

24.0 Draft Section 4(f) Evaluation

24.1. Introduction

Section 4(f) of the United States Department of Transportation Act of 1966 states that “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.”¹

This chapter discusses:

- The legal requirements for compliance with Section 4(f);
- Project purpose and need;
- Alternatives;
- The identification of Section 4(f)–protected properties within the Long Bridge Study Area;
- An analysis of effects to Section 4(f) properties because of the Action Alternatives, taking into consideration potential avoidance alternatives and minimization measures;
- An evaluation of potential uses of Section 4(f) properties;
- Additional measures to minimize harm to Section 4(f); and,
- A conclusion statement specifying the alternative having the least overall harm to Section 4(f) properties.

24.2. Section 4(f) Applicability

Section 4(f) prohibits an operating administration of the Department of Transportation, including the Federal Railroad Administration (FRA), from approving a project that uses public parks and recreational lands, wildlife refuges; and public or private historic properties eligible for listing in the National Register of Historic Places (NRHP), unless it determines there is no feasible and prudent alternative to avoid the use and the project includes all possible planning to minimize harm to the resources, or the use meets the requirements for a *de minimis* impact.² FRA generally relies on the Federal Highway Administration and Federal Transit Administration regulations implementing Section 4(f) at 23 CFR part 774, as well as associated policy guidance.

Section 4(f) evaluations include coordination with Officials with Jurisdiction (OWJ) over the Section 4(f) resources. The OWJ for historic resources is the State Historic Preservation Officer or Tribal Historic Preservation Officer, if on Tribal land. The OWJ for parks and other recreational resources is generally the property owner. FRA must also coordinate with the United States Department of Interior (DOI) when FRA makes a Section 4(f) finding or when a project would use property managed by DOI. As appropriate, FRA must also coordinate with the United States Department of Agriculture (USDA) and the United

¹ 49 USC 303(a)

² 49 USC 303 (c,d)

32 States Department of Housing and Urban Development (HUD), as well as relevant state and local
33 officials.

34 **24.3. Project Purpose and Need**

35 The Long Bridge Corridor is a two-track railroad system extending approximately 1.8 miles between
36 Arlington, Virginia, and Washington, DC (the District) that includes Long Bridge, a bridge crossing the
37 Potomac River. Constructed in 1904, Long Bridge is located in the Washington Monumental Core, the
38 symbolic and Federal center of the District. The existing Long Bridge is owned and operated by CSX
39 Transportation (CSXT), a Class I freight railroad, which also operates the Long Bridge Corridor. In
40 addition to CSXT freight trains, Amtrak and Virginia Railway Express (VRE) also currently use the bridge.
41 The Long Bridge Corridor includes Federal parkland managed by the National Park Service (NPS); historic
42 and cultural properties; the Potomac River; residential buildings, offices, and hotels; and transportation
43 facilities (VRE L'Enfant Station, Long Bridge, Washington Metropolitan Area Transit Authority [WMATA]
44 Metrorail right-of-way and bridge, five other railroad bridges, four roadway bridges, and numerous
45 pedestrian and bicycle trails).

46 The purpose of the Project is to provide additional long-term railroad capacity and to improve the
47 reliability of railroad service through the Long Bridge Corridor.³ Currently, there is insufficient capacity,
48 resiliency, and redundancy to accommodate the projected demand in future railroad services. The
49 Project is needed to address these issues and to ensure the Long Bridge Corridor continues to serve as a
50 critical link connecting the local, regional, and national transportation network. **Chapter 2, Purpose and
51 Need**, describes the Purpose and Need in more detail.

52 **24.4. Alternatives**

53 If the Project will use a Section 4(f) resource, and FRA does not find the impact is *de minimis*, FRA must
54 complete an analysis to determine whether a feasible and prudent⁴ avoidance alternative exists (see
55 **Section 24.7, Avoidance Alternatives Analysis**).

56 **Chapter 3, Alternatives**, and **Appendix B1, Alternatives Development Report**, describe the process
57 through which FRA and the District Department of Transportation (DDOT) identified and evaluated the
58 Action Alternatives and No Action Alternative for the Project. FRA and DDOT identified a broad and
59 reasonable range of concepts, in addition to a No Action Alternative, to address the Project's Purpose
60 and Need. The Lead Agencies examined the results of pre-NEPA Phase I and II Studies; considered input
61 from the agency and public outreach process; and coordinated with railroad stakeholders CSXT, Amtrak,
62 and VRE. FRA and DDOT developed 18 preliminary action concepts and the No Action Alternative for
63 consideration.

³ Railroad reliability is the continuity of correct service. Reliability can be divided into two related concepts, regularity and punctuality. Regularity is the variation in headways, while punctuality relates to the deviation from the scheduled arrival and departure times. Service reliability is a key factor affecting the traveling public's choice of transportation mode and in efficient, cost-effective transportation of freight.

⁴ An alternative is not feasible if it cannot be constructed as a matter of sound engineering. An alternative is not prudent if it compromises the project to a degree that is unreasonable to proceed; it results in acceptable safety or operational problems; it still causes severe social, economic, or environmental impacts after reasonable mitigation; it results in additional construction, maintenance, or operational costs of an extraordinary magnitude; or it causes other unique problems or unusual factors.

64 After two levels of screening, FRA and DDOT determined two Action Alternatives met the Purpose and
65 Need and were feasible and carried these alternatives forward in the DEIS analysis. The Action
66 Alternatives vary in whether they retain or replace the existing Long Bridge over the Potomac River and
67 the railroad bridge over the George Washington Memorial Parkway (GWMP). Both Action Alternatives
68 expand the north-south Long Bridge railroad Corridor from two to four tracks and include necessary
69 infrastructure improvements between RO Interlocking in Arlington, Virginia, and LE Interlocking in the
70 District. **FRA and DDOT selected Action Alternative A as the Preferred Alternative.** This alternative
71 keeps the existing two-track Long Bridge crossing the Potomac River and builds a new two-track bridge
72 immediately upstream from the existing bridge. It also constructs a new two-track bridge over the
73 GWMP west of the existing bridge. Action Alternative B builds a new two-track bridge immediately
74 upstream from the existing bridge, constructs a new bridge over the GWMP, and replaces the existing
75 bridges over the Potomac River and the GWMP with new two-track bridges.

76 **24.5. Section 4(f) Protected Properties**

77 **Figure 24-1** shows the Section 4(f)-protected parks in the Local Study Area. **Table 16-1** in **Chapter 16,**
78 **Parks and Recreation Areas**, lists the public parks, public recreation areas, and wildlife refuges in the
79 Local Study Area.

80 **Figure 24-2** displays the Area of Potential Effects for historic properties under Section 106 of the
81 National Historic Preservation Act, which is the same area as the Local Study Area for Section 4(f)-
82 protected historic sites. **Table 15-1** in **Chapter 15, Cultural Resources**, provides a listing of the Section
83 4(f)-protected historic properties that are listed on, or determined eligible for listing in, the NRHP.
84 **Appendix E1, Area of Potential Effects and Historic Properties Technical Report**, provides more
85 detailed information on the location and significance of the historic properties in the Local Study Area.

86 FRA identified archaeologically sensitive areas through a Phase IA Archaeological Assessment conducted
87 for the Project (see **Appendix E4, Phase IA Archaeological Assessment Technical Report**). FRA has not
88 evaluated these sites for NRHP eligibility or their value for preservation in place.⁵ Therefore, no Section
89 4(f)-protected archaeological properties have been identified to date. Any archaeological resources
90 discovered during construction would undergo Section 4(f) evaluation to determine their eligibility as
91 protected properties under Section 4(f) and, if necessary, to evaluate any feasible and prudent
92 avoidance alternatives.

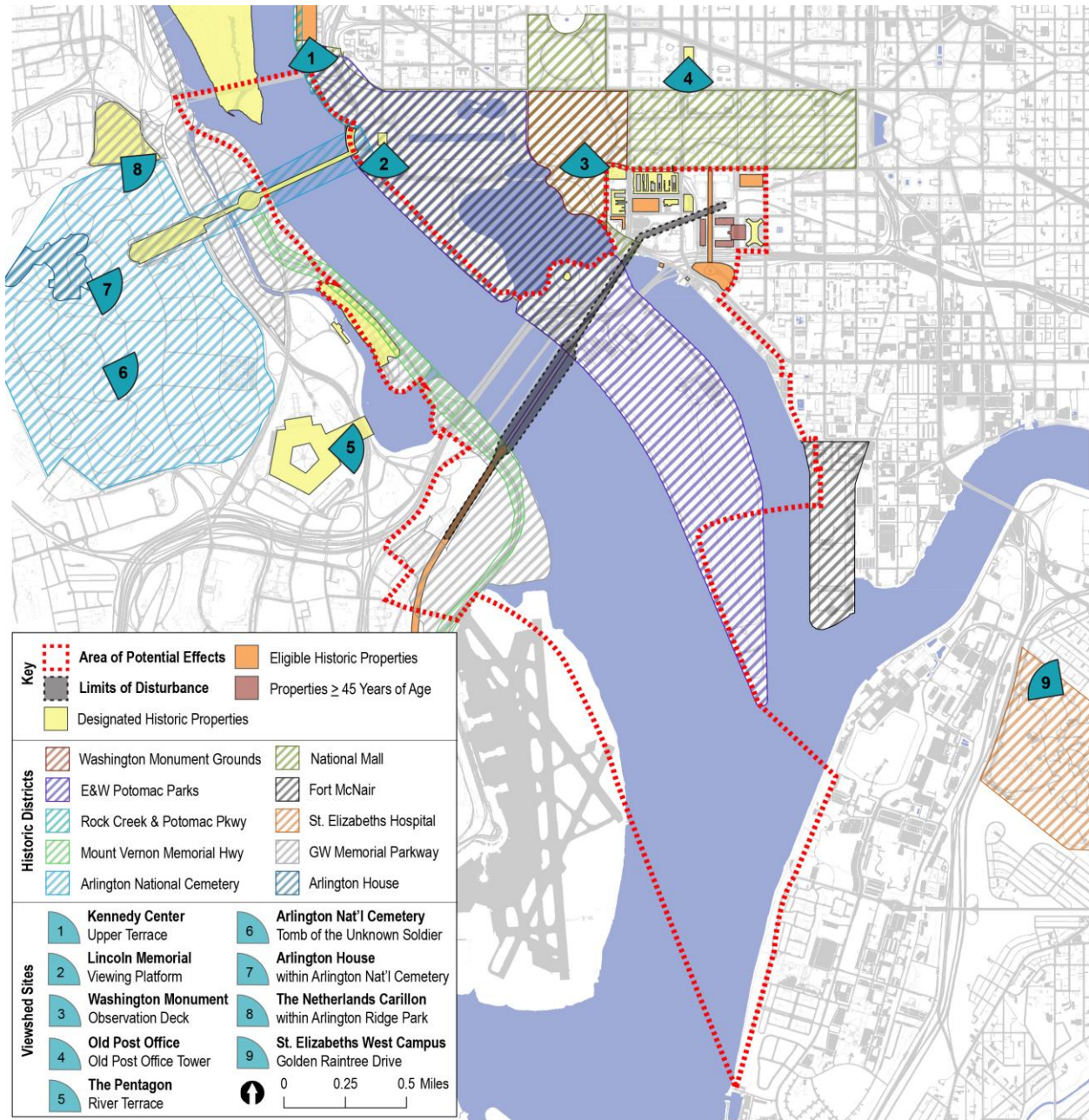
⁵ When FRA, in consultation with the District of Columbia State Historic Preservation Office (DC SHPO) and Virginia Department of Historic Resources (VDHR), determines that the archaeological resource is important chiefly because of what can be learned by data recovery and has minimal value to preservation in place.

93 **Figure 24-1** | Section 4(f) Park Properties and Index Map



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95 **Figure 24-2 | Historic Properties**



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97 **24.6. Use of Section 4(f) Properties**

98 This section identifies uses of Section 4(f) properties for each Action Alternative, based on the analyses
99 presented in **Chapters 5 through 21** of this Environmental Impact Statement (EIS). A “use” would occur
100 when:

- 101 • A transportation facility permanently incorporates land;
- 102 • There is a temporary occupancy of land that is adverse in terms of the statute’s preservationist
103 purposes;⁶ or
- 104 • The transportation project does not incorporate land from a Section 4(f) property, but the
105 project’s proximity impacts are so severe that the protected activities, features, or attributes
106 that qualify the property for protection are substantially impaired or diminished. This is referred
107 to as a constructive use.

108 FRA may also determine an impact is *de minimis*. In such cases, FRA may satisfy the requirements of
109 Section 4(f) where:⁷

- 110 • For historic sites, FRA determines as part of the Section 106 process that the transportation
111 project would have no adverse effect on the historic site, or there would be no historic
112 properties affected by the transportation project. The SHPO and ACHP (if participating in the
113 consultation process) must concur with this finding in writing. In addition, FRA must consider the
114 views of any consulting parties participating in Section 106 consultation.
- 115 • For parks, recreation areas, and wildlife and waterfowl refuges, FRA determines that the
116 transportation use of the Section 4(f) resource, together with any avoidance, minimization, and
117 mitigation or enhancement measures, does not adversely affect the activities, features, or
118 attributes that qualify the resource for protection. FRA must give the public an opportunity to
119 review and comment, and the OWJ over the property concurs with FRA’s determination.

120 **Table 24-1** provides a summary of uses to Section 4(f)-protected properties resulting from both Action
121 Alternatives. The table lists only those properties for which FRA determined a use. These impacts would
122 still remain after all possible planning to minimize harm (that is all possible measures have been
123 undertaken to minimize or mitigate for adverse impacts). The sections below describe these findings by
124 resource and alternative.

⁶ Certain temporary occupancies are exempt from Section 4(f) when FRA determines the following conditions are met: “(1) Duration must be temporary, i.e., less than the time needed for construction of the project, and there should be no change in ownership of the land; (2) Scope of the work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal; (3) There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis; (4) The land being used must be fully restored, i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project; and (5) There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions.”

⁷ 49 USC 303(d)

125 **Table 24-1** | Summary of Uses to Section 4(f) Properties in the Study Area

Section 4(f) Property	Official with Jurisdiction	Resource Type	Action Alternative A	Action Alternative B
Long Bridge Park	Arlington County	Parkland	<i>de minimis</i> impact	<i>de minimis</i> impact
GWMP/ GWMP Historic District	NPS	Parkland and Historic Resource	Use	Use
Mount Vernon Memorial Highway (MVMH) Historic District	NPS	Historic Resource	Use	Use
Mount Vernon Trail (MVT)	NPS	Parkland	No use	No use
East Potomac Park/ East and West Potomac Parks Historic District	NPS	Parkland and Historic Resource	Use	Use
Hancock Park (Reservation 113)	NPS	Parkland	No use	No use
Plan of the City of Washington	NPS	Historic Resource	No use	No use

126
 127 While this chapter only discusses the historic sites that would incur a use under Section 4(f), the Section
 128 106 process identified multiple other historic resources within the APE, as shown in **Figure 24-2**. Many
 129 of these properties are outside the limits of disturbance for either Action Alternative and would have no
 130 adverse effect as determined through the Section 106 process (see **Appendix E3, Section 106**
 131 **Assessment of Effects Report**). Therefore, these historic sites would have no use under Section 4(f).
 132 These properties are listed in **Table 24-2** and not addressed elsewhere in the Section 4(f) evaluation.

133 **Table 24-2** | Section 4(f)-Protected Historic Properties with No Section 4(f) Use

Section 4(f) Property	Section 4(f) Property
National Mall Historic District	Lyndon B. Johnson Memorial Grove
Rock Creek and Potomac Parkway Historic District	Lincoln Memorial
Fort Leslie J. McNair (The Old Arsenal) Historic District	Arlington Ridge Park
Washington Monument and Grounds Historic District	Old Post Office
Arlington House, The Robert E. Lee Memorial Historic District	The Pentagon
Arlington National Cemetery Historic District	Bureau of Engraving and Printing Annex
St. Elizabeth’s Hospital Historic District	Federal Office Building 10A (Orville Wright Building)
Thomas Jefferson Memorial	Benjamin Banneker Park/Overlook; Tenth Street Overlook
Central Heating Plant	Richmond, Fredericksburg and Potomac Railroad HD
USDA Cotton Annex	Washington Marina Building
HUD Building (Robert C. Weaver Federal Building)	L’Enfant Promenade
USDA South Building	Lady Bird Johnson Park
Bureau of Engraving and Printing	John F. Kennedy Center for the Performing Arts
Auditor’s Building Complex	Liberty Loan Federal Building
Arlington Memorial Bridge (and related features)	Astral Building
Titanic Memorial	Comsat Building
Lunch Room Building and Oyster Shucking Shed	Loew’s L’Enfant Plaza Hotel
Cuban Friendship Urn	USPS Building
Theodore Roosevelt Island National Memorial (Analoatan Island)	

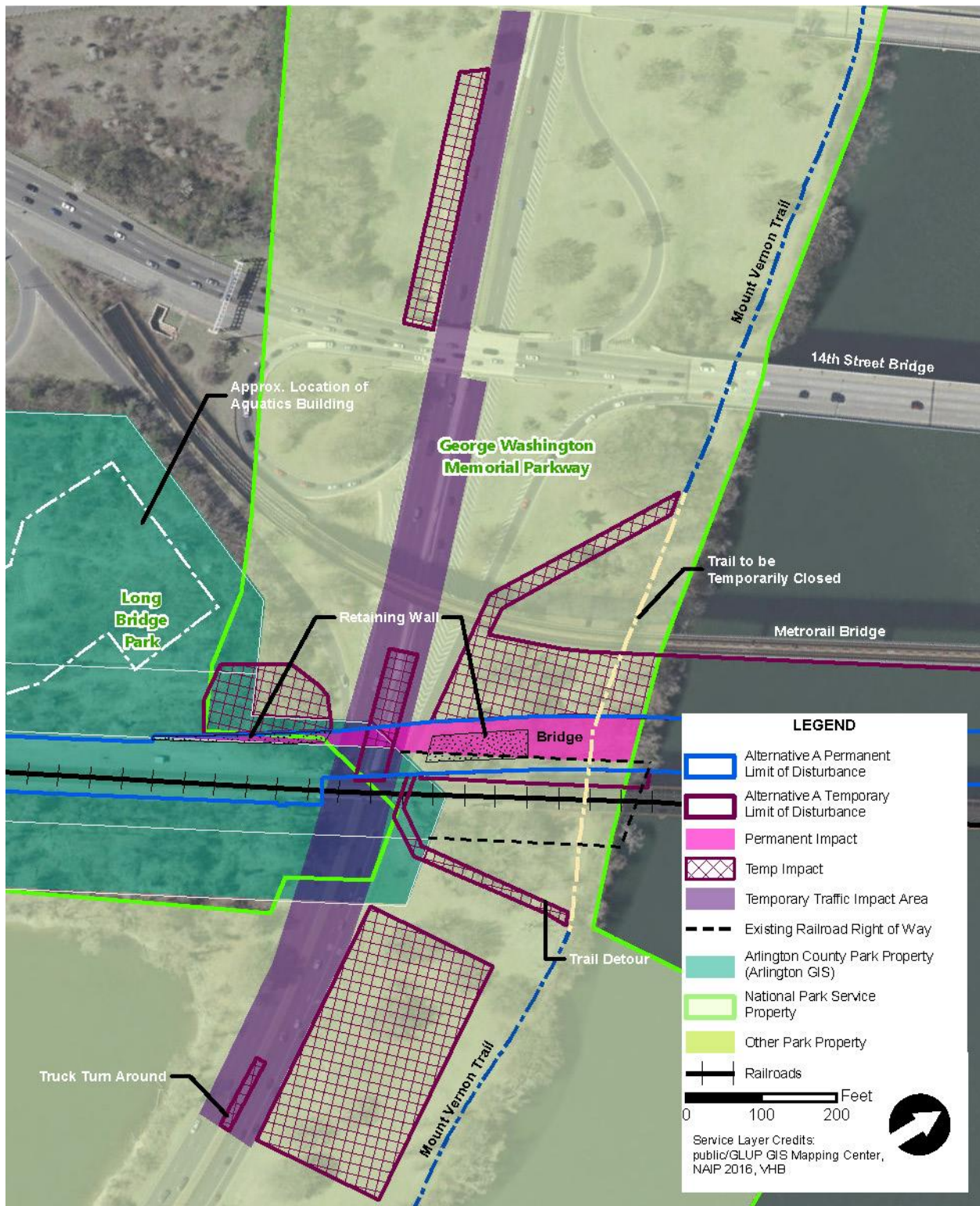
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135 **24.6.1. Long Bridge Park**

136 Long Bridge Park is a Section 4(f) recreational resource owned and administered by Arlington County.
 137 The park provides a variety of recreational uses including sports fields, walkways, playgrounds, and
 138 scenic viewing. Arlington County is currently building the next phase of the park, which includes an
 139 aquatic center and trail loop just north of the existing facilities.

140 Arlington County and NPS parcel data conflict where Long Bridge Park and the GWMP meet
 141 (**Figure 24-3**). Therefore, the permanent and temporary use analyses below present ranges for park
 142 property affected by the Action Alternatives. A title search and survey during later design phases would
 143 determine specific property lines.

144 **Figure 24-3** | Alternative A Section 4(f) Use: Long Bridge Park, GWMP, and MVT



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146 **24.6.1.1. Action Alternative A (Preferred Alternative)**

147 The expanded railroad right-of-way and construction access required for Action Alternative A would
148 permanently incorporate either approximately 0.04 or 0.14 acres and temporarily occupy either
149 approximately 0.01 acres or 0.3 acres of Long Bridge Park. FRA recommends a *de minimis* finding for
150 Long Bridge Park.

151 **Permanent Incorporation Analysis**

152 At the northeast corner of the park, Action Alternative A would permanently expand the railroad right-
153 of-way along the western side of the existing railroad and would encroach into a small, wooded portion
154 of Long Bridge Park (**Figure 24-3**). Available GIS parcel data from Arlington County depicts Arlington
155 County ownership of Long Bridge Park as extending across the existing GWMP roadway just north of the
156 wooded area described above. Based on Arlington County data, the permanent incorporation of Long
157 Bridge Park property discussed above would result from the new bridge over the GWMP roadway. This
158 property information conflicts with GIS parcel data from NPS. As a result, the permanent incorporation
159 of Arlington County property would amount to either approximately 0.04 or 0.14 acres.

160 Recreational use of this area is currently limited due to its vegetated character. According to Arlington
161 County's Long Bridge Park Master Plan, in the future this area will include a meadow, a loop trail, and
162 wooded vegetation. The loop trail may need to be reconfigured where it would run alongside the
163 current railroad right-of-way. Because this small portion of the park is naturally vegetated with little
164 recreational value and because Action Alternative A would not preclude future use of the loop trail, use
165 of this small portion of the park would not adversely affect the features, attributes, or activities
166 qualifying the property for protection under Section 4(f); therefore, FRA proposes a *de minimis* finding.

167 **Temporary Occupancy Analysis**

168 Action Alternative A would temporarily occupy up to approximately 0.3 acres at the northeast corner of
169 Long Bridge Park throughout the construction duration of 4 years and 2 months (**Figure 24-3**).
170 Contractors would use this area for staging and access during construction of the new bridge crossing
171 the GWMP. This area currently consists of scrub-shrub vegetation and Arlington County does not use it
172 for recreation. Use as a staging area would require the clearing of vegetation and possibly hauling in dirt
173 to create a level yard. The Long Bridge Park Master Plan calls for a newly created meadow on sloping
174 land in this area as well as a future extension of the esplanade with landscaped plantings as part of the
175 Long Bridge Aquatics and Fitness Center and Park Expansion (currently under construction and
176 scheduled for completion in 2021). The staging area may encroach into this future recreational resource.

177 The temporary occupancy associated with construction would be for a short duration (less than the time
178 needed for construction of the project), would not result in a change in ownership of the property, and
179 would not result in adverse changes to the activities, features, or attributes of the property. Finally, the
180 land would be fully restored to an equivalent or better condition following completion of the
181 construction activities. Therefore, pending concurrence from Arlington County (the OWJ for this
182 resource), FRA proposes that this temporary occupancy would not constitute a Section 4(f) use of Long
183 Bridge Park.

184 **Constructive Use Analysis**

185 FRA finds there is no constructive use of Long Bridge Park. As described in **Chapter 10, Air Quality and**
186 **Greenhouse Gas Emissions; Chapter 13, Noise and Vibration;** and **Chapter 14, Visuals and Aesthetics,**
187 Action Alternative A would not cause air quality, vibration, or visual impacts that would substantially
188 diminish the protected activities, features, or attributes of Long Bridge Park. Therefore, these impacts
189 would not cause a constructive use of the property.

190 As described in **Chapter 13, Noise and Vibration,** Action Alternative A would cause noise impacts to
191 Long Bridge Park. However, these noise impacts would not cause a constructive use. Long Bridge Park's
192 design integrates the existing railroad Corridor, and the esplanade allows visitors to view the trains.
193 Serenity and quiet are not significant attributes of this section of the park, nor is this section intended
194 for viewing wildlife or other activities that increased noise would disrupt. Therefore, increases in noise
195 would not substantially interfere with the use and enjoyment of the park.

196 **24.6.1.2. Action Alternative B**

197 Action Alternative B would permanently incorporate either approximately 0.04 or 0.14 acres and
198 temporarily occupy either approximately 0.01 or 0.3 acres of this park similar to Action Alternative A.
199 The sections below describe where differences in uses would occur. FRA proposes a *de minimis* finding
200 for Long Bridge Park.

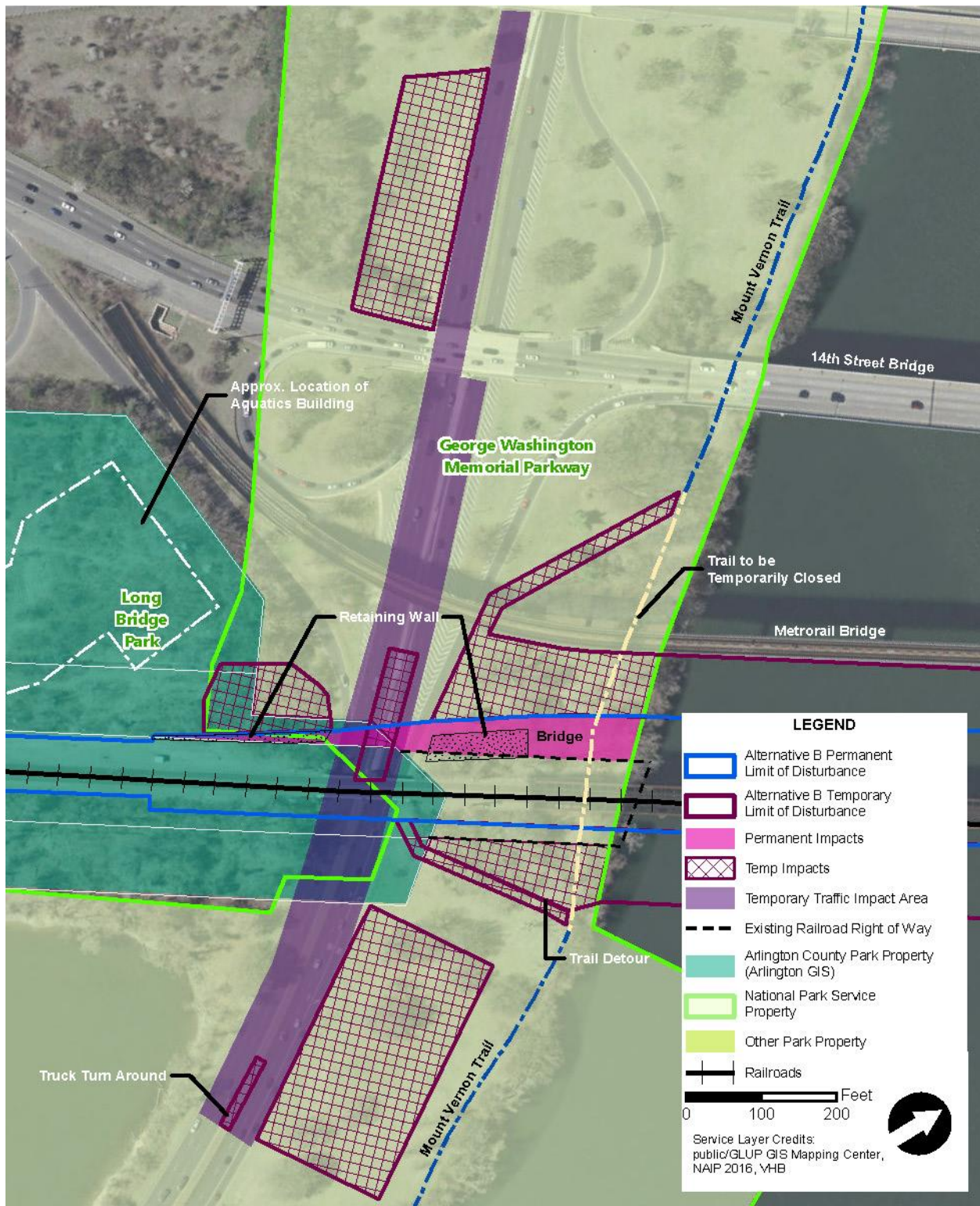
201 **Permanent Incorporation Analysis**

202 Action Alternative B would permanently incorporate the same amount of Long Bridge Park in the same
203 manner as Action Alternative A (**Figure 24-4**). FRA proposes a *de minimis* finding since the impact would
204 not adversely affect the features, attributes, or activities qualifying Long Bridge Park for protection
205 under Section 4(f).

206 **Temporary Occupancy Analysis**

207 Temporary occupancy of Long Bridge Park would be the same as under Action Alternative A but would
208 last a longer duration of approximately 6 years and 8 months. As with Action Alternative A the
209 temporary occupancy associated with construction would be for a short duration (less than the time
210 needed for construction of the project), would not result in a change in ownership of the property, and
211 would not result in adverse changes to the activities, features, or attributes of the property. Finally, the
212 land would be fully restored to an equivalent or better condition following completion of the
213 construction activities. Therefore, pending concurrence from Arlington County (the OWJ for this
214 resource), FRA proposes that this temporary occupancy would not constitute a Section 4(f) use of Long
215 Bridge Park.

216 **Figure 24-4** | Alternative B Section 4(f) Use: Long Bridge Park, GWMP, and MVT



217

218 **Constructive Use Analysis**

219 As with Action Alternative A, there would be no constructive use of Long Bridge Park due to Action
220 Alternative B.

221 **24.6.2. George Washington Memorial Parkway** 222 **(including Mount Vernon Memorial Highway)**

223 The GWMP is both an historic and a recreational resource. Congress established the GWMP, one of the
224 nation's premiere parkways, in the 1930s to commemorate the first President of the United States,
225 provide scenic drives and connectivity to historic sites along the Potomac River, and create an aesthetic
226 entryway into the District. The 25-mile parkway, owned and administered by NPS, runs along the
227 Virginia shoreline of the Potomac River from the Mount Vernon Estate to Great Falls, Virginia. The
228 GWMP also includes the MVMH, which is the original 15.2-mile segment of the scenic parkway
229 commemorating the birth of George Washington. **Chapter 15, Cultural Resources**, and **Chapter 16,**
230 **Recreation and Parks** provide details about the GWMP's historic and recreational attributes.

231 As noted in **Section 24.6.1, Long Bridge Park**, Arlington County and NPS parcel data conflict where Long
232 Bridge Park and the GWMP meet (**Figure 24-3**). Therefore, the analyses below present ranges for the
233 amount of park property affected by the Action Alternatives. A title search and survey during later
234 design phases would be required to determine specific property lines.

235 **24.6.2.1. Action Alternative A (Preferred Alternative)**

236 Action Alternative A would result in the permanent incorporation of either approximately 0.4 acres or
237 0.5 acres of permanent use and a temporary occupancy of either approximately 3.4 acres or 3.8 acres of
238 the GWMP including a perpendicular crossing of the GWMP with a new bridge structure along the
239 western side of the existing Long Bridge.

240 **Permanent Incorporation Analysis**

241 Action Alternative A would permanently incorporate either approximately 0.4 acres or 0.5 acres of the
242 GWMP for the new tracks depending on the outcome of additional property research. Action Alternative
243 A would use up to approximately 0.1 acres (approximately 4,718 square feet) of the park to place the
244 two new railroad tracks on fill with a retaining wall parallel with the tracks between the GWMP roadway
245 and the MVT (**Figure 24-3**). The bridges across the GWMP and near the Potomac River shoreline would
246 incorporate approximately 0.3 acres of park property. Park visitors would continue to have access under
247 the bridges when using the roadway or the MVT.

248 As described in **Appendix E3, Section 106 Assessment of Effects Report**, Action Alternative A would
249 have adverse effects to the GWMP and MVMH historic resources. The removal of contributing
250 vegetation, especially mature trees that date to the 1932 planting plan and were intended to screen the
251 railroad bridge from motorists, would diminish the integrity of design, materials (specifically, the
252 contributing vegetation), and feeling of the GWMP and MVMH. Because Action Alternative A would
253 result in a Section 106 determination of adverse effect to the GWMP and MVMH as historic resources,
254 the Section 4(f) use would not qualify as *de minimis*.

255 Temporary Occupancy Analysis

256 Action Alternative A would occupy multiple sites on GWMP property for construction access and
257 staging, totaling either approximately 3.4 acres or 3.8 acres (**Figure 24-3**). These sites include a field
258 located between the northbound and southbound lanes of I-395; areas immediately southwest,
259 northwest, and northeast of existing GWMP bridge; and an area slightly further east from the north
260 abutment between the GWP and the Potomac River. The sites are necessary for equipment storage,
261 laydown areas for materials, and space for workers to fabricate materials and erect the new bridge
262 structure. At each location, construction would require clearing shrubs and trees and fencing areas with
263 signage. Loss of these trees would diminish the integrity of design, materials (specifically, the
264 contributing vegetation), and feeling of the GWMP. Construction activities would also occupy two small
265 areas in the roadway median to construct a new bridge support and provide a truck turn-around area to
266 the east of the existing bridge.

267 During construction, Action Alternative A would require the temporary closure of approximately
268 600 linear feet of the MVT found on the GWMP property, which is discussed as a separate Section 4(f)
269 recreational resource.

270 Action Alternative A would need approximately 2,000 linear feet of the GWMP for construction vehicle
271 access and the delivery of supplies (**Figure 24-3**). The GWMP has two eastbound and two westbound
272 lanes. During construction of the bridge over the GWMP, traffic control measures would be used to
273 maintain a safe work zone. Temporary lane shifts would be implemented to construct the abutments,
274 pier, and superstructure. Additional construction activities would require intermittent lane closures
275 during nighttime hours for the delivery of large materials. These activities would last over a period of
276 approximately 2 years. A permit from GWMP would be required for construction vehicles to access this
277 area.

278 As described in **Appendix E3, Section 106 Assessment of Effects Report**, Action Alternative A would
279 have a temporary adverse effect to the GWMP and MVMH historic resources due to the location of
280 construction staging and access areas which would diminish the integrity of feeling, association, and
281 setting of the GWMP and MVMH. Because Action Alternative A would result in a Section 106
282 determination of adverse effect to the GWMP and MVMH as historic resources, the Section 4(f) use
283 would not qualify as *de minimis*.

284 Constructive Use Analysis

285 As described in **Chapter 10, Air Quality and Greenhouse Gas Emissions; Chapter 13, Noise and**
286 **Vibration; and Chapter 14, Visuals and Aesthetics**, Action Alternative A would not cause air quality,
287 vibration, noise, or visual impacts that would substantially diminish the protected activities, features, or
288 attributes of the GWMP. Although noise levels would increase along the GWMP/MVMH near the
289 proposed bridge, serenity and quiet are not significant attributes of this section of the resource;
290 therefore, increases in noise would not substantially interfere with the use and enjoyment of the
291 resource. There would be no impacts related to vibration. Additionally, although there would be visual
292 changes to the GWMP/MVMH due to the removal of mature trees, particularly when travelling south
293 under the complex of bridges, Action Alternative A would not impair the overall aesthetic features of the
294 GWMP/MVMH from which it derives its value. Therefore, these impacts would not cause a constructive
295 use of the property.

296 **24.6.2.2. Action Alternative B**

297 Action Alternative B would permanently incorporate either approximately 0.4 acres or 0.5 acres and
298 temporarily occupy either approximately 3.7 acres or 4.1 acres of the GWMP and MVMH. Action
299 Alternative B includes the construction of a new bridge across the GWMP as described under Action
300 Alternative A, as well as the replacement of the existing Long Bridge and railroad bridge across the
301 roadway. NPS considers the railroad bridge across the GWMP roadway a contributing resource to the
302 GWMP and MVMH Historic Districts. Action Alternative B would not cause constructive use of the
303 GWMP and MVMH.

304 **Permanent Incorporation Analysis**

305 Action Alternative B would cause the same permanent incorporation of the GWMP and MVMH as Action
306 Alternative A. Although this alternative would replace the existing railroad crossing at the GWMP, the
307 footprint of the new crossing would fall within the existing railroad right-of-way. Therefore, the
308 replacement of the existing bridge would not require a transfer of land causing a permanent loss of park
309 property (**Figure 24-4**).

310 As described in **Appendix E3, Section 106 Assessment of Effects Report**, Action Alternative B would
311 have adverse effects to the GWMP and MVMH historic resources. The removal of contributing
312 vegetation, especially mature trees that date to the 1932 planting plan and were intended to screen the
313 railroad bridge from motorists, would diminish the integrity of design, materials (specifically, the
314 contributing vegetation), and feeling of the GWMP and MVMH. Because Action Alternative B would
315 result in a Section 106 determination of adverse effect to the GWMP and MVMH as historic resources,
316 the Section 4(f) use would not qualify as *de minimis*.

317 **Temporary Occupation Analysis**

318 Action Alternative B would occupy either approximately 3.7 acres or 4.1 acres of the GWMP and MVMH
319 for staging and laydown areas. Action Alternative B would also occupy 2,000 linear feet of the GWMP
320 and MVMH roadway as described above for Action Alternative A (**Figure 24-4**). Action Alternative B
321 includes removal and replacement of the existing bridge across the GWMP, thus requiring the
322 occupation of additional property within the GWMP and MVMH for a construction area immediately
323 southeast of the existing tracks at the MVT.

324 As described in **Appendix E3, Section 106 Assessment of Effects Report**, Action Alternative B would
325 have a temporary adverse effect to the GWMP and MVMH historic resources due to the location of
326 construction staging and access areas which would diminish the integrity of feeling, association, and
327 setting of the GWMP and MVMH. Because Action Alternative B would result in a Section 106
328 determination of adverse effect to the GWMP and MVMH as historic resources, the Section 4(f) use
329 would not qualify as *de minimis*.

330 **Constructive Use Analysis**

331 As with Action Alternative A, there would be no constructive use of the GWMP and MVMH due to
332 Action Alternative B.

333 24.6.3. Mount Vernon Trail

334 NPS owns and administers the MVT. This 18-mile paved trail for pedestrians and bicyclists stretches
335 from George Washington's Mount Vernon Estate to Theodore Roosevelt Island. The MVT is a
336 recreational resource within the property limits of the GWMP. While the MVT is a major recreation
337 feature within the park, it is not currently a contributing resource to the GWMP or MVMH Historic
338 Districts.

339 24.6.3.1. Action Alternative A (Preferred Alternative)

340 Action Alternative A would temporarily occupy approximately 600 linear feet of the MVT for the
341 construction of a new bridge over the trail. It would not permanently incorporate the resource or result
342 in a constructive use. FRA recommends a *de minimis* finding for the MVT.

343 Permanent Incorporation Analysis

344 Action Alternative A would not cause permanent use of the MVT. While trail users would cross under an
345 additional bridge, the recreational use would continue on the existing trail.

346 Temporary Occupancy Analysis

347 During construction, Action Alternative A would close approximately 600 linear feet of the MVT for
348 approximately 2 years (**Figure 24-3**). The trail closure would enable construction of bridge abutments,
349 retaining walls, and the bridge superstructure. The detour would begin at a point east of the existing
350 Long Bridge underpass and travel west towards the GWMP. The trail could continue alongside the
351 GWMP and travel underneath the railroad bridge and the Metrorail Yellow Line before reconnecting to
352 the existing trail between the Metrorail Yellow Line and the 14th Street Bridge. Where the detoured trail
353 would travel adjacent to the GWMP, temporary barriers between the trail and the roadway would
354 protect trail users. During construction, the movement of vehicles and materials would sometimes
355 require temporary, short-duration full closures of the trail to safeguard users. The short-term closures
356 could last from several minutes to several hours depending on the construction activities.

357 The temporary occupancy associated with construction would be for a short duration (less than the time
358 needed for construction of the project), would not result in a change in ownership of the property, and
359 would not preclude the public's use of the trail for recreational activities. Finally, DRPT would restore
360 the trail to its current route, in an equivalent or better condition, following completion of the
361 construction activities. Therefore, pending concurrence from NPS (the OWJ for this resource), FRA
362 proposes that this temporary occupancy would not constitute a Section 4(f) use of the MVT.

363 Constructive Use Analysis

364 As described in **Chapter 10, Air Quality and Greenhouse Gas Emissions; Chapter 13, Noise and**
365 **Vibration; and Chapter 14, Visuals and Aesthetics**, Action Alternative A would not cause air quality,
366 vibration, noise, or visual impacts that would substantially diminish the protected activities, features, or
367 attributes of the MVT. Although noise levels would increase along the MVT near the proposed bridge,
368 serenity and quiet are not significant attributes of this section of the resource; therefore, increases in
369 noise would not substantially interfere with the use and enjoyment of the resource. There would be no
370 impacts related to vibration. Additionally, although there would be visual changes to the MVT due to the

371 removal of mature trees, particularly when travelling south under the complex of bridges, Action
372 Alternative A would not impair the overall aesthetic features of the MVT from which it derives its value.
373 Therefore, these impacts would not cause a constructive use of the property.

374 **24.6.3.2. Action Alternative B**

375 Action Alternative B would temporarily occupy the same 600 linear feet of this recreational resource as
376 described for Action Alternative A. However, the occupancy would last a longer duration of 5 years and
377 2 months. Action Alternative B would not cause any constructive use. FRA proposes a *de minimis* finding
378 for the MVT.

379 **Permanent Incorporation**

380 There would be no permanent incorporation of the MVT required under Action Alternative B.

381 **Temporary Occupancy**

382 Temporary occupancy of the MVT would be the same as described under Action Alternative A but would
383 last a longer duration of 5 years and 2 months. The temporary use, however, would not preclude the
384 public's use of the trail for recreational activities and once construction is complete, the Virginia
385 Department of Rail and Public Transportation (DRPT), the Project Sponsor for final design and
386 construction, would restore the trail to its current route. The temporary occupancy associated with
387 construction would be for a short duration (less than the time needed for construction of the project),
388 would not result in a change in ownership of the property, and would not preclude the public's use of
389 the trail for recreational activities. Finally, DRPT would restore the trail to its current route, in an
390 equivalent or better condition, following completion of the construction activities. Therefore, pending
391 concurrence from NPS (the OWJ for this resource), FRA proposes that this temporary occupancy would
392 not constitute a Section 4(f) use of the MVT.

393 **Constructive Use Analysis**

394 As with Action Alternative A, there would be no constructive use of the MVT due to Action Alternative B.

395 **24.6.4. East Potomac Park/East and West Potomac Parks Historic District**

396 East Potomac Park is located on a manmade island in the Potomac River in the District. It is a
397 recreational resource and is part of the National Mall and Memorial Parks (NAMA) network
398 (**Figure 24-1**). The park complex offers a wide range of amenities including a public golf course,
399 memorials, a public swimming pool, picnic areas, parking areas, and extensive roads and paths for
400 cyclists, walkers, and runners. The Thomas Jefferson Memorial and George Mason Memorial are in this
401 park on the southern edge of the Tidal Basin.

402 East and West Potomac Parks Historic District encompasses 730 acres of parkland along the Potomac
403 River, developed over approximately 100 years. Most of the land currently making up the parks was
404 once part of the Potomac River. The district's significance derives from its size and many visitor
405 attractions making it unique as an urban park, its use for special events including the National Cherry
406 Blossom Festival, the fact that it provides the setting for various monuments and memorials and
407 provides a backdrop for many other Federal buildings and monuments, and the involvement of many

408 architects, artists, and landscape architects in its design and evolution over 100 years of development.
409 Long Bridge, built in 1904, is a contributing element to the East and West Potomac Parks Historic
410 District.

411 **24.6.4.1. Action Alternative A (Preferred Alternative)**

412 Action Alternative A would permanently incorporate approximately 2.4 acres and temporarily occupy
413 approximately 4.8 acres of East Potomac Park for construction of the new upstream bridge and railroad
414 right-of-way. Action Alternative A would not cause constructive use of East Potomac Park.

415 **Permanent Incorporation Analysis**

416 Permanent incorporation of East Potomac Park includes approximately 2.4 acres of land for the new
417 retaining walls, abutments, and bridges through the park (**Figures 24-5 and 24-6**). The new bridge would
418 require removal of up to four Japanese cherry blossom plantings considered to be contributing
419 resources to the historic district, as well as other mature vegetation within the park. Loss of these
420 features would diminish the integrity of design, the materials (specifically the Japanese cherry blossom
421 plantings themselves), and the feeling of the park. The railroad Corridor widening would also cause
422 removal of an existing linear strip of mature trees next to the existing Long Bridge Corridor between the
423 existing tracks and the I-395 South off-ramp to Ohio Drive SW.

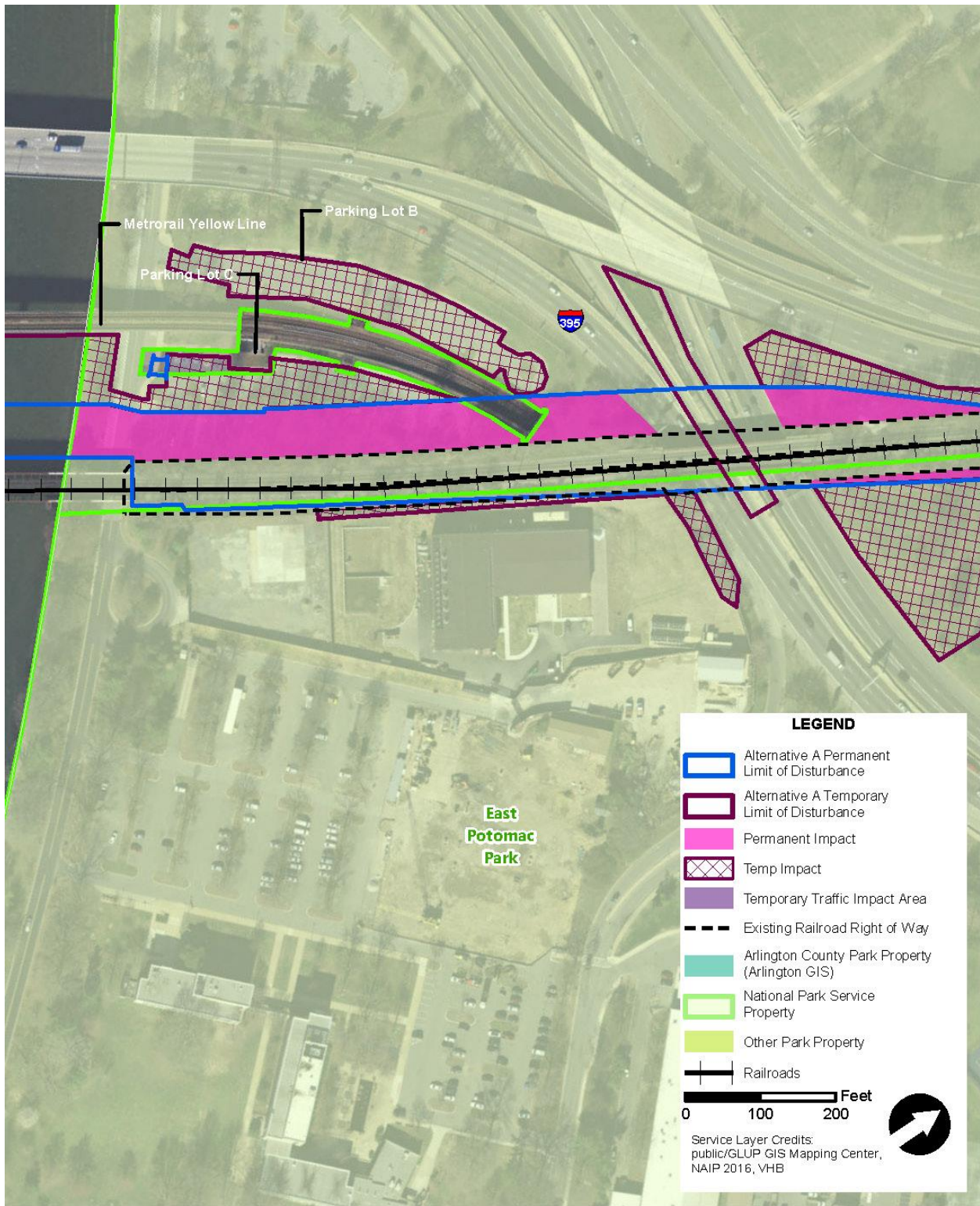
424 NPS has three surface parking areas located in succession along Ohio Drive SW—NPS Parking Lots A, B,
425 and C—which together offer a total of 247 spaces. Action Alternative A would cause the permanent loss
426 of approximately 50 of the existing 67 parking spaces at NPS Parking Lot C to accommodate the addition
427 of two railroad tracks. The public makes heavy use of these surface parking areas in early spring when
428 the Japanese cherry blossom plantings are in bloom around the Tidal Basin. The loss of parking spaces
429 would impact park access by requiring some visitors to park at more distant lots or choose alternate
430 modes of transportation. However, the majority of visitors to the parks use multiple other
431 transportation modes, including Metrorail, bus, walking, bicycling, and water taxi.⁸ In addition, during
432 the National Cherry Blossom Festival, NPS runs the National Cherry Blossom Festival Shuttle between
433 the Jefferson Memorial and more remote parking locations within East Potomac Park.⁹

434 As described in **Appendix E3, Section 106 Assessment of Effects Report**, Action Alternative A would
435 have an adverse effect on East and West Potomac Parks Historic District through incorporation of
436 parkland and removal of up to four contributing Japanese cherry blossom plantings, which would
437 diminish the integrity of setting, design, materials, and feeling of the park. Addition of the new bridge
438 would also obstruct views of the existing Long Bridge from the north, diminishing the visual integrity of
439 the contributing structure and resulting in an adverse effect.

⁸ NPS. National Cherry Blossom Festival Directions. March 2018. Accessed from <https://www.nps.gov/subjects/cherryblossom/directions.htm>. Accessed January 8, 2019.

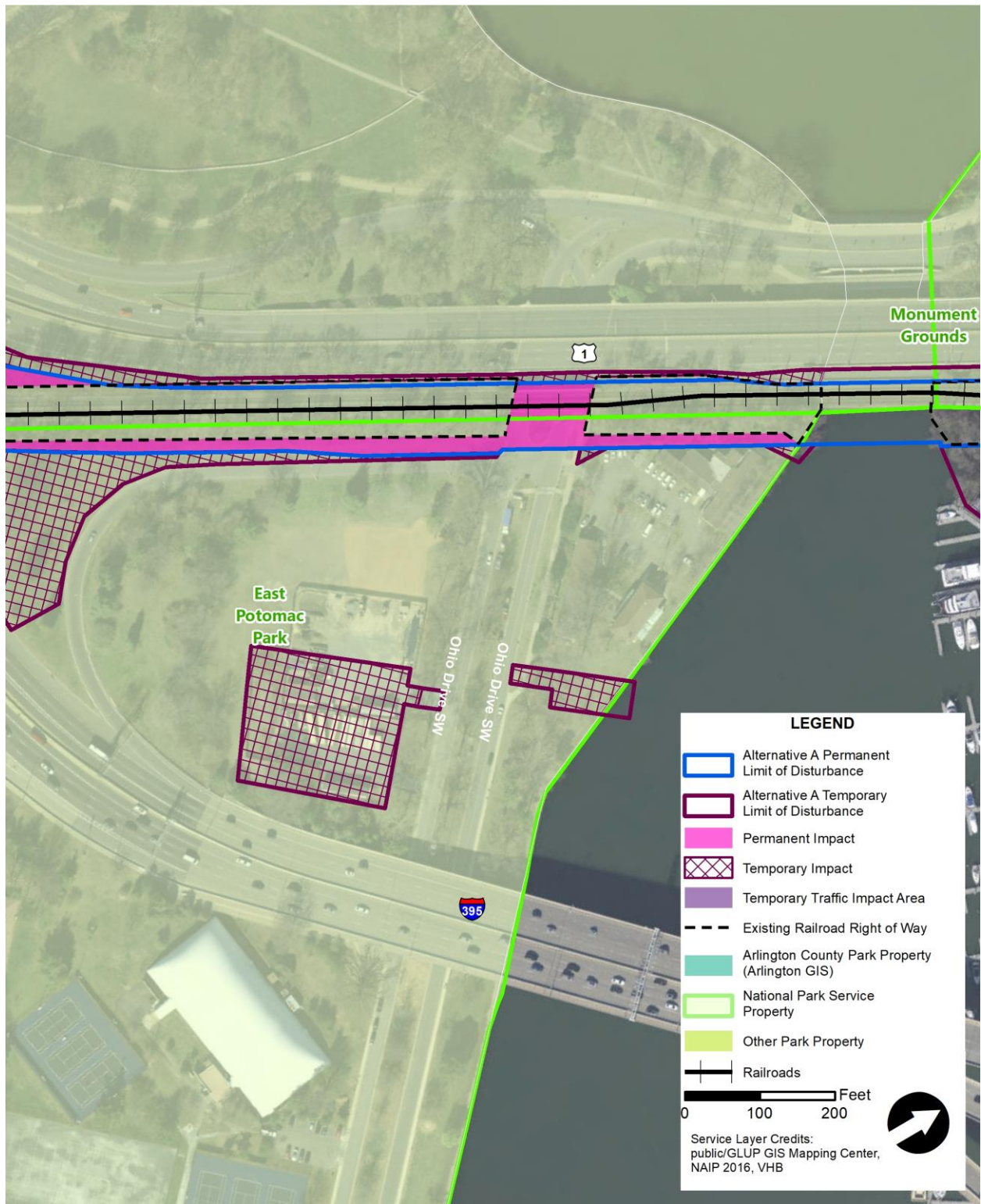
⁹ NPS. National Cherry Blossom Festival Map. Undated. Accessed from https://www.nps.gov/subjects/cherryblossom/upload/Pad_Map_Side_1_FINAL.jpg. Accessed January 8, 2019.

440 **Figure 24-5** | Alternative A Section 4(f) Use: East Potomac Park (Potomac River to I-395)



441

442 **Figure 24-6** | Alternative A Section 4(f) Use: East Potomac Park (I-395 to Washington Channel)



443

444 **Temporary Occupancy Analysis**

445 Temporary occupancy of East Potomac Park would include construction access and staging areas in the
446 existing NPS Parking Lots B and C, as well as existing grassy and open areas totaling approximately 4.8
447 acres of land as shown in **Figures 24-5 and 24-6**. Temporary occupancy would last approximately 4 years
448 and 9 months. Construction activities would cause closure of NPS Parking Lots B and C to the public
449 consisting of 143 parking spaces. As noted above, the public makes heavy use of the surface parking
450 areas in early spring and the use of these areas for construction would impact park access during peak
451 demand by requiring visitors to park at more distant lots or choose alternate modes of transportation.
452 However, the majority of visitors to the parks use other transportation modes that would not be
453 affected by the Project.

454 A temporary staging area off of Ohio Drive SW between I-395 and 14th Street SW as well as a temporary
455 finger pier at the shores of the Washington Channel would be used for approximately 4 years and
456 9 months. NPS has recently restored the baseball field in this location and generates income through
457 fees for field rental.

458 As described in **Appendix E3, Section 106 Assessment of Effects Report**, Action Alternative A would
459 have an adverse effect on East and West Potomac Parks Historic District through the use of portions of
460 the historic district for construction activities.

461 **Constructive Uses**

462 As described in **Chapter 10, Air Quality and Greenhouse Gas Emissions; Chapter 13, Noise and**
463 **Vibration; and Chapter 14, Visuals and Aesthetics**, Action Alternative A would not cause air quality,
464 vibration, noise, or visual impacts that would substantially diminish the protected activities, features, or
465 attributes of East Potomac Park. Therefore, these impacts would not cause a constructive use of the
466 property.

467 **24.6.4.2. Action Alternative B**

468 Action Alternative B would permanently incorporate approximately 2.5 acres temporarily occupy
469 approximately 4.9 acres of East Potomac Park. Action Alternative B would cross East Potomac Park with
470 two new railroad tracks as described for Action Alternative A. As Action Alternative B would replace two
471 existing bridges, it would have more impacts near those bridges including approximately an additional
472 0.1 acres in East Potomac Park. This alternative would cause a temporary occupancy for construction
473 and permanent use for the wider right-of-way. Action Alternative B would also require the removal and
474 permanent loss of the historic Long Bridge, a contributing feature to the East and West Potomac Parks
475 Historic District, to be replaced with a new two-track bridge.

476 **Permanent Incorporation Analysis**

477 Permanent incorporation of East Potomac Park would be similar to Action Alternative A but would have
478 a slightly larger footprint for a wider right-of-way. The new bridge that would replace the existing Long
479 Bridge would be wider; therefore, the railroad footprint approaching the bridge on the shores of East
480 Potomac Park would need to be wider. Permanent incorporation of East Potomac Park would total
481 approximately 2.5 acres. Approximately 2.0 acres would be fill with retaining walls (**Figures 24-7 and 24-**
482 **8**).

483 Long Bridge is a contributing element of the East and West Potomac Parks Historic District. Its loss would
484 diminish the integrity of design, feeling, association, and materials of the historic district. Construction
485 of the two new railroad bridges would require the removal of up to seven contributing Japanese cherry
486 blossom plantings in East Potomac Park, as well as other mature vegetation. Loss of these features
487 would diminish the integrity of design, materials, and feeling of the park.

488 As described in **Appendix E3, Section 106 Assessment of Effects Report**, Action Alternative B would
489 have an adverse effect on East and West Potomac Parks Historic District through removal of the existing
490 Long Bridge, incorporation of parkland and removal of up to four contributing Japanese cherry blossom
491 plantings, which would diminish the integrity of setting, design, materials, and feeling of the park.
492 Addition of the new bridge would also obstruct views of the existing Long Bridge from the north,
493 diminishing the visual integrity of the contributing structure and resulting in an adverse effect.

494 **Temporary Occupation Analysis**

495 Construction staging and access for Action Alternative B would temporarily occupy approximately 4.9
496 acres of East Potomac Park (**Figures 24-7 and 24-8**). Temporary occupancy of NPS Parking Lots B and C
497 and other open space for construction staging and access would be the same as Action Alternative A.
498 Temporary occupancy of East Potomac Park would last approximately 8 years and 1 month.

499 As described in **Appendix E3, Section 106 Assessment of Effects Report**, Action Alternative B would
500 have an adverse effect on East and West Potomac Parks Historic District through the use of portions of
501 the historic district for construction activities.

502 **Constructive Uses**

503 As with Action Alternative A, there would be no constructive use of East Potomac Park due to Action
504 Alternative B.

505 **24.6.5. Hancock Park**

506 NPS owns and administers Hancock Park, an irregularly shaped, 1.3-acre parcel at the northern end of
507 the Study Area (**Figure 24-1**). Located between 9th Street SW and 7th Street SW, the park is bounded by
508 the railroad tracks on the east and C Street SW to the west, and features a landscaped, grassy, open
509 area with pedestrian walkways. Hancock Park is a recreational resource. It is also a contributing
510 reservation to the Plan of the City of Washington Historic District.

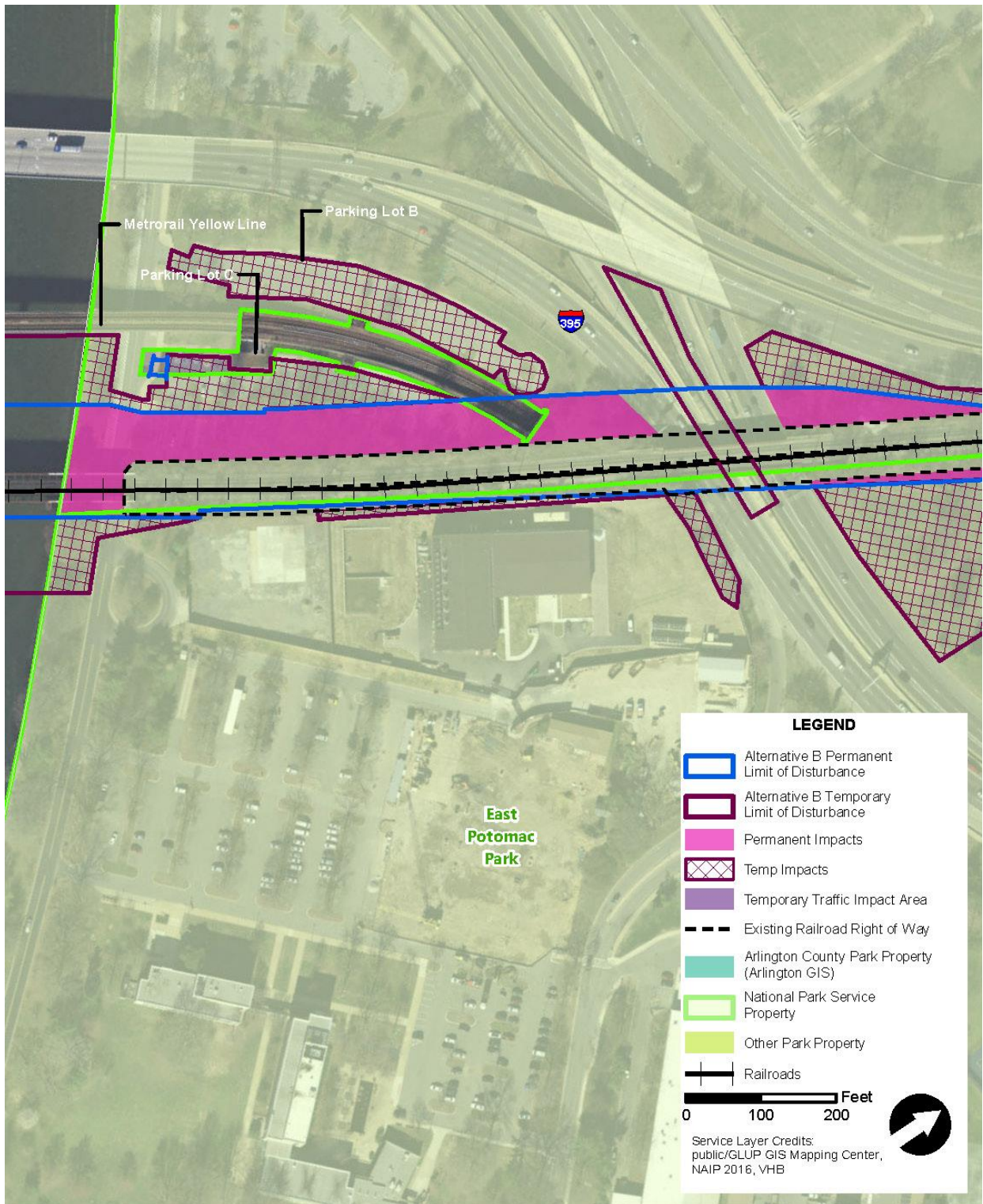
511 **24.6.5.1. Action Alternative A (Preferred Alternative)**

512 There would be no permanent incorporations or constructive uses to Hancock Park. Action Alternative A
513 would temporarily occupy approximately 0.09 acres of Hancock Park for construction access. FRA
514 proposes a *de minimis* finding for Hancock Park.

515 **Permanent Incorporation Analysis**

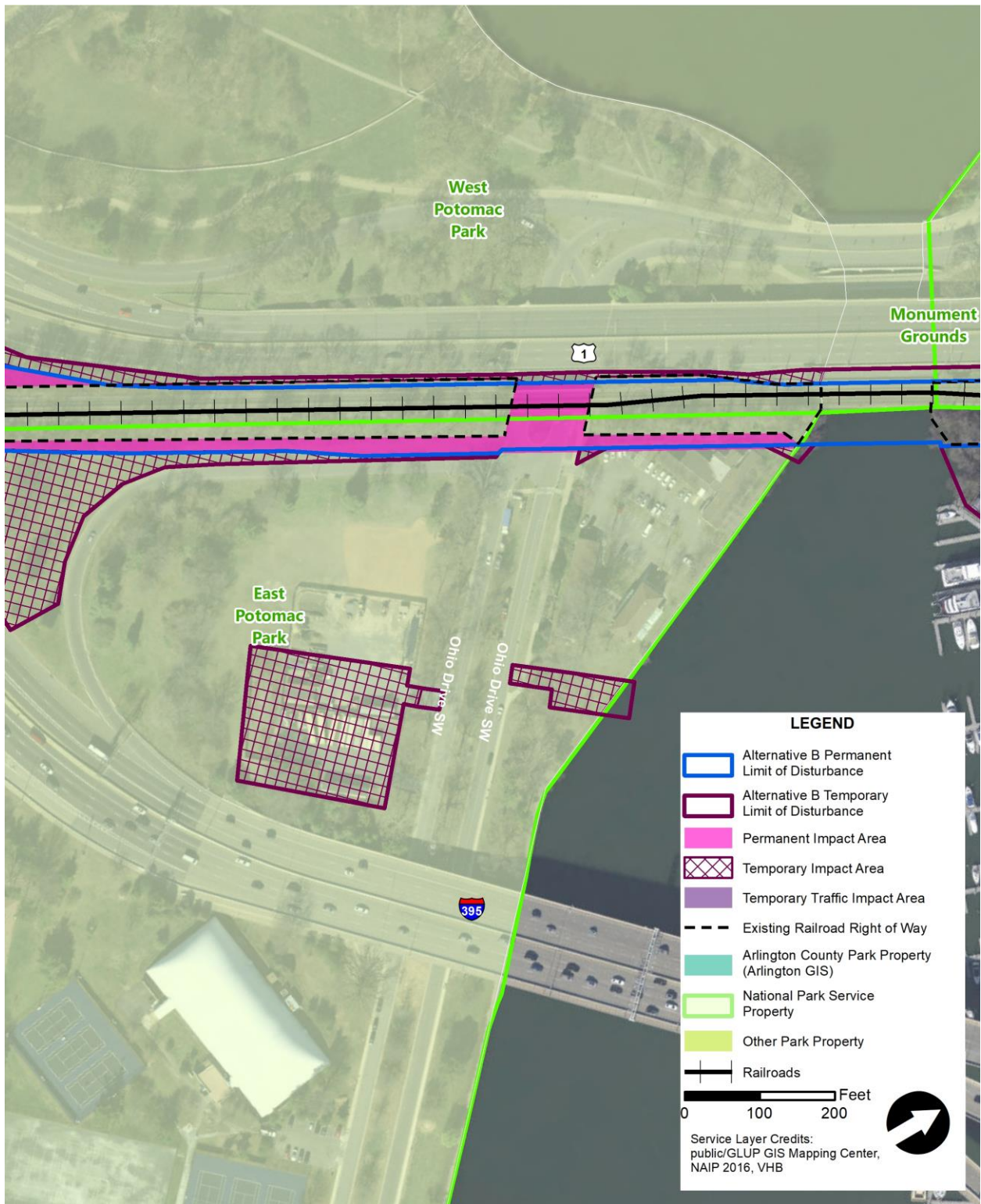
516 Action Alternative A would not cause permanent use of Hancock Park.

517 **Figure 24-7** | Action Alternative B Section 4(f) Use: East Potomac Park (Potomac River to I-395)



518

519 **Figure 24-8** | Alternative B Section 4(f) Use: East Potomac Park (I-395 to Washington Channel)



520

521 **Temporary Occupancy Analysis**

522 Temporary occupancy of Hancock Park includes a construction access area for approximately 3 years
523 (**Figure 24-9**). This access area would allow the contractor to bring railroad materials, equipment, and
524 crews into the railroad Corridor. During construction, there would be a loss of public use of a portion of
525 Hancock Park equal to the size of the access area (approximately 0.09 acres).

526 The temporary occupancy, however, would not preclude the use of the entire park for recreational
527 activities. The portion of the park near 7th Street SW, where the majority of public use occurs in the
528 existing condition, would remain available for continued public use. Upon the completion of
529 construction, DRPT would restore the park to its current condition. The temporary occupancy associated
530 with construction would be for a short duration (less than the time needed for construction of the
531 project), would not result in a change in ownership of the property, and would not result in adverse
532 changes to the activities, features, or attributes of the property. Finally, the land would be fully restored
533 to an equivalent or better condition following completion of the construction activities. Therefore,
534 pending concurrence from NPS (the OWJ for this resource), FRA proposes that this temporary occupancy
535 would not constitute a Section 4(f) use of Hancock Park.

536 **Constructive Use Analysis**

537 As described in **Chapter 10, Air Quality and Greenhouse Gas Emissions; Chapter 13, Noise and**
538 **Vibration; and Chapter 14, Visuals and Aesthetics**, Action Alternative A would not cause air quality,
539 vibration, noise, or visual impacts that would substantially diminish the protected activities, features, or
540 attributes of Hancock Park. Therefore, these impacts would not cause a constructive use of the
541 property.

542 **24.6.5.2. Action Alternative B**

543 Action Alternative B would temporarily occupy the same approximately 0.09 acres of Hancock Park for
544 construction activities as Action Alternative A. There would be no permanent incorporation or
545 constructive uses to Hancock Park. FRA proposes a *de minimis* finding for Hancock Park.

546 **Permanent Incorporation Analysis**

547 As with Action Alternative A, Action Alternative B would not cause permanent use of Hancock Park.

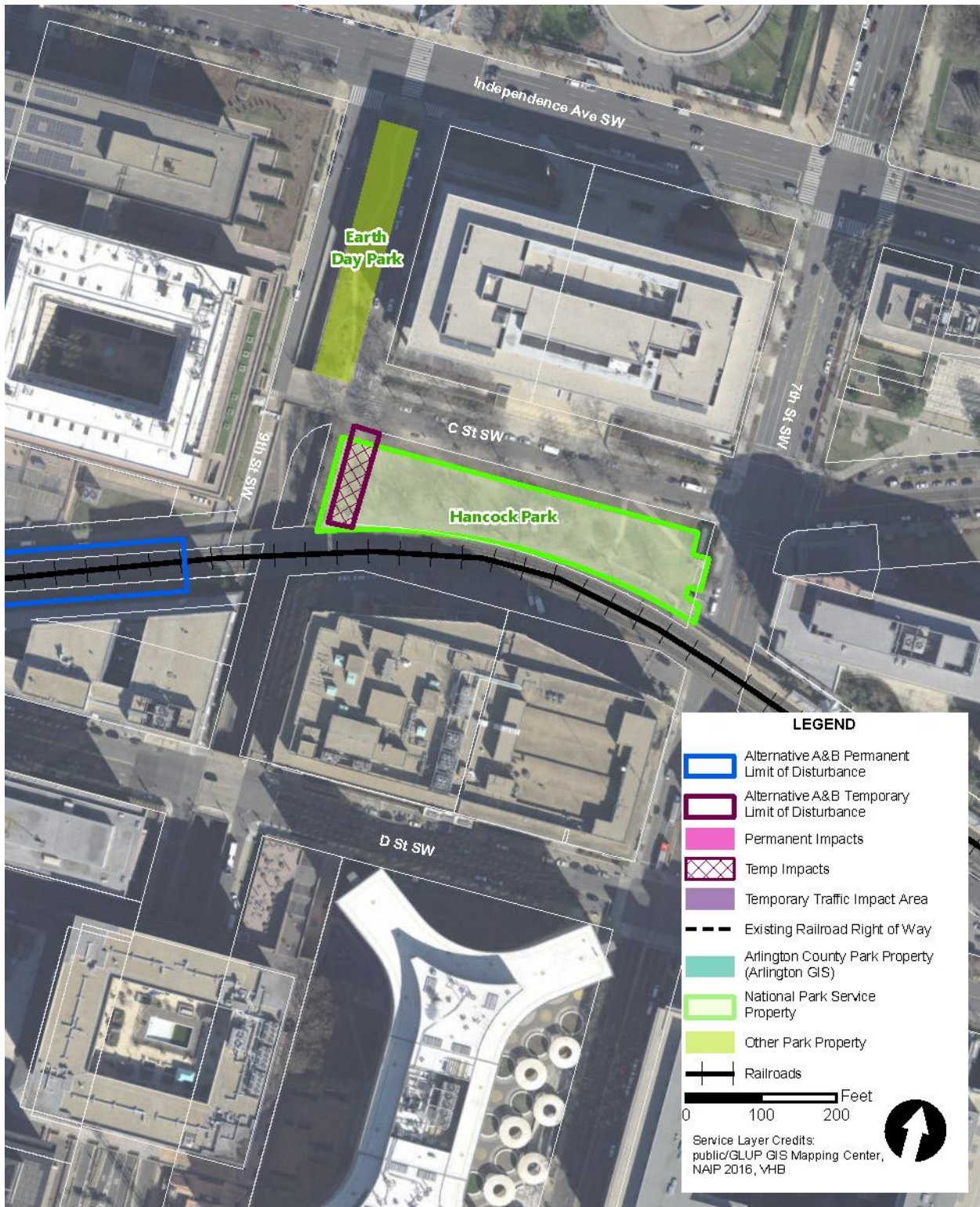
548 **Temporary Occupancy Analysis**

549 As with Action Alternative A, Action Alternative B would require the temporary occupation of land
550 totaling approximately 0.09 acres for construction just as Action Alternative A (**Figure 24-9**). The
551 duration of the construction activities would be longer at approximately 5 years. As with Action
552 Alternative A, this use would not adversely affect the activities, features, and attributes that qualify the
553 property for protection under Section 4(f). Therefore, FRA proposes a *de minimis* finding.

554 **Constructive Use Analysis**

555 As with Action Alternative A, Action Alternative B would not cause constructive use of Hancock Park.

556 **Figure 24-9** | Action Alternatives A and B Section 4(f) Use: Hancock Park



557

558 **24.6.6. Plan of the City of Washington**

559 The Plan of the City of Washington Historic District incorporates the street grid, diagonal avenues, parks,
560 vistas among monuments, and sites over Federal land within the L'Enfant Plan boundary. The listing
561 includes original elements of Pierre Charles L'Enfant's plan for the City of Washington, including later
562 elements proposed by the McMillan Commission. Hancock Park is a contributing element to this historic
563 district.

564 **24.6.6.1. Action Alternative A (Preferred Alternative)**

565 Action Alternative A would cause temporary occupancy of Hancock Park, a contributing element to the
566 Plan of the City of Washington, for construction staging and access. There would be no permanent
567 incorporation or constructive uses to the Plan of the City of Washington. FRA proposes a *de minimis*
568 finding for the Plan of the City of Washington.

569 **Permanent Incorporation Analysis**

570 Action Alternative A would not cause permanent use of the Plan of the City of Washington.

571 **Temporary Occupancy Analysis**

572 Temporary occupancy of Hancock Park as described above in **Section 24.6.5, Hancock Park** would not
573 diminish the integrity of design, materials, workmanship, feeling, and association of the Plan of the City
574 of Washington. **Appendix E3, Section 106 Assessment of Effects Report**, submitted to DC SHPO, VDHR,
575 and ACHP on December 7, 2018, finds Action Alternative A would have no adverse effect on the Plan of
576 the City of Washington as a historic resource. The temporary occupancy associated with construction
577 would be for a short duration (less than the time needed for construction of the project), would not
578 result in a change in ownership of the property, and would not result in adverse changes to the
579 activities, features, or attributes of the property. Finally, the land would be fully restored to an
580 equivalent or better condition following completion of the construction activities. Therefore, pending
581 concurrence from NPS (the OWJ for this resource), FRA proposes that this temporary occupancy would
582 not constitute a Section 4(f) use of Hancock Park.

583 **Constructive Use Analysis**

584 As described in **Chapter 10, Air Quality and Greenhouse Gas Emissions; Chapter 13, Noise and**
585 **Vibration; and Chapter 14, Visuals and Aesthetics**, Action Alternative A would not cause air quality,
586 vibration, noise, or visual impacts that would substantially diminish the protected activities, features, or
587 attributes of Hancock Park. Therefore, these impacts would not cause a constructive use of the Plan of
588 the City of Washington.

589 **23.6.6.2 Action Alternative B**

590 Action Alternative B would require the same temporary use of Hancock Park, a contributing reservation
591 to the Plan of the City of Washington, for construction activities as Action Alternative A, for which FRA
592 recommends a *de minimis* finding. There would be no permanent or constructive uses to Hancock Park.
593 FRA proposes a *de minimis* finding for the Plan of the City of Washington.

594 **24.7. Avoidance Alternatives Analysis**

595 For each Section 4(f) resource for which the Project would result in a “use,” this section provides an
596 alternatives analysis as required by Section 4(f). The alternatives analysis demonstrates that there are
597 no feasible and prudent avoidance alternatives. This section provides the rationale for determining that
598 the Action Alternatives are compliant with Section 4(f). Each such alternative includes a discussion of
599 whether the alternative is feasible and prudent.

600 A feasible and prudent avoidance alternative avoids using Section 4(f) property. In assessing the
601 importance of protecting the Section 4(f) property, it is appropriate to consider the relative value of the
602 resource to the preservation purpose of the statute.

603 An alternative is *not feasible* if it cannot be built as a matter of sound engineering judgement.
604 Furthermore, an alternative is *not prudent* if:

- 605 1. It compromises the project to a degree that it is unreasonable to proceed with the project in
606 light of its stated purpose and need;
- 607 2. It results in unacceptable safety or operational problems;
- 608 3. After reasonable mitigation, it still causes:
 - 609 a. Severe social, economic, or environmental impacts;
 - 610 b. Severe disruption to established communities;
 - 611 c. Severe disproportionate impacts to minority or low-income populations; or,
 - 612 d. Severe impacts to environmental resources protected under other Federal statutes;
- 613 4. It results in additional construction, maintenance, or operational costs of an extraordinary
614 magnitude;
- 615 5. It causes other unique problems or unusual factors; or
- 616 6. It involves multiple factors of the above, that while individually minor, cumulatively cause
617 unique problems or impacts of extraordinary magnitude.

618 The existing railroad Corridor occurs within a section of the District and Arlington County bisecting
619 numerous parks and historic sites. As described in **Appendix B1, Alternatives Development Report**, an
620 initial step in the Project’s evaluation in accordance with NEPA, was a multi-phase concept screening
621 and alternatives development process. FRA and DDOT conducted the screening process to identify build
622 alternatives that meet the Purpose and Need of the Project. FRA and DDOT developed and evaluated a
623 total of 19 concepts, including 8 concepts that could potentially avoid the large parks on either side of
624 the Potomac River (the GWMP and East Potomac Park) via tunnels or alternative corridors. **Chapter**
625 **3.1.3, Concept Screening Process**, describes this process in detail. FRA and DDOT evaluated the
626 concepts against a two-tiered set of criteria:

- 627 • The first level of screening assessed the concepts based on their ability to meet the Project
628 Purpose and Need.
- 629 • The second level of screening evaluated the retained concepts first without and then with
630 alignment options based on additional Purpose and Need metrics, as well as feasibility metrics.

631 As a result of this screening evaluation, FRA and DDOT identified three alternatives for analysis in the
632 EIS: the No Action Alternative, Action Alternative A (Preferred Alternative), and Action Alternative B.
633 **Section 24.4, Alternatives**, summarizes these alternatives, while **Chapter 3.2, DEIS Alternatives**,
634 provides a detailed description.

635 **Table 24-3** lists the 19 concepts developed and evaluated in the preliminary screening process and
636 describes the conclusions for this Section 4(f) evaluation related to their feasibility and prudence. The
637 table further distinguishes between alternatives that avoid a use of Section 4(f) resources and those that
638 do not. This table reports the results of both the Level 1 and Level 2, Step 1 concept screenings. Note
639 that for the alternatives using a crossing *or* tunnel, only the tunnel option could avoid Section 4(f)
640 resources.

641 For purposes of Section 4(f) evaluation, any alternative that does not meet the Project’s Purpose and
642 Need is not prudent. The following sections provide additional explanation for why the No Action
643 Alternative, tunnel concepts, and new corridors would not be prudent or feasible.

644 As shown in **Table 24-2**, most of the alternatives considered would not avoid the use of the Section 4(f)
645 resources listed in **Table 24-1**. The alternatives that would avoid the use of Section 4(f) resources—
646 alternatives using a tunnel below the Potomac River and Washington Channel and alternatives using a
647 new corridor entirely—are not feasible because they cannot be built as a matter of sound engineering
648 judgement; would result in additional construction, maintenance, or operational costs of an
649 extraordinary magnitude; or would not meet the Project Purpose and Need and are therefore not
650 prudent.

651 After evaluation, FRA and DDOT determined that there is no feasible and prudent avoidance alternative
652 for the Project.

653 **24.7.1. No Action Alternative**

654 The No Action Alternative would not expand the existing railroad right-of-way from two to four tracks,
655 and would not construct a new crossing of the GWMP and Potomac River. Therefore, it would not
656 require use of any Section 4(f) resources. However, it would also not meet the Project Purpose and
657 Need because the Long Bridge Corridor must provide more than two tracks top meet future railroad
658 capacity and redundancy needs. Therefore, the No Action Alternative is not a prudent avoidance
659 alternative.

660 **24.7.2. Tunnel Concepts**

661 Concepts using a tunnel underneath the Potomac River could avoid the use of the Section 4(f) properties
662 listed in **Table 24-1** by traveling underneath the properties. However, a tunnel would not be prudent
663 because without connections to VRE Crystal City Station, VRE L’Enfant Station, and the Virginia Avenue
664 Tunnel at a grade usable by both passenger and freight trains it would not meet the Project Purpose and
665 Need.

666 **Table 24-3** | Section 4(f) Screening Evaluation of Concepts Developed During the NEPA Process

Alternative	Section 4(f) Evaluation
Alternatives That Could Avoid Section 4(f) Resources	
No-Action	Does not meet Project Purpose and Need; therefore, is not prudent.
Three-Track Tunnel	Does not meet Project Purpose and Need; therefore, is not prudent.
Four-Track Tunnel	Does not meet Project Purpose and Need; therefore, is not prudent.
Two-Track Crossing; Two-Track Tunnel	Does not meet Project Purpose and Need; therefore, is not prudent.
Five Plus-Track Crossing or Tunnel	Does not meet Project Purpose and Need; therefore, is not prudent.
Five Plus-Track Crossing or Tunnel with Bike-Ped Path	Does not meet Project Purpose and Need; therefore, is not prudent.
Five Plus-Track Crossing or Tunnel with Streetcar	Does not meet Project Purpose and Need; therefore, is not prudent.
Five Plus-Track Crossing or Tunnel with Vehicle Lanes	Does not meet Project Purpose and Need; therefore, is not prudent.
New Corridor – Retain or Replace Existing	Does not meet Project Purpose and Need; therefore, is not prudent.
New Corridor – Remove Existing	Does not meet Project Purpose and Need; therefore, is not prudent.
Alternatives That Could Not Avoid Section 4(f) Resources	
Two-Track Bridge	Does not meet Project Purpose and Need; therefore, is not prudent.
Three-Track Crossing	Does not meet Project Purpose and Need; therefore, is not prudent.
Three-Track Crossing with Bike-Ped Path	Does not meet Project Purpose and Need; therefore, is not prudent.
Three-Track Crossing with Streetcar	Does not meet Project Purpose and Need; therefore, is not prudent.
Three-Track Crossing with Vehicle Lanes	Does not meet Project Purpose and Need; therefore, is not prudent.
Four-Track Crossing	Does not meet Project Purpose and Need; therefore, is not prudent.
Four-Track Crossing with Bike-Ped Path	Does not meet Project Purpose and Need; therefore, is not prudent.
Four-Track Crossing with Streetcar	Does not meet Project Purpose and Need; therefore, is not prudent.
Four-Track Crossing with Vehicle Lanes	Does not meet Project Purpose and Need; therefore, is not prudent.

667

668 The tunnel concepts could not meet the Project’s Purpose and Need, which requires that any new
669 infrastructure retain the potential for interoperability between passenger and freight trains while at the
670 same time maintaining network connectivity. There is no engineering solution that would meet both
671 requirements. Based on previous studies, a tunnel under the Potomac River and Washington Channel
672 would need to be at least 80 feet deep to avoid existing infrastructure (for example, Metrorail). Given
673 the grade requirements for freight trains (1.25 percent) and the need for the tunnel to connect to VRE
674 Crystal City Station, VRE L’Enfant Station, and the Virginia Avenue Tunnel, the distance of an 80-foot-
675 deep tunnel would require grades that would prevent freight trains from using the tunnel. In addition,
676 the resiliency and redundancy criterion based on the Purpose and Need required that all tracks be
677 usable by both passenger and freight trains. Therefore, any concepts that cannot accommodate both
678 passenger and freight trains (such as a passenger railroad–only tunnel) are inconsistent because they do
679 not enable redundancy.

680 **24.7.3. New Corridors**

681 Concepts using a new corridor rather than or in addition to the existing Long Bridge Corridor could avoid
682 the use of the Section 4(f) properties listed in **Table 24-1** by avoiding a Potomac River crossing near the
683 Monumental Core. However, a new corridor would not be prudent because it would not meet the
684 Purpose and Need of the Project, and it would likely result in severe social, economic, and
685 environmental impacts.

686 In terms of Purpose and Need, a new corridor would fail to serve as a critical link connecting the local,
687 regional, and national transportation network because it would not facilitate connections to existing
688 railroad stations, employment and residential nodes, freight railroad infrastructure, and other modes of
689 transportation; connecting to these options would bypass existing facilities. The screening of
690 alternatives did not evaluate specific rerouting options. However, analysis completed for the *Virginia*
691 *Avenue Tunnel Environmental Impact Statement* found that alternative routes that had previously been
692 studied would require a new bridge over the Potomac River and more than 30 miles of new railroad,
693 would traverse several communities, would affect diverse natural resources, and would have extremely
694 high costs (from over \$3 billion to over \$4 billion in 2007 dollars).¹⁰

695 **24.7.4. Construction Staging and Access**

696 The Project Area encompasses a variety of properties, including privately owned mixed-use
697 developments and multi-story buildings, several highly-traveled roadway networks, numerous
698 underground utilities, and public parks located on both sides of the Potomac River. Construction
699 engineers and planners assessed the construction activities, materials, and equipment required to
700 complete the Project under normal train operations. They reviewed the Corridor and surrounding areas
701 extensively for locations that could provide construction access and staging areas that would avoid
702 temporary uses at Section 4(f) properties. Due to the density of land uses surrounding the Corridor,
703 opportunities for construction staging locations and access are limited. This results in necessary and
704 unavoidable temporary uses of Section 4(f) properties including Long Bridge Park, GWMP, East Potomac
705 Park, and Hancock Park. Avoiding these areas would cause construction inefficiencies, including longer

¹⁰ FHWA and DDOT. Virginia Avenue Tunnel Project Environmental Impact Statement, Chapter 3.7: Alternative Concepts Considered But Rejected. May 2014. Accessed from <https://cdxnodengn.epa.gov/cdx-enepa-ll/public/action/eis/details?eisId=87781>. Accessed January 9, 2019.

706 construction durations, severe impacts to roadway networks and train operations throughout
707 construction, inaccessible construction activities, and increased construction costs.

708 **24.8. Planning Undertaken to Minimize Harm**

709 When there is no feasible and prudent alternative to the use of a Section 4(f) resource, the Project must
710 include all possible planning to minimize harm to the Section 4(f) property. This section provides a
711 summary of the planning efforts undertaken to minimize harm to each Section 4(f) resource that cannot
712 be avoided, including, as appropriate, the results of consultation with VDHR and DC SHPO. FRA will
713 update this section based on the results of continued coordination with the NPS, VDHR, DC SHPO, and
714 Arlington County. These entities are the OWJs for the Section 4(f) properties identified in **Section 24.5,**
715 **Section 4(f) Protected Properties.** Plans to minimize harm for the two Action Alternatives are nearly the
716 same. **Section 24.9, Least Overall Harm Analysis,** provides a summary of the differences to minimize
717 harm between the alternatives.

718 Conceptual engineering for each of the Action Alternatives minimized harm to Section 4(f) resources by
719 staying within the existing railroad right-of-way to the extent practicable. In addition, mitigation
720 measures, such as restoring vegetation to areas cleared for construction staging and adding new
721 landscaping, are proposed to minimize visual impacts on Long Bridge Park, GWMP, MVT, East Potomac
722 Park, and Hancock Park.

723 For those locations where construction would be outside of the current right-of-way, FRA and DDOT
724 identified staging and work areas that provide suitable construction access, sufficient space for storing
725 equipment and supplies, and safety to workers and the public, all while minimizing harm to Section 4(f)
726 properties. The sections below describe specific steps to minimize harm to each of the Section 4(f) park
727 properties. **Figures 24-10 and 24-11** illustrate the changes made in construction staging plans for each
728 Action Alternative to minimize harm to Section 4(f) resources.

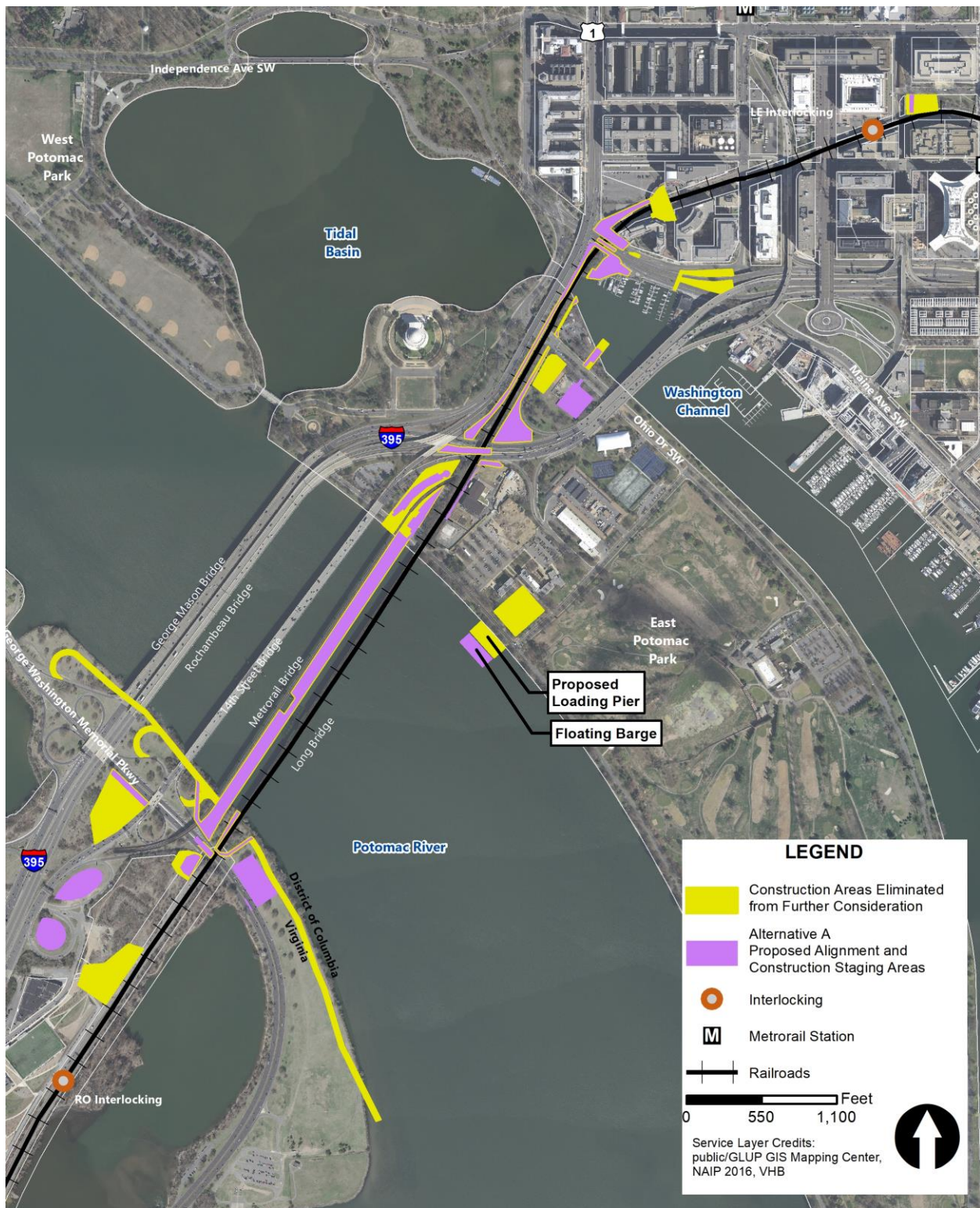
729 **24.8.1. Long Bridge Park**

730 The Action Alternatives include the addition of railroad tracks within the railroad right-of-way, with
731 widening to the west along the eastern edge of Long Bridge Park. Steps to minimize harm to the park
732 include realigning the track design and modifications to access and staging areas.

733 **Track Design:** Early conceptual engineering plans proposed expanding the tracks to the east of the
734 existing alignment, away from Long Bridge Park. This configuration would require replacing an existing
735 culvert under the railroad with a longer structure, therefore placing a culvert structure and headwall in
736 wetlands adjacent to Roaches Run. Constructing the culvert would also impact Long Bridge Park. After
737 further coordination with the Washington, DC to Richmond Southeast High Speed Rail Project (DC2RVA),
738 FRA and DDOT determined the tracks would be expanded on the west side of the right-of-way instead of
739 the east. This eliminates the need for the culvert extension and limits the impacts to Long Bridge Park.

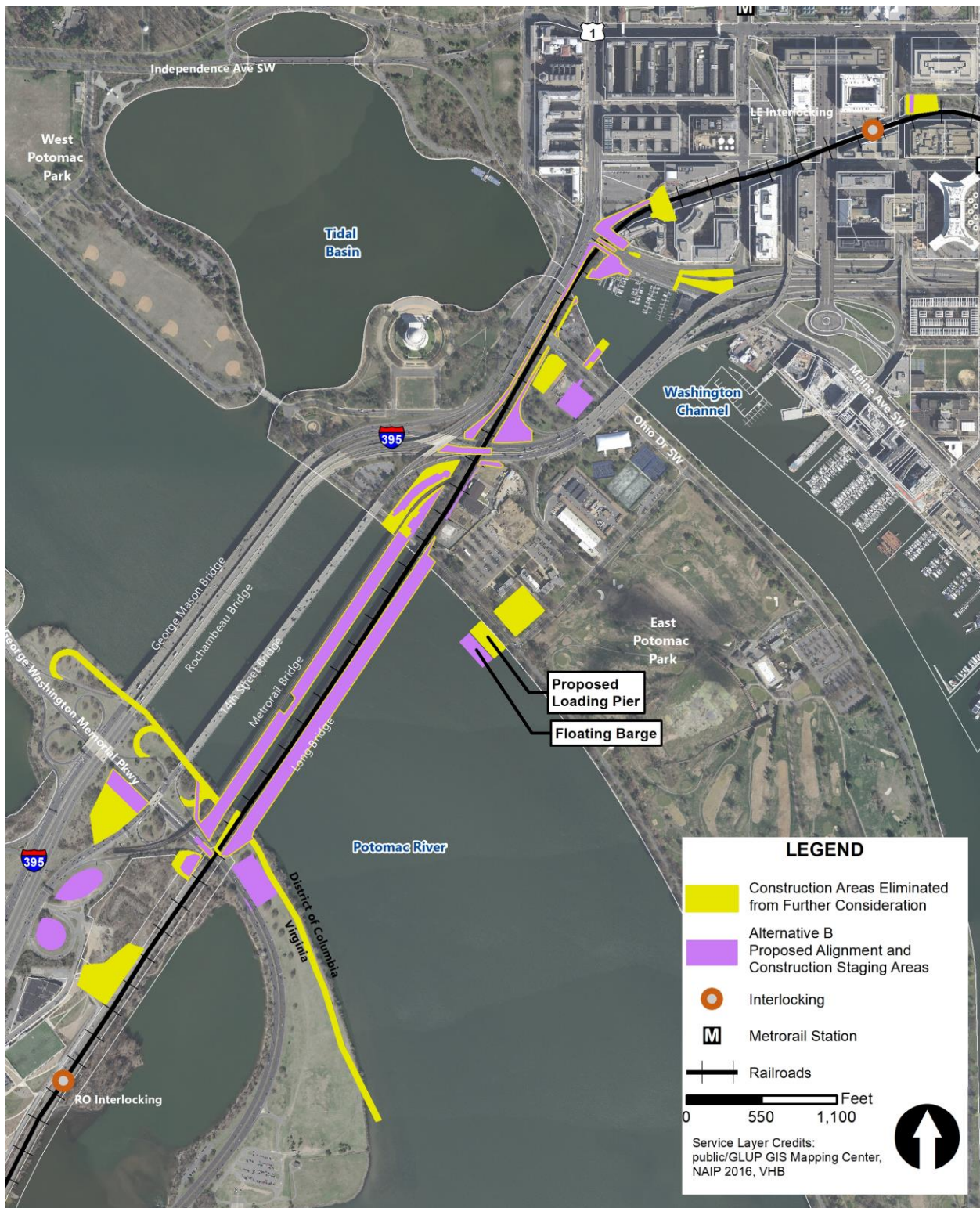
740 **Access:** Construction crews would require access to the railroad right-of-way along the eastern edge of
741 Long Bridge Park. FRA and DDOT chose access points at the extreme northern and southern ends of the
742 park, respectively at GWMP and Crystal Drive. These entry points would not interfere or harm any
743 existing recreational features or attributes. Furthermore, Arlington County began construction of a new
744 aquatics center north of the existing sports fields and this area would be avoided by Long Bridge
745 construction crews.

746 **Figure 24-10** | Action Alternative A Minimization of Temporary Use Comparison



747

748 **Figure 24-11** | Action Alternative B Minimization of Temporary Use Comparison



749

750 **Staging:** The contractor would require staging areas to safely and securely store materials and
751 equipment during construction. Designers initially considered a 1.9-acre staging area in the center of the
752 Long Bridge Park property just north of the existing sports fields. FRA and DDOT determined that this
753 location would interfere with future construction of the new aquatics center, and as a result, moved the
754 proposed staging areas to interior sections of the I-395 and Boundary Channel Drive interchange outside
755 of park boundaries.

756 **24.8.2. George Washington Memorial Parkway and Mount Vernon Trail**

757 Early in the planning process, FRA and DDOT reached out to NPS, DC SHPO, and VDHR to hear their
758 concerns regarding protection of NPS properties and historic sites given their legislative and policy
759 mandates. Based on these early meetings, Project designers created a conceptual construction access
760 and staging area design to facilitate future discussions. After further rounds of discussions with NPS staff
761 from GWMP, NAMA, and the National Capital Region (NCR) regarding the initial construction access and
762 staging design, FRA and DDOT made modifications to the locations of construction and staging areas.
763 The construction access and staging areas presented in this EIS reflects those modifications.

764 The current construction access and staging areas plan reduces impacts to Section 4(f) resources in
765 some areas and increases impacts in others. **Figures 24-10 and 24-11** compare the initial construction
766 access and staging plan with the revised plan for each of the Action Alternatives. The sections below
767 provide information about minimization of harm for the GWMP and MVT.

768 NPS maintains an enforceable policy that allows no commercial trucks on the GWMP. To comply with
769 NPS policy, designers evaluated the use of other transportation routes to get materials and equipment
770 to the construction site and considered all possible access routes to minimize harm to the GWMP.

771 **Initial Access and Staging Plan:** To construct the bridges over the GWMP and MVT, construction crews
772 would require access to the center piers and abutments. Initial reviews of the site proposed access
773 routes from a barge at Gravelly Point, located 0.43 miles south of Long Bridge. In this initial plan,
774 construction vehicles would use the MVT to travel back and forth to Gravelly Point. Vehicles could also
775 access the MVT via temporary exit ramps from I-395. This concept avoided use of the GWMP roadway
776 to the extent practicable and eliminated the need for a staging area immediately east of the existing
777 bridge alignment. However, this concept had a greater impact on other GWMP resources including
778 closure of this section of the MVT to the public for the duration of construction.

779 **Revised Access and Staging Plan:** To avoid the impacts described above, designers developed a plan
780 making use of the staging areas at Boundary Channel Drive and access via I-395 and a short (0.38-mile)
781 section of the GWMP roadway. This plan would require an additional staging area immediately east of
782 the existing bridge alignment as well as a staging area between I-395 and the GWMP. Designers initially
783 proposed a 2.6-acre staging area on the parcel between I-395 and the GWMP, which is partially wooded
784 with a grassy field. Following further coordination with NPS, designers reduced the size of this site to the
785 approximately 1.2 acres occupied by the grassy field, minimizing impacts to mature trees.

786 **24.8.3. East Potomac Park**

787 Both Action Alternatives would require expanded right-of-way at East Potomac Park to make room for
788 the additional two tracks. FRA and DDOT took steps to minimize harm to these parks related primarily to
789 construction access and staging. The limited space and existing infrastructure adjacent to the right-of-

790 way make this particularly challenging. Few feasible opportunities exist to minimize impacts to East
791 Potomac Park to accommodate vehicular and equipment access. Construction would not alter the
792 existing road network, and existing on/off-ramps to 14th Street SW and I-395 would be used to access
793 Ohio Drive SW and other points of entry to the construction zone within the park

794 **Initial Access and Staging Plan:** To minimize traffic impacts within the park, designers initially
795 considered bringing equipment and supplies to construction staging areas within the park via barge. This
796 concept would require the construction of a loading and unloading finger pier in the Potomac River
797 along the shoreline near the intersection of Ohio Drive SW and Buckeye Drive (**Figures 24-10 and 24-11**).
798 It would also require a 2.1-acre staging yard across the street on a site currently occupied by temporary
799 office trailers for the NPS NCR headquarters renovation project. In addition, the concept would likely
800 require channel dredging of shallow water around the barge loading finger pier to prevent barge motors
801 from scouring the river bottom.

802 **Revised Access and Staging Plan:** Following coordination with NPS, FRA and DDOT revised the plan
803 described above. Revisions included use of finger piers, which have a smaller impact to the river bottom,
804 rather than finger piers, and use of a spud barge rather than a finger pier at Buckeye Drive to avoid the
805 need for dredging. Designers also worked with NPS to reduce the staging areas at NPS Parking Lots B
806 and C, eliminating impacts to vegetation surrounding the lots. Designers also moved a proposed staging
807 area at Ohio Drive SW and I-395 from an existing sports field to an adjacent parcel that currently in use
808 as staging for the NPS NCR headquarters renovation.

809 **24.8.4. Hancock Park**

810 Steps to minimize harm at Hancock Park include an 83 percent reduction in the construction access
811 footprint located on the west side of the park. In addition, designers chose this particular southern
812 portion of the park because it provides ease of access into the railroad right-of-way and interferes less
813 with the more heavily used north side of the park near 7th Street SW.

814 **24.9. Least Overall Harm Analysis**

815 FRA and DDOT determined that the alternative that causes the “least overall harm” is Action Alternative
816 A (Preferred Alternative). If there are no feasible or prudent avoidance alternatives,
817 FRA may approve only the alternative that causes the “least overall harm” in light of the purpose of
818 Section 4(f).¹¹ The regulations require that FRA determine which alternative causes the least overall
819 harm through assessing and balancing the following seven factors:

- 820 1. The ability to mitigate adverse impacts to each Section 4(f) property (including any measures
821 that result in benefits to the property);
- 822 2. The relative severity of the remaining harm, after mitigation, to the protected activities,
823 attributes, or features that qualify each Section 4(f) property for protection;
- 824 3. The relative significance of each Section 4(f) property;
- 825 4. The views of the OWJs over each Section 4(f) property;

¹¹ 23 CFR 774.3(c)

- 826 5. The degree to which each alternative meets the purpose and need for the project;
- 827 6. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected
- 828 by Section 4(f); and,
- 829 7. Substantial differences in costs among the alternatives.

830 This section summarizes the results of the assessment of the Action Alternatives relative to these seven

831 factors for each of the Section 4(f) resources for which the Project would result in a “use.”

832 **24.9.1. Factor 1: The ability to mitigate adverse impacts to each Section**

833 **4(f) property (including any measures that result in benefits to the**

834 **property)**

835 Both Action Alternatives A and B would have unavoidable temporary occupancy and would permanently

836 incorporate land from Long Bridge Park, GWMP, MVT, the East and West Potomac Parks Historic

837 District, and Hancock Park. **Table 24-4** provides a summary of the expected uses and whether mitigation

838 options are available.

839 Mitigation to offset uses of Section 4(f) properties typically depends on the type and intensity of the use.

840 For the Long Bridge Project, the two Action Alternatives have similar impacts. Construction activities

841 (temporary occupancy) would impact more acres of property than permanent conversion to

842 transportation use.

843 At each of the Section 4(f) properties listed in **Table 24-4**, mitigation would include restoring the

844 temporary use areas after completing construction. DRPT would develop a restoration plan. The plan

845 would outline a planting plan for native trees and shrubs within open areas and sowing grass seed to re-

846 create the park-like setting present before construction to restore the vegetative element of the cultural

847 resource. DRPT would rehabilitate paved areas where needed and close the MVT trail detour once the

848 original trail route is constructed at the GWMP.

849 Mitigation would include public communication of lot closures with mapping via hard copies or web

850 apps to indicate alternative parking areas. Following construction, DRPT would restore and reopen the

851 76 spaces in NPS Parking Lot B for public use. However, the railroad right-of-way expansion would

852 permanently use parking spaces at NPS Parking Lot C because there is no space to expand the surface

853 parking area to regain lost spaces. Mitigation would also include designing permanent structures such as

854 bridge piers and abutments to be compatible in appearance and materials to the existing bridge

855 structures to maintain visual continuity. For Hancock Park, the Southwest Business Improvement District

856 provides portable chairs and tables for use at the park. Mitigation for Hancock Park would include a

857 donation for purchase of additional or replacement tables and chairs. In addition to site-by-site

858 restoration activities, DRPT would offset the effects to recreational values across all permanently

859 impacted parks along the Corridor through one mitigation project that benefits all parks. The mitigation

860 plan includes constructing a new bike-pedestrian shared use path that (running south to north) would

861 begin at Long Bridge Park, bridge over the GWMP, offer a connecting ramp to the MVT, cross the

862 Potomac River to East Potomac Park in the District, and connect to Ohio Drive SW at NPS Parking Lot C

863 **(Figure 24-12)**.

864 **Table 24-4** | Comparison of Mitigatable Use Impacts to Section 4(f) Resources Between Action
 865 Alternatives

Section 4(f) Resource	Action Alternative A	Action Alternative B	Ability to Mitigate (same for both alternatives)
Long Bridge Park	Permanent: approx. 0.04 to 0.14 acres		Yes (new bike-pedestrian crossing providing connectivity with regional trail network)
	Temporary: approx. 0.01 to 0.4 acres		Yes (noise abatement and new bike-pedestrian crossing)
	Constructive Use: No		--
GWMP (GWMP/MVMH Historic District)	Permanent: 0.4 to 0.5 acres	Permanent: approx. 0.4 to 0.5 acres Removal of historic bridge	Yes (new bike-pedestrian crossing providing connectivity with regional trail network, design review, tree protection plan, tree restoration plan, interpretation plan, viewshed protection plan, cultural landscape inventory)
	Temporary: 3.4 to 3.8 acres and 0.4 miles of roadway	Temporary: approx. 3.7 to 4.1 acres and approx. 0.4 miles of roadway	Yes (vegetation replacement, roadway restoration to original or better condition, new bike-pedestrian crossing, construction management control plan)
	Constructive Use: No		--
MVT	Permanent: None		--
	Temporary: 0.1 miles		Yes (establish trail detour, repair existing trail to original condition, and new bike-pedestrian crossing providing connectivity with regional trail network)
	Constructive Use: No		--
East Potomac Park (East and West Potomac Parks Historic District)	Permanent: approx. 2.4	Permanent: approx. 2.5 acres	Yes (new bike-pedestrian crossing providing connectivity with regional trail network, design review, tree protection plan, tree restoration plan, interpretation plan, viewshed protection plan, cultural landscape inventory)
	Temporary: approx. 4.8 acres	Temporary: approx. 4.9 acres	Yes (vegetation replacement, new bike-pedestrian crossing providing connectivity with regional trail network, construction management control plan)
	Constructive Use: No		--
Hancock Park (Reservation 113)	Permanent: None		--
	Temporary: approx. 0.09 acres		Yes (vegetation replacement and donation for picnic tables and benches)
	Constructive Use: No		--

866 **Figure 24-12** | Section 4(f) Mitigation: Proposed New Bike-Pedestrian Crossing



867

868 This mitigation project would add to the recreational values of Long Bridge Park, GWMP, MVT, and East
 869 Potomac Park by enhancing pedestrian and bicycle connectivity across the Potomac River between
 870 Virginia and the District for recreational users and commuters. This new pedestrian and bicycle bridge
 871 would connect the numerous Section 4(f) park and historic resources in the area and add a new
 872 connection to Long Bridge Park, enhancing the visitor experience. Pedestrians and bicyclists would be
 873 able to cross the Potomac River without the inconvenience and discomfort of traveling alongside
 874 motorized traffic. This improved connectivity would be the same for both Action Alternatives. The
 875 design of the new bridge would be compatible with other existing bridges across the Potomac River to
 876 mitigate adverse impacts related to the appearance of a new structure.

877 Mitigating the impacts of temporary occupation to Section 4(f) properties would be the same for each
 878 Action Alternatives. However, mitigating permanent uses would differ between the Action Alternatives.
 879 The primary difference would be the removal under Action Alternative B of the existing 1904 Long
 880 Bridge historic structure that spans the Potomac River, as well as the historic railroad bridge over the
 881 GWMP. The loss of the historic structure and the contributing elements these bridges offer to the
 882 GWMP and East and West Potomac Parks Historic District could be mitigated through actions such as
 883 documentation of the bridge through photographs and drawings prior to their removal or the addition
 884 of informational signage depicting or describing the historic bridges.

885 FRA, in coordination with DRPT, NPS, DC SHPO, and VDHR, have developed a Section 106 Programmatic
 886 Agreement (PA) to mitigate adverse effects from Action Alternative A (the Preferred Alternative) to the
 887 GWMP, MVMH, and East and West Potomac Parks historic districts. The PA (see **Appendix E5, Draft**
 888 **Section 106 Programmatic Agreement**) includes the following minimization and mitigation measures:

- 889 • Design review (to include DRPT, FRA, DC SHPO, VDHR, and NPS) as engineering and design
890 progress to address unresolved design elements and ensure new elements are aesthetically
891 compatible with the character of existing resources.
- 892 • Development and implementation of a tree protection plan to determine which vegetation and
893 trees would be removed or impacted by the project.
- 894 • Development and implementation of a tree restoration plan to determine the number and
895 caliper of trees to replace vegetation and trees removed or impacted by the project, as well as
896 their replacement location.
- 897 • Development and implementation of an interpretation plan to provide information to the public
898 on the history of Long Bridge.
- 899 • Development and implementation of a viewshed protection plan for the area of the
900 GWMP/MVMH from Alexandria to Columbia Island.
- 901 • Development and implementation of cultural landscape inventories for GWMP/MVMH and East
902 and West Potomac Parks.
- 903 • Development and implementation of a construction management control plan to minimize
904 impacts to historic properties due to noise, vibration, and visual effects during construction.

905 **24.9.2. Factor 2: Relative Severity of the Remaining Harm after Mitigation**

906 Factor 2 analyzes the severity of the remaining harm to each Section 4(f) resource after implementation
907 of measures to avoid, minimize, and mitigate. Where mitigation can effectively reduce the harm for all
908 uses to a Section 4(f) resource, the severity of remaining harm is a key consideration. Section 4(f)
909 requires a determination of whether the impacts following mitigation are significant within the context
910 of the purpose, goals, plans, and other resource management objectives for the Section 4(f) resource.

911 Action Alternatives A and B would have similar temporary occupation and permanent incorporation
912 uses across all Section 4(f) properties affected. The primary differences between alternatives include the
913 slightly higher temporary occupancy of land needed for construction at the GWMP for Action
914 Alternative B, the removal of the historic bridge structure for Action Alternative B, and additional
915 permanent use of land to accommodate a slightly wider railroad cross section for Action Alternative B.
916 The analysis of the relative severity of the remaining harm after mitigation to all Section 4(f) resources
917 differs between the two Action Alternatives because of the removal of the historic bridge structure.
918 Action Alternative A would avoid harm to the Long Bridge historic structure, while Action Alternative B
919 would remove this structure.

920 Mitigation to compensate for harm to Section 4(f) properties would focus on restoring vegetation at the
921 areas used for construction staging and access, and at additional areas as needed. If the disturbed areas
922 immediately adjacent to the new railroad crossing are not conducive for replanting, restoration efforts
923 to compensate for harm may be located elsewhere. Following construction, mitigation and natural
924 processes over time would return the recreational and scenic values at these temporary use areas.

925 After mitigation, visual impacts from the removal of trees would continue at the construction staging
926 sites and adjacent to the existing railroad. The construction of a new path crossing the Potomac River
927 would greatly enhance recreational values.

928 As described in **Section 24.9.1, Factor 1** minimization and mitigation measures for historic areas would
929 include measures such as design review, tree protection and restoration plans, interpretation plan,
930 viewshed protection plan, and a cultural landscape inventory. Through the measures included in the PA,
931 the impacts on historic areas would be reduced below the level of significance.

932 **24.9.3. Factor 3: Relative Significance of Each Section 4(f) Property**

933 This section gives a brief summary description of the relative importance of each property affected by
934 Action Alternative A and Action Alternative B as a Section 4(f) resource. Some properties have greater
935 significance as a public resource than others.

936 Since 2011, Arlington County has transformed Long Bridge Park from a brownfield into a high-quality
937 green space and recreation area for visitors and residents. The park offers active and passive recreation
938 amenities including athletic fields, a network of walkways, and picnic areas. Park designers purposefully
939 placed a section of existing trail next to the railroad tracks, which allows visitors to view trains as they
940 pass by. The design also elevates the trail by approximately 10 to 15 feet, allowing visitors clear views of
941 Roaches Run, the Potomac River, planes approaching Ronald Reagan Washington National Airport, and
942 the monuments at the National Mall. Construction is underway for a new aquatics and fitness center
943 and expanded trail network. Action Alternatives A and B would have similar impacts to Long Bridge Park.

944 The GWMP is a 25-mile corridor on 7,146 acres adjacent to the western shore of the Potomac River. It
945 offers motorists an attractive park setting with views of the Monumental Core and the river and
946 connects numerous sites important to the history of the country. The GWMP, as a memorial to George
947 Washington, began as a scenic route between the Mount Vernon Estate and Great Falls, Virginia. The
948 GWMP is listed on the NRHP “as an instrument of conservation and protection of scenic and
949 recreational values,”¹² and provides opportunities for hiking, bicycling, jogging, picnicking, and
950 enjoyment of scenic views. The MVT is part of the GWMP. It is a paved shared-use path that runs along
951 the shoreline of the Potomac River. Action Alternative A and Action Alternative B would have similar
952 impacts to the GWMP and MVT.

953 East Potomac Park consists of 330 acres on a manmade island in the Potomac River. It offers a wide
954 range of amenities including a public golf course, memorials, a public swimming pool, picnic areas,
955 parking areas, and extensive roads and paths for cyclists, walkers, and runners. The park includes the
956 Jefferson Memorial and George Mason Memorial on the southern edge of the Tidal Basin, and Ohio
957 Drive SW is a perimeter road around the park. The part of the park where the railroad right-of-way is
958 located consists of buildings, infrastructure, and open space considered part of the administrative
959 offices of the NPS NCR and NAMA with little to no recreational use by the public. Action Alternatives A
960 and B would have similar impacts to East Potomac Park.

961 Hancock Park is located farther north along the railroad Corridor. NPS owns and administers this open
962 space in the District’s L’Enfant Plaza neighborhood. Located between the railroad tracks and C Street
963 SW, Hancock Park includes 1.3 acres of grassed parkland with shade trees and walkways. The temporary
964 use of this park for staging under Action Alternative A and Action Alternative B would be the same.
965 Hancock Park is also a contributing reservation to the Plan of the City of Washington. Under both Action
966 Alternative A and Action Alternative B, FRA recommends a *de minimis* finding for this historic resource.

¹² NPS. April 1995. National Register of Historic Places Nomination Form, George Washington Memorial Parkway.

967 Long Bridge, constructed in 1904, is a contributing feature of the East and West Potomac Parks Historic
968 District. Action Alternative B would remove this Section 4(f) historic structure. Removing this structure
969 would cause a Section 106 adverse effect under the NHPA, resulting in a use under Section 4(f) while
970 Action Alternative A would not.

971 **24.9.4. Factor 4: Views of the Officials with Jurisdiction over Each Section** 972 **4(f) Property**

973 The purpose of this factor is to judge the relative importance of each Section 4(f) resource and the
974 relative significance of potential impacts to these resources based on the OWJ's point of view. Four
975 entities have jurisdiction over the Section 4(f) resources that the Project would potentially affect:

- 976 • Arlington County has jurisdiction over Long Bridge Park.
- 977 • NPS has jurisdiction over the GWMP, MVT, East Potomac Park, and Hancock Park.
- 978 • VDHR and DC SHPO have jurisdiction over NRHP-listed or eligible historic resources in the Study
979 Area.

980 FRA will seek official concurrence from Arlington County, NPS, VDHR, and DC SHPO on *de minimis*
981 impact findings and exceptions to temporary occupancy, as well as their views on the impacts to
982 resources and that information will be incorporated into this section in the Final EIS.

983 **24.9.5. Factor 5: Degree to Which Each Alternative Meets the Purpose** 984 **and Need for the Project**

985 DDOT and FRA considered 18 alternatives as part of the EIS process (see **Chapter 3, Alternatives**). The
986 analysis resulted in dismissal of 16 alternatives from further consideration. The DEIS evaluated two
987 Action Alternatives (Action Alternative A and Action Alternative B). These design and layout of these two
988 alternatives is very similar. Both Action Alternatives would add two tracks to create a four-track railroad
989 system crossing the Potomac River, and both Action Alternatives would equally meet the project
990 Purpose and Need by increasing railroad capacity for passenger and freight trains, improving resiliency
991 and redundancy, and maintaining network connectivity. Action Alternative A and Action Alternative B
992 equally meet the Purpose and Need for the Project.

993 **24.9.6. Factor 6: After Reasonable Mitigation, the Magnitude of Any** 994 **Adverse Impacts to Resources Not Protected by Section 4(f)**

995 This factor addresses the magnitude of unavoidable impacts to resources not protected by Section 4(f)
996 after implementing mitigation measures. In consideration of the adverse impacts resulting from each
997 alternative, the analysis has determined that impacts from the operation of trains, after construction of
998 the Project, would be low and mitigatable for each alternative. However, the complexity of the Project
999 being within and adjacent to parks, historic sites, building, highways, utilities, and surface waters
1000 presents a setting in which adverse impacts from construction activities would be unavoidable.
1001 **Chapters 5 through 21** of the DEIS summarize these impacts.

1002 The two Action Alternatives have relatively the same finished footprint and would cause very similar
1003 impacts to the Potomac River, although replacement of the existing bridge would cause additional
1004 impacts to vegetation on the shoreline. Additionally, construction techniques and equipment would be

1005 the same between the two Action Alternatives, and both Action Alternatives would result in the same
1006 operational impacts once construction is complete (same number of trains per day). Impacts would be
1007 different between the Action Alternatives because Action Alternative A would keep the existing Long
1008 Bridge crossing the Potomac River; therefore, the duration of construction only covers a single bridge
1009 across the river and would be shorter than Action Alternative B. The total construction timeline for
1010 Action Alternative A would be approximately 5 years, while Action Alternative B would take an
1011 estimated 8 years and 3 months to complete. The difference in the construction timeline between
1012 alternatives means that Action Alternative B would cause noise, air quality, and visual impacts to other
1013 adjacent commercial and residential properties along the Corridor that are not protected by Section 4(f)
1014 over a longer duration. These impacts would temporarily impact the quality of life for area residents,
1015 commuters, and business workers for 5 years for Action Alternative A and 8 years and 3 months for
1016 Action Alternative B.

1017 Construction of Action Alternative A and Action Alternative B would have adverse impacts to
1018 transportation during construction in the District. These impacts include lane closures and traffic
1019 detours during certain times of the day that would disrupt traffic flow for vehicles, cyclist, and
1020 pedestrians. This adverse impact would not be mitigatable. The impact intensity would be the same for
1021 each alternative. However, the impacts to traffic under Action Alternative A would last between 3 years
1022 and 6 months to 5 years depending on the segment of construction, while impacts to traffic under
1023 Alternative B would last approximately 4 years and 1 month to 8 years and 3 months. **Chapter 9,**
1024 **Transportation**, presents details on the impacts to traffic.

1025 **24.9.7. Factor 7: Substantial Differences in Costs Among Alternatives**

1026 Action Alternative B would replace the existing Long Bridge over the Potomac River and the railroad
1027 bridge over the GWMP rather than retaining those bridges. The replacement of the existing Long Bridge
1028 would require a substantial difference of capital outlay compared to Action Alternative A. Action
1029 Alternative B would cost approximately \$900 million more than Action Alternative A, an approximately
1030 47 percent increase.

1031 **24.10. Coordination and Consultation**

1032 **24.10.1. Coordination with Officials with Jurisdiction**

1033 FRA will provide the draft Section 4(f) Evaluation for coordination and comment to the OWJs during the
1034 draft EIS comment period. FRA will provide to DOI, which has a 45-day review period.

1035 NPS administers the GWMP, East Potomac Park, and Hancock Park and is a Cooperating Agency for this
1036 project. Arlington County owns Long Bridge Park and is a Participating Agency. VDHR and DC SHPO are
1037 also Participating Agencies. NPS, Arlington County, VDHR, and DC SHPO are OWJs.

1038 In addition to the coordination points and meetings outlined in **Tables 25-2 and 25-4 in Chapter 25,**
1039 **Public Involvement and Agency Coordination**, FRA and DDOT have coordinated with OWJs through the
1040 following:

- 1041 • **NPS:** FRA and DDOT held regular monthly coordination meetings with NPS throughout the
1042 development of the EIS. The purpose of the meetings is to share information and discuss project
1043 issues and coordination needs.

- 1044
- 1045
- **Arlington County:** DDOT held coordination meetings with Arlington County to discuss issues and receive input specific to Long Bridge Park on August 31, 2017, and September 26, 2018.
- 1046
- **Technical Advisory Committee Meeting:** On August 16, 2018, FRA and DDOT held a meeting with multiple agencies with an interest in the visual analysis, including NPS, VDHR, and DC SHPO. The purpose of the meeting was to discuss the viewsheds proposed for analysis using photo simulations.
- 1047
- 1048
- 1049

1050

24.10.2. Coordination with Cooperating Agencies

1051 The Lead and Cooperating Agencies have specific opportunities for meaningful participation in the
1052 decision-making process for the Project, including review and comment on the Draft Section 4(f)
1053 Evaluation. For this Project, FRA is providing an opportunity for Cooperating Agency review and
1054 comment on this Draft Section 4(f) Evaluation in conjunction with their review period for the DEIS.
1055 Coordination among these agencies will continue throughout the development of the Project and
1056 further refinement of the Section 4(f) Evaluation. **Table 25-2** in **Chapter 25, Public Involvement and**
1057 **Agency Coordination**, lists and describes the key agency coordination points throughout the decision-
1058 making process for the Project.

1059

24.10.3. Section 106 Consultation

1060 FRA is conducting Section 106 consultation concurrently with development of the EIS and Section 4(f)
1061 Evaluation. For this project, Section 106 consultation involved coordination with DDOT, DC SHPO, VDHR,
1062 NPS, and Arlington County, as well as other Consulting Parties, regarding the potential impacts of the
1063 Action Alternatives to the GWMP and East Potomac Park. Consultation also included discussion of
1064 proposed measures to minimize, avoid, and mitigate adverse effects and FRA incorporated these
1065 measures into mitigation for impacts to Section 4(f) resources. **Chapter 25.6, Section 106 Consultation**,
1066 provides additional detail on the Section 106 consultation. **Table 25-4** lists the dates and topics of the
1067 meetings held with the Consulting Parties.

1068

24.10.4. Public Involvement

1069 Section 4(f) requires that FRA must provide public notice and an opportunity for public review and
1070 comment on the Draft Section 4(f) Evaluation and *de minimis* determinations. This requirement can be
1071 satisfied in conjunction with other public involvement procedures, such as the comment period
1072 provided on a DEIS prepared in accordance with NEPA.

1073 On November 29, 2018, FRA and DDOT held a public meeting to inform the public of the identification of
1074 the Preferred Alternative for the Project. At the meeting, FRA and DDOT provided an overview of
1075 Section 4(f) and explained the potential for the bike-pedestrian crossing to serve as mitigation for
1076 impacts to Section 4(f) resources.

1077 For this Project, FRA is providing an opportunity for public review and comment on this Draft Section 4(f)
1078 Evaluation in conjunction with the public review period for the DEIS. The Draft Section 4(f) Evaluation is
1079 being made available to public together with the DEIS. FRA and DDOT will address any agency or public
1080 comments received during this review period in the Final Section 4(f) Evaluation, to be provided with the
1081 FEIS for the Long Bridge Project.

1082 **24.11. Final Section 4(f) Evaluation**

1083 FRA will complete the Final Section 4(f) Evaluation at the same time as the FEIS for the Project. It will
1084 include a determination of the impacts to Section 4(f) properties resulting from the Preferred
1085 Alternative and documentation of measures to minimize harm.