local  
673 plans, effects to visual resources, effects to parklands, and effects to noise and vibration conditions. Effects by  
674 resource area include:

675 **Land Acquisitions:** Build Alternative A would require the permanent acquisition of 1.27 acres of property by  
676 WMATA, which includes 1.16 acres of land owned by the City of Alexandria and 0.11 acre of land that is  
677 privately owned. None of the land required includes NPS parkland or the Greens Scenic Area easement.

678 **Land Use:** Build Alternative A would impact park and open space uses as described below for Parklands.

679 **Zoning and Local Plans:** Build Alternative A would be located farther south than envisioned in the NPYSAP  
680 and CDD #19 zoning regulations, which stipulate a Metrorail station in the vicinity of Build Alternative B to  
681 support the planned level of development in CDD #19 (7.525 million square feet). Build Alternative A would  
682 permit a substantially smaller volume of development in CDD #19 (3.700 million square feet) than planned. Build  
683 Alternative A would require a re-planning of North Potomac Yard. Build Alternative A would be neither consistent  
684 nor inconsistent with plans for the GWMP, because NPS plans do not address a Metrorail station in this area.

685 **Visual Resources:** Visual effects to the GWMP would result from the removal of vegetation and the addition of  
686 new horizontal and vertical built elements for Build Alternative A that would be intermittently visible from the  
687 GWMP. These visual effects would be mostly due the height of the station necessary to accommodate the  
688 pedestrian access bridges over the CSXT railroad and the removal of vegetation for station construction.

689 Build Alternative A would also have visual effects for the existing South Potomac Yard and Potomac Greens  
690 neighborhoods.

691 **Cultural Resources:** FTA has preliminarily determined that Build Alternative A (both construction access  
 692 options) would have adverse effects on the Mount Vernon Memorial Highway (MVMH) and GWMP resulting  
 693 from temporary and permanent land transfers (for Option 1) and visual effects (for both options). Build  
 694 Alternative A Option 1 would include construction access from Potomac Greens Drive, Potomac Avenue, and  
 695 MVMH/GWMP and would directly impact 0.30 acre of the MVMH/GWMP historic properties. This acreage  
 696 reflects both temporary effects and permanent effects. Potential impacts associated with Build Alternative A  
 697 Option 1 could also affect the physical and historic integrity of the designed landscape that contributes to the  
 698 significance of these properties. Additionally, Build Alternative A Option 1 could directly impact two  
 699 archaeological sites potentially eligible for inclusion in the National Register of Historic Places (NRHP):  
 700 44AX0221 and 44AX0222.

701 Build Alternative A Option 2 would include construction access from Potomac Greens Drive and Potomac  
 702 Avenue only and would not directly impact historic or archaeological sites, but may have visual effects on  
 703 MVMH and GWMP. Potential visual impacts associated with Build Alternative A Option 2 could affect the  
 704 physical and historic integrity of the designed landscape that contributes to the significance of these properties.

705 For Build Alternative A Option 1, construction of temporary access driveways on MVMH and GWMP property  
 706 would require the clearance of 0.30 acre of treed area and associated herbaceous vegetation (excluding the  
 707 mowed roadway shoulder) and removal of roughly five to ten trees over two inches diameter at breast height  
 708 (DBH) in areas planted as part of the original landscape design of the MVMH and GWMP. These locations have  
 709 since returned to a more naturally vegetated state, although some of the species from the planting plans are still  
 710 present. Option 2 would not require the removal of trees planted as part of the original plan or any other trees on  
 711 MVMH and GWMP property.

712 The areas of MVMH and GWMP property to be cleared of vegetation include trees that are 20 to 70 years old of  
 713 various species, such as mulberry (*Morus alba*), sycamore (*Platanus* spp.), American Elm (*Ulmus americana*),  
 714 and pin oak (*Quercus palustris*). Additionally, other landscape plan vegetation proposed for removal includes  
 715 privet (*Ligustrum* spp.), multiflora rose (*Rosa multiflora*), Japanese honeysuckle (*Lonicera japonica*), bush  
 716 honeysuckle (*Lonicera* spp.), sumac (*Rhus* spp.), porcelainberry (*Ampelopsis brevipedunculata*), and trumpet  
 717 creeper (*Campsis radicans*).

718 Vegetative screening would require approximately 20-40 years of regrowth to be re-established similar to its  
 719 current state.

720 **Parklands:** The pedestrian access facilities would directly affect City of Alexandria parkland by occupying 0.71  
 721 acre of Potomac Yard Park and 0.45 acre of Potomac Greens Park.

722 **Noise and Vibration:** No additional exceedances of FTA and WMATA noise criteria (compared to the No Build  
 723 Alternative) are projected. However, station and train public address announcements have the potential to  
 724 impact residences in the Potomac Greens neighborhood. The location of the new double-crossover tracks south  
 725 of the proposed station would result in vibration effects at six residences in Potomac Greens, due to Metrorail  
 726 trains passing over the new switches. Because of the close proximity of the Build Alternative A to Potomac  
 727 Greens potential station noise impacts would likely be greater than the other Build Alternatives and B-CSX  
 728 Design Option. Mitigation measures would be considered during final design to eliminate potential noise and  
 729 vibration impacts.

730 **Water Resources:** New track and station facilities would permanently impact 0.02 acre of U.S. Army Corps of  
 731 Engineers (USACE) regulated wetlands and 0.41 acre of Resource Protection Areas (RPAs). The track and  
 732 station would not impact the 100-year floodplain. Build Alternative A would result in an additional 1.82 acres of  
 733 impervious surface.

734 **Construction Impacts:** Build Alternative A Option 1 would require access for construction vehicles from the  
 735 GWMP. Construction staging, material laydown areas, and access driveways would require the clearing of  
 736 vegetation and disturbance of soils in the areas designated for these activities for Build Alternative A.  
 737 Construction effects would also include the introduction of non-historic elements such as construction vehicles  
 738 and materials. Construction activities would result in impacts to 0.30 acre of the MVMH and GWMP historic  
 739 properties; 5.49 acres of City of Alexandria parkland, including Potomac Greens Park, Potomac Yard Park, and  
 740 the Rail Park; as well as 0.25 acre of the Greens Scenic Area easement. Effects to water resources would  
 741 include 0.30 acre of USACE regulated wetland, 0.35 acre of NPS regulated wetland, 0.53 acre of the 100-year  
 742 floodplain, and 1.75 acres of RPAs.

743 In addition to the vegetation removal and resulting visual impacts of Option 1 described above related to the  
 744 cultural landscape within the MVMH and GWMP, up to 0.30 acre of trees and associated vegetation would be  
 745 removed from the GWMP and 0.18 acre of trees and associated vegetation would be removed from the Greens  
 746 Scenic Area easement to accommodate the construction access, staging, and laydown areas and would have  
 747 visual effects on the MVMH and GWMP as a result.

748 Build Alternative A Option 2 construction staging and material laydown areas would not occur within the MVMH  
 749 and GWMP, but would temporarily impact 4.80 acres of City of Alexandria parkland, including Potomac Greens  
 750 Park, Potomac Yard Park, and the Rail Park, as well as 0.13 acre of the Greens Scenic Area easement. Effects  
 751 to water resources would include 0.01 acre of USACE and NPS regulated wetland and 0.49 acre of RPAs.

752 Build Alternative A Option 2 would require the clearing of 0.09 acre of trees and shrubs from the Greens Scenic  
 753 Area easement to accommodate the construction access, staging, and laydown areas. Vegetative screening  
 754 would require approximately 20-40 years of regrowth to be re-established similar to its current state.

755 Trees proposed for removal from the GWMP and MVMH for Options 1 and 2 are approximately 20 to 70 years  
 756 old of various species, such as mulberry (*Morus alba*), sycamore (*Platanus* spp.), American Elm (*Ulmus*  
 757 *americana*), and pin oak (*Quercus palustris*). Additionally, other landscape plan vegetation proposed for  
 758 removal includes privet (*Ligustrum* spp.), multiflora rose (*Rosa multiflora*), Japanese honeysuckle (*Lonicera*  
 759 *japonica*), bush honeysuckle (*Lonicera* spp.), sumac (*Rhus* spp.), porcelainberry (*Ampelopsis*  
 760 *brevipedunculata*), and trumpet creeper (*Campsis radicans*).

761 Because Potomac Yard is a former industrial site, construction may disturb soil and fill material potentially  
 762 contaminated by fly ash, former oil/water separator ponds, ballast material, and residual contamination in soil  
 763 and groundwater migrated from the former Central Operations Area.

764 Commercial vehicles are prohibited from the GWMP under *NPS Management Policies 2006* (9.2.1.2.1) and  
 765 Federal regulations (36 CFR 5.6). The NPS policies state that "commercial traffic will be prohibited on roads  
 766 within parks, except for the purpose of serving park visitors and park operations (9.2.1.2.1)." If access to private  
 767 lands is otherwise not available, the park Superintendent has the discretion to issue permits for commercial  
 768 vehicles. The proposed construction project area for Build Alternative A is accessible from locations other than  
 769 the GWMP. However, since potential impacts would occur to residential communities at these other locations,  
 770 construction access from the GWMP was also studied as an option in the Draft EIS.

771 **2.5.2.3 Build Alternative B**

772 Environmental impacts due to Build Alternative B would include land acquisitions, consistency with land use,  
 773 zoning and local plans, effects to visual resources, effects to cultural resources, effects to parklands, effects to  
 774 noise conditions, and effects to water resources. Effects by resource area include:

775 **Land Acquisitions:** Build Alternative B would require the permanent acquisition of 3.97 acres of property by  
 776 WMATA, which includes 3.30 acres of land owned by the City of Alexandria, 0.51 acre of land that is privately  
 777 owned, and 0.16 acre of NPS parkland. Build Alternative B would require 1.71 acres of the Greens Scenic Area  
 778 easement (owned by the U.S. Government and administered by NPS). Acquisition of property and interests in  
 779 property administered by NPS would be subject to an equal value land exchange.

780 **Land Use:** Build Alternative B would impact park and open space uses as described below for Parklands.

781 **Zoning and Local Plans:** Build Alternative B would be located within an area of Alexandria which limits the  
 782 height of buildings to 50 feet. As currently designed, Build Alternative B would exceed the height limit.  
 783 Preliminary analysis of the conceptual design has identified methods to reduce the height to meet current zoning  
 784 requirements. The City of Alexandria has identified options to comply with height limits and would explore these  
 785 options further during preliminary engineering and final design.

786 Build Alternative B would be consistent with the NPYSAP and would maximize allowable development under  
 787 current CDD #19 zoning. Build Alternative B would be neither consistent nor inconsistent with plans for the  
 788 GWMP, because NPS plans do not address a Metrorail station in this area.

789 **Visual Resources:** Visual effects to the GWMP would result from the removal of vegetation and the introduction  
 790 of horizontal and vertical built elements for Build Alternative B that would be intermittently visible from the  
 791 parkway. The visual effects of Build Alternative B would be lessened over time as replanted vegetation matures  
 792 and provides additional screening from the GWMP. The visual effects would be due in part to the height of the  
 793 station necessary to accommodate the pedestrian bridges over the CSXT Railroad, the station's proximity to the

794 GWMP, and the removal of vegetation for station construction. Planned development for North and South  
795 Potomac Yard would also be visible in the views of the station from the GWMP.

796 The station would also result in adverse effects to views from South Potomac Yard and Potomac Greens  
797 neighborhoods due to the height of the station and pedestrian access bridges.

798 **Cultural Resources:** FTA has preliminarily determined that Build Alternative B (both construction access  
799 options) would have adverse effects on the MVMH and GWMP resulting from temporary and permanent land  
800 transfers and visual effects. Build Alternative B Option 1 would include construction access from Potomac  
801 Greens Drive, Potomac Avenue, and MVMH/GWMP and would directly impact 0.94 acre of the MVMH and  
802 GWMP historic properties. This acreage reflects both temporary effects and permanent effects. Potential  
803 impacts associated with Build Alternative B Option 1 Construction Access could also affect the physical and  
804 historic integrity of the designed landscape that contributes to the significance of these properties. Additionally,  
805 Build Alternative B Option 1 Construction Access could directly impact two archaeological sites potentially  
806 eligible for inclusion in the NRHP: 44AX0221 and 44AX0222.

807 Build Alternative B Option 2 would include construction access from Potomac Greens Drive and Potomac  
808 Avenue only and would directly impact 0.71 acre of the MVMH and GWMP historic sites. This acreage reflects  
809 both temporary effects and permanent effects. Potential impacts associated with Build Alternative B Option 2  
810 Construction Access could also impair the physical and historic integrity of the designed landscape that  
811 contributes to the significance of these properties. Build Alternative B Option 2 Construction Access would not  
812 directly impact any archaeological sites potentially eligible for inclusion in the NRHP.

813 Construction of temporary access driveways on MVMH and GWMP property for Option 1 would require the  
814 clearance of 0.93 acre of trees and associated vegetation (excluding the mowed roadway shoulder) and  
815 removal of 15 to 20 trees over two inches DBH in areas planted as part of the original landscape design of the  
816 MVMH and GWMP. These locations have since returned to a more naturally vegetated state, although some of  
817 the species from the planting plans are still present.

818 Construction of temporary access driveways on MVMH and GWMP property for Option 2 would require the  
819 clearance of 0.71 acre of vegetated area (excluding the mowed roadway shoulder) and removal of 10 to 15  
820 trees over two inches DBH in areas planted as part of the original landscape design of the MVMH and GWMP.  
821 These locations have since returned to a more naturally vegetated state, although some of the species from the  
822 planting plans are still present.

823 The areas of MVMH and GWMP property to be cleared of vegetation include trees that are 20 to 70 years old of  
824 various species, such as mulberry (*Morus alba*), sycamore (*Platanus* spp.), American Elm (*Ulmus americana*),  
825 and pin oak (*Quercus palustris*). Additionally, other landscape plan vegetation proposed for removal includes  
826 privet (*Ligustrum* spp.), multiflora rose (*Rosa multiflora*), Japanese honeysuckle (*Lonicera japonica*), bush  
827 honeysuckle (*Lonicera* spp.), sumac (*Rhus* spp.), porcelainberry (*Ampelopsis brevipedunculata*), and trumpet  
828 creeper (*Campsis radicans*).

829 Vegetative screening would require approximately 20-40 years of regrowth to be re-established similar to its  
830 current state.

831 **Parklands:** Build Alternative B would occupy portions of Potomac Greens Park, the Greens Scenic Area  
832 easement, Potomac Yard Park, and the GWMP. New track, station facilities, and pedestrian access facilities  
833 would directly affect 3.01 acres of City of Alexandria parkland and 0.16 acre of Federal (NPS) parkland.

834 **Noise:** No additional exceedances of FTA and WMATA noise criteria (compared to the No Build Alternative) are  
835 projected. However, station and train public address announcements have the potential to impact residences in  
836 the Potomac Greens neighborhood. Mitigation measures would be considered during final design to eliminate  
837 potential noise impacts.

838 **Water Resources:** New track and station facilities would require the permanent use of 1.22 acres of USACE  
839 regulated wetlands, 1.28 acres of NPS regulated wetlands, and 3.36 acres of RPAs. The track and station would  
840 impact 1.48 acres of the 100-year floodplain. Build Alternative B would result in an additional 2.24 acres of  
841 impervious surface.

842 **Construction Impacts:** Build Alternative B Option 1 would include access for construction vehicles from the  
843 GWMP. Construction activities would result in impacts. Construction staging, material laydown areas, and  
844 access driveways would require the clearing of vegetation and disturbance of soils in the areas designated for

845 these activities for Build Alternative B. Construction effects would also include the introduction of non-historic  
 846 elements such as construction vehicles and materials. Construction activities would result in impacts to 0.78  
 847 acre of the MVMH and GWMP historic sites; 5.48 acres of City of Alexandria parkland, including Potomac  
 848 Greens Park, Potomac Yard Park, and the Rail Park; as well as 3.09 acres of the Greens Scenic Area  
 849 easement. Effects to water resources would include 3.61 acres of USACE regulated wetlands, 3.68 acres of  
 850 NPS regulated wetlands, 3.86 acres of the 100-year floodplain, and 5.50 acres of RPAs. After construction, the  
 851 City of Alexandria would restore the vegetation and hydrology; however, these areas would likely take several  
 852 years returning to their original condition.

853 In addition to the vegetation removal and resulting visual impacts described above related to the cultural  
 854 landscape within the MVMH and GWMP, up to up to 0.77 acre of trees and shrubs would be removed from the  
 855 GWMP and 0.83 acre of trees and shrubs would be removed from the Greens Scenic Area easement for the  
 856 construction access, staging, and laydown areas for Option 1 and would cause visual effects to the MVMH and  
 857 GWMP as a result. Vegetative screening would require approximately 20-40 years of regrowth to be re-  
 858 established similar to its current state.

859 Build Alternative B Option 2 would require access for construction vehicles from the Potomac Greens and Old  
 860 Town Greens residential neighborhoods. The construction staging and material laydown areas and access  
 861 roadways would require the clearing of vegetation and disturbance of soils. Build Alternative B Option 2 would  
 862 result in impacts to 0.55 acre of the MVMH and GWMP historic properties; 5.48 acres of City of Alexandria  
 863 parkland, including Potomac Greens Park, Potomac Yard Park, and the Rail Park; as well as 3.09 acres of the  
 864 Greens Scenic Area easement. Effects to water resources would include 3.54 acres of USACE regulated  
 865 wetlands, 3.57 acres of NPS regulated wetlands, 3.63 acres of the 100-year floodplain, and 5.27 acres of RPAs.

866 For Build Alternative B Option 2, up to 0.55 acre of trees and associated vegetation would be removed from the  
 867 MVMH and GWMP and up to 0.83 acre of trees and associated vegetation would be removed from the Greens  
 868 Scenic Area easement for the construction access, staging, and laydown areas and would have visual effects  
 869 on the MVMH and GWMP as a result. Vegetative screening would require approximately 20-40 years of  
 870 regrowth to be re-established similar to its current state.

871 Because Potomac Yard is a former industrial site, construction may disturb soil and fill material potentially  
 872 contaminated by fly ash, former oil/water separator ponds, ballast material, and residual contamination in soil  
 873 and groundwater migrated from the former Central Operations Area.

874 Commercial vehicles are prohibited from the GWMP under *NPS Management Policies 2006* (9.2.1.2.1) and  
 875 Federal regulations (36 CFR 5.6). The NPS policies state that "commercial traffic will be prohibited on roads  
 876 within parks, except for the purpose of serving park visitors and park operations (9.2.1.2.1)." If access to private  
 877 lands is otherwise not available, the park Superintendent has the discretion to issue permits for commercial  
 878 vehicles. The proposed construction project area for Build Alternative B is accessible from locations other than  
 879 the GWMP. However, since potential impacts would occur to residential communities at these other locations,  
 880 construction access from the GWMP was also studied as an option in the Draft EIS.

#### 881 **2.5.2.4 B-CSX Design Option**

882 Environmental impacts due to B-CSX Design Option would include land acquisitions, consistency with land use,  
 883 zoning and local plans, effects to visual resources, effects to cultural resources, effects to parklands, effects to  
 884 noise conditions, and effects to water resources. Permanent effects by resource area include:

885 **Land Acquisitions:** B-CSX Design Option would require the permanent acquisition of 14.36 acres of property  
 886 by WMATA, which include 4.44 acres of land owned by the City of Alexandria and 9.92 acres of land that is  
 887 privately owned. None of the land required includes NPS parkland or the Greens Scenic Area easement.

888 **Land Use:** B-CSX Design Option would occupy a portion of existing development (the movie theater). The  
 889 realigned tracks would affect planned streets in Potomac Yard. In addition, B-CSX Design Option would impact  
 890 park and open space uses as described below for Parklands.

891 **Zoning and Local Plans:** B-CSX Design Option would be located farther north and west than stipulated in the  
 892 NPYSAP and CDD #19 zoning regulations, which stipulate a Metrorail station in the vicinity of Build Alternative  
 893 B to support the planned level of development in CDD #19 (7.525 million square feet). B-CSX Design Option  
 894 would permit a substantially smaller volume of development in CDD #19 (3.700 million square feet) than  
 895 planned. Build Alternative D would require a re-planning of North Potomac Yard. Unlike Build Alternative B, B-

896 CSX Design Option would not exceed the zoning height limit. B-CSX Design Option would be neither consistent  
 897 nor inconsistent with plans for the GWMP, because NPS plans do not address a Metrorail station in this area.

898 **Visual Resources:** Visual effects to the GWMP would result from the introduction of horizontal and vertical built  
 899 elements of B-CSX Design Option that would be intermittently visible from the parkway due to the height of the  
 900 station. Visual effects would be minimal during summer months but greater for the winter months due to the  
 901 lack of foliage. Planned development for North Potomac Yard would also be visible in the views of the station  
 902 from the GWMP.

903 The visual effects of B-CSX Design Option to the existing South Potomac Yards and Potomac Greens would be  
 904 minimal.

905 **Cultural Resources:** FTA has preliminarily determined that B-CSX Design Option would have adverse effects  
 906 on the MVMH and GWMP resulting from temporary and permanent visual effects. B-CSX Design Option would  
 907 not directly impact historic or archaeological sites, but may have visual effects on the MVMH and GWMP.  
 908 Potential visual impacts associated with B-CSX Design Option could affect the physical and historic integrity of  
 909 the designed landscape that contributes to the significance of these properties.

910 No vegetation would be removed from MVMH or GWMP under B-CSX Design Option. The remaining vegetation  
 911 would provide some level of screening but parts of the station would be visible from the parkway, especially  
 912 during the winter months.

913 **Parklands:** B-CSX Design Option station and realigned track would occupy portions of the existing Potomac  
 914 Yard Park, planned North Potomac Yard Park, and Potomac Greens Park. New track, station facilities, and  
 915 pedestrian access facilities would directly affect 3.86 acres of City of Alexandria parkland.

916 **Noise:** No additional exceedances of FTA and WMATA noise criteria (compared to the No Build Alternative) are  
 917 projected. However, station and train public address announcements have the potential to impact residences in  
 918 the Potomac Greens neighborhood. Mitigation measures would be considered during final design to eliminate  
 919 potential noise impacts.

920 **Water Resources:** B-CSX Design Option would require the permanent use of 1.12 acres of RPAs. The track  
 921 and station would not impact wetlands or the 100-year floodplain. B-CSX Design Option would result in a  
 922 decrease of 0.02 acre of impervious surface compared to the No Build Alternative.

923 **Construction Impacts:** Construction staging, material laydown areas, and access driveways would require the  
 924 clearing of vegetation, disturbance of soils, demolition of the existing movie theater, and the use of the adjacent  
 925 existing parking lot for B-CSX Design Option. Construction effects would also include the introduction of non-  
 926 historic elements such as construction vehicles and materials within viewsheds of MVMH and GWMP.  
 927 Construction staging and material laydown areas for B-CSX Design Option would result in impacts to 0.97 acre  
 928 of City of Alexandria parkland, including Potomac Greens Park and the Rail Park. B-CSX Design Option would  
 929 also result in impacts to water resources including 0.58 acre of RPAs. B-CSX Design Option would require  
 930 temporary track shutdowns during construction to accommodate realigned track segments.

931 No trees or other vegetation would be removed from the MVMH and GWMP or the Greens Scenic Area  
 932 easement.

933 After construction activities are complete for the B-CSX Design Option, new vegetation would be planted to  
 934 mitigate the adverse visual impacts from the station construction. The visual impacts would lessen over time as  
 935 the vegetation matures.

936 Because Potomac Yard is a former industrial site, construction may disturb soil and fill material potentially  
 937 contaminated by fly ash, former oil/water separator ponds, ballast material, and residual contamination in soil  
 938 and groundwater migrated from the former Central Operations Area.

939 **2.5.2.5 Build Alternative D**

940 Environmental impacts due to Build Alternative D would include land acquisitions and displacements,  
 941 consistency with land use, zoning, and local plans, effects to visual resources, effects to cultural resources,  
 942 effects to parklands, effects to noise and vibration conditions, and effects to water resources. Effects by  
 943 resource area include:

944 **Land Acquisitions and Displacements:** Build Alternative D would require the permanent acquisition of 10.04  
 945 acres of property by WMATA, and would displace the existing movie theater and associated parking in North

946 Potomac Yard. The land to be acquired would include 5.55 acres of land owned by the City of Alexandria, 1.43  
 947 acres of NPS land in the area near Four Mile Run, and 3.06 acres of privately owned land mostly in the area of the  
 948 existing movie theater. Acquisition of property and interests in property administered by NPS would be subject to  
 949 an equal value land exchange.

950 **Land Use:** Build Alternative D would occupy a portion of existing development (the movie theater). The  
 951 realigned tracks would affect planned streets in Potomac Yard. In addition, Build Alternative D would impact  
 952 park and open space uses as described below for Parklands.

953 **Zoning and Local Plans:** Build Alternative D is located farther north and west than stipulated in the NPYSAP  
 954 and CDD #19 zoning regulations, which stipulate a Metrorail station in the vicinity of Build Alternative B to  
 955 support the planned level of development in CDD #19 (7.525 million square feet). Build Alternative D would  
 956 permit a substantially smaller volume of development in CDD #19 (3.700 million square feet) than planned. Build  
 957 Alternative D would require a re-planning of North Potomac Yard. Build Alternative D is neither consistent nor  
 958 inconsistent with plans for the GWMP, because NPS plans do not address a Metrorail station in this area.

959 **Visual Resources:** Visual effects to the GWMP would result from the height of the elevated station and the  
 960 elevated connecting tracks north and south of the station for Build Alternative D. The connecting track structures  
 961 would be visible from the GWMP through large breaks in vegetation especially in the area near Four Mile Run.  
 962 Replacement vegetation would lessen the effects over time as the vegetation matures. Planned development for  
 963 North and South Potomac Yard would also be visible in the views of the station and elevated connecting tracks  
 964 from the GWMP.

965 Alternative D would have adverse visual effects to the existing South Potomac Yard and Potomac Greens  
 966 neighborhood due to the height of the elevated station and the elevated connecting track structures located  
 967 south of the proposed station.

968 **Cultural Resources:** FTA has preliminarily determined that Build Alternative D would have adverse effects on  
 969 the MVMH and GWMP resulting from temporary and permanent land transfers, visual effects, and loss of  
 970 vegetation. Build Alternative D would directly impact 3.83 acres of the MVMH and GWMP historic properties.  
 971 This acreage reflects both temporary effects and permanent effects. Potential impacts associated with Build  
 972 Alternative D could also affect the physical and historic integrity of the designed landscape that contributes to  
 973 the significance of these properties. Additionally, Build Alternative D could directly impact archaeological site  
 974 44AX0220, which is potentially eligible for inclusion in the NRHP.

975 Construction of temporary access driveways on MVMH and GWMP property for Build Alternative D would  
 976 require the clearance of 2.40 acres of vegetated area (excluding the mowed roadway shoulder) and removal of  
 977 70 to 75 trees over two inches DBH in areas planted as part of the original landscape design of the MVMH and  
 978 GWMP. These locations have since returned to a more naturally vegetated state, although some of the species  
 979 from the planting plans are still present.

980 The areas of MVMH and GWMP property to be cleared of vegetation include trees that are 20 to 70 years old of  
 981 various species, such as mulberry (*Morus alba*), sycamore (*Platanus* spp.), American Elm (*Ulmus americana*),  
 982 and pin oak (*Quercus palustris*). Additionally, other landscape plan vegetation proposed for removal includes  
 983 privet (*Ligustrum* spp.), multiflora rose (*Rosa multiflora*), Japanese honeysuckle (*Lonicera japonica*), bush  
 984 honeysuckle (*Lonicera* spp.), sumac (*Rhus* spp.), porcelainberry (*Ampelopsis brevipedunculata*), and trumpet  
 985 creeper (*Campsis radicans*).

986 **Parkland:** The station and elevated track would occupy portions of Potomac Greens Park, Potomac Yard Park,  
 987 the GWMP, and the Rail Park. New track, station facilities, and pedestrian access facilities would directly affect  
 988 5.38 acres of City of Alexandria parkland and 1.43 acres of federal (NPS) parkland.

989 **Noise and Vibration:** Due to shifting of elevated track closer to residences in Potomac Greens, Build  
 990 Alternative D would exceed FTA and WMATA criteria at ten residences. In addition, the location of the double  
 991 crossover would result in vibration impacts at seven residences. Station and train public address  
 992 announcements also have the potential to impact residences in the Potomac Greens neighborhood. Mitigation  
 993 measures would be considered during final design to eliminate potential noise and vibration impacts.

994 **Water Resources:** Build Alternative D would result in an additional 9.24 acres of impervious surface. Build  
 995 Alternative D would also affect 0.52 acre of USACE regulated wetlands, 0.50 acre of NPS regulated wetlands,  
 996 0.90 acre of the 100-year floodplain, and 2.07 acres of RPAs.

997 **Construction Impacts:** Build Alternative D would require access for construction vehicles from the GWMP in  
 998 two locations. Construction staging, material laydown areas, and access driveways require the clearing of  
 999 vegetation and disturbance of soils. Construction effects would also include the introduction of non-historic  
 1000 elements such as construction vehicles and materials. Construction activities would result in impacts to 2.40  
 1001 acres of the MVMH and GWMP historic properties; 5.53 acres of City of Alexandria parkland, including Potomac  
 1002 Greens Park, Potomac Yard Park, and the Rail Park; as well as 0.02 acre of the Greens Scenic Area easement.  
 1003 Effects to water resources would include 0.41 acre of USACE regulated wetland, 0.48 acre of NPS regulated  
 1004 wetland, 1.22 acres of the 100-year floodplain, and 2.40 acres of RPAs.

1005 Because Potomac Yard is a former industrial site, construction may disturb soil and fill material potentially  
 1006 contaminated by fly ash, former oil/water separator ponds, ballast material, and residual contamination in soil  
 1007 and groundwater migrated from the former Central Operations Area.

1008 In addition to the vegetation and resulting visual impacts described above related to the cultural landscape  
 1009 within the MVMH and GWMP, up to 2.40 acres of trees and associated vegetation would be removed for the  
 1010 construction access, staging, and laydown areas within the GWMP and would have visual effects on the MVMH  
 1011 and GWMP as a result. Vegetative screening would require approximately 20-40 years of regrowth to be re-  
 1012 established similar to its current state.

1013 Commercial vehicles are prohibited from the GWMP under NPS Management Policies 2006 (9.2.1.2.1) and  
 1014 Federal regulations (36 CFR 5.6). The regulations state that "commercial traffic will be prohibited on roads within  
 1015 parks, except for the purpose of serving park visitors and park operations (9.2.1.2.1)." If access to private lands  
 1016 is otherwise not available, the park Superintendent has the discretion to issue permits for commercial vehicles.

1017 **2.5.3 Support for Project Purpose and Need**

1018 The project purpose and need is described in detail in **Chapter 1**. To evaluate the extent to which each  
 1019 alternative supports the stated purpose and need, the following questions were asked for each alternative:

- 1020 • Does the alternative improve regional transit accessibility of Potomac Yard?
- 1021 • Does the alternative expand transportation choices by locating regional transit within walking distance of  
 1022 residents and employees of the Potomac Yard area? Walking distance was defined as ½ mile for residents (a  
 1023 10-minute walk) and ¼ mile for employees (a 5-minute walk), based on industry experience.
- 1024 • Does the alternative accommodate travel demand by shifting automobile trips to transit and other non-auto  
 1025 modes? Non-auto mode share is defined as the percentage of trips that are taken on foot, by bicycle, or using  
 1026 transit.
- 1027 • Does the alternative support the City of Alexandria's redevelopment plans for a major mixed-use activity  
 1028 center in Potomac Yard?

1029 **Table 2-5** shows the results to these questions for each alternative. Because the three Build Alternatives and B-  
 1030 CSX Design Option are located in relatively close proximity to each other, they often perform similarly using  
 1031 these measures.

1032

1033 **Table 2-5: Support for Project Purpose and Need**

Evaluation Measure	No Build Alternative	Build Alternatives			
		Alternative A	Alternative B	B-CSX Design Option	Alternative D
<b>Project Purpose: Improving regional transit accessibility</b>					
Regional transit access to Potomac Yard	No	Yes	Yes	Yes	Yes
<b>Project Need: Providing additional transportation choices for residents and workers</b>					
Number of residents within ½ mile of regional transit station, assuming development in approved plans (2040)	0	15,200	19,800	16,700	16,500
Number of employees within ¼ mile of regional transit station, assuming development in approved plans (2040)	0	17,100	24,400	12,000	13,200
<b>Project Need: Increasing the share of transit and other non-auto trips</b>					
Daily automobile trips shifted to transit, assuming development in approved plans (2040)	Base	5,100	6,700	5,200	5,200
Non-auto mode share for trips in the Potomac Yard area (2040)	29%	34%	34%	34%	34%
<b>Project Need: Supporting City of Alexandria redevelopment plans</b>					
Total Potomac Yard development volume (square feet) permitted under approved plans	9.250 million	9.250 million	13.075 million	9.250 million	9.250 million

Source: MWCOG Round 8.3 Cooperative Land Use Forecasts; City of Alexandria approved development volumes for Potomac Yard; and MWCOG regional travel demand model with WMATA transit post-processor application (Version 2.3, 2012).

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1036 **2.5.3.1 Support for Project Purpose: Improving Regional Transit Accessibility**

1037 The three Build Alternatives and B-CSX Design Option support the purpose and need by constructing a new  
1038 Metrorail station at Potomac Yard that would provide direct access to the regional transit system. Locating a  
1039 station in Potomac Yard minimizes travel times and transfers by transit to regional destinations served by the  
1040 system. Although the No Build Alternative improves connecting service to the existing Braddock Road and  
1041 Crystal City Metrorail Stations via the CCPY Transitway, the Transitway does not provide direct regional transit  
1042 service to and from Potomac Yard.

1043 **2.5.3.2 Support for Project Need: Providing Additional Transportation Choices**

1044 All three Build Alternatives and B-CSX Design Option would serve planned population and employment growth  
1045 in the Potomac Yard area by providing an additional transportation option, regional transit, for residents,  
1046 employees, and visitors to the area. The majority of the new development within Potomac Yard would be within  
1047 walking distance of the Metrorail station proposed under the three Build Alternatives and B-CSX Design Option.  
1048 However, Build Alternatives B and D would be located farther north than Build Alternative A, and therefore  
1049 would be closer to North Potomac Yard, which is where the densest development is planned within the Potomac  
1050 Yard area. Based on the maximum allowable development, Build Alternative B would be within walking distance  
1051 of the highest number of residences, as well as offices, shopping, and entertainment destinations. Build  
1052 Alternative B would enable significantly more office use with a greater percentage of the planned office area  
1053 located within a ¼-mile walk of Alternative B. Although Build Alternative D would be located the farthest north and  
1054 west, the station would occupy land that is currently slated for development, thereby reducing the development  
1055 potential of North Potomac Yard and resulting in lower levels of development within walking distance of the  
1056 station. B-CSX Design Option would have a similar location and effect on development within walking distance  
1057 of the station as Build Alternative D.

1058 **2.5.3.3 Support for Project Need: Increasing the Share of Transit and Other Non-Auto Trips**

1059 Build Alternative B would reduce automobile trips with an origin or destination in Potomac Yard by  
1060 approximately 6,700 trips. Build Alternatives A and D and B-CSX Design Option would reduce these automobile  
1061 trips by approximately 5,000 daily trips. B-CSX Design Option is assumed to have a similar diversion of auto  
1062 trips to transit as Build Alternative D based on its similar location within Potomac Yard and the associated

1063 development volume. The non-automobile mode share in Potomac Yard is projected to be 34 percent for any of  
1064 the three Build Alternatives and B-CSX Design Option, and under the No Build Alternative, the non-automobile  
1065 mode share is projected to be 29 percent.

#### 1066 **2.5.3.4 Support for Project Need: Supporting City of Alexandria Redevelopment Plans**

1067 The analysis of direct impacts in the Draft EIS assumed a constant level of development in Potomac Yard for  
1068 each alternative (9.250 million square feet). However, as described in **Section 2.1 Local Planning Process**,  
1069 and shown in **Table 2-5**, current City plans and zoning allow up to 13.075 million square feet of development if a  
1070 station is constructed in the vicinity of Build Alternative B. Under approved plans and zoning, 9.250 million  
1071 square feet of development would be allowed under Build Alternative A, Build Alternative D, or B-CSX Design  
1072 Option.