

# Appendix E3:

## Section 106 Assessment of Effects Report

# Long Bridge Project

## Section 106 Assessment of Effects Report

December 7, 2018

# Long Bridge Project

## Section 106 Assessment of Effects Report

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## 1.0 Introduction

The Federal Railroad Administration (FRA) in coordination with the District Department of Transportation (DDOT) assessed effects of the Long Bridge Project (the Project) on historic properties per Section 106 of the National Historic Preservation Act of 1966<sup>1</sup> and its implementing regulation.<sup>2</sup> FRA and DDOT are coordinating the Section 106 process with the preparation of an Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act of 1969 (NEPA).

The Project consists of potential improvements to the Long Bridge and related railroad infrastructure located between the RO Interlocking near Long Bridge Park in Arlington, Virginia, and the L'Enfant (LE) Interlocking near 10<sup>th</sup> Street SW in the District of Columbia (the Long Bridge Corridor). The 1.8-mile Long Bridge Corridor is shown in **Figure 1-1**.

The purpose of the Project is to provide additional long-term railroad capacity and to improve the reliability of railroad service through the Long Bridge Corridor. Currently, there is insufficient capacity, resiliency, and redundancy to accommodate the projected demand in future railroad services. The Proposed Action is needed to address these issues and to ensure the Long Bridge Corridor continues to serve as a critical link connecting the local, regional, and national transportation network.

This report documents the assessment of effects to historic properties that could result from the Project. This report includes the following:

1. Description of the project alternatives considered and a description of the bike-pedestrian crossing mitigation option;
2. Summary of Section 106 consultation efforts completed to date;
3. Description of the Area of Potential Effects (APE);
4. Listing identified historic properties and properties at or greater than 45 years of age within the APE;
5. Description of the methodology used for assessing effects on historic properties; and
6. Assessment of effects on historic properties.

FRA and DDOT considered comments from the District of Columbia State Historic Preservation Officer (DC SHPO), Virginia Department of Historic Resources (VDHR), and other Consulting Parties to the Section 106 process in preparing this final report.<sup>3</sup>

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<sup>1</sup> 54 USC 300101.

<sup>2</sup> 36 CFR Part 800. Protection of Historic Properties.

<sup>3</sup> FRA and DDOT provided a draft Assessment of Effects report to SHPOs and Consulting Parties for 30-day review (Oct 10, 2018 – November 9, 2018), and held a Consulting Parties Meeting on October 24, 2018.

**Figure 1-1 | Long Bridge Corridor**



## 2.0 Description of the Undertaking

### 2.1. Project Background

The existing Long Bridge is a two-track railroad bridge, constructed in 1904, that is currently owned and operated by CSX Transportation (CSXT), a Class I freight railroad. The Long Bridge is a contributing structure to the East and West Potomac Parks Historic District. The Long Bridge Corridor serves freight (CSXT), National Railroad Passenger Corporation (Amtrak) intercity passenger rail, and Virginia Railway Express (VRE) commuter rail. Maryland Area Regional Commuter (MARC) service, which currently terminates at Washington Union Station in the District, plans to expand service across Long Bridge between the District and Northern Virginia. Norfolk Southern, also a Class I freight railroad, has trackage rights on Long Bridge but does not currently exercise those rights.

Long Bridge is a key element of the regional commuter railroad network and national railroad system for intra- and intercity passenger rail service, as well as freight railroad service along the Eastern Seaboard of the United States, linking the Northeast Corridor and Southeast High-Speed Rail Corridor. Projections indicate that freight and passenger growth will exceed the capacity of the existing two-track bridge across the Potomac River. Future demand will require new options and expanded infrastructure to avoid interrupting the movement of passengers and goods across the Potomac River and to provide service to economic centers north and south of Long Bridge.

### 2.2. Alternatives to Be Evaluated in the EIS

#### 2.2.1. Action Alternatives

Based on the results of concept screening completed by FRA and DDOT, in addition to comments from agencies, the public, and Consulting Parties, FRA and DDOT selected two Action Alternatives to for evaluation in the EIS. **Figure 2-1** shows Action Alternative A and Action Alternative B.

- **Action Alternative A (Preferred Alternative):**<sup>4</sup> This alternative would retain the existing two-track Long Bridge and construct a new two-track bridge upstream of the existing Long Bridge to create a four-track crossing over the Potomac River. Action Alternative A proposes no repairs or modifications to the existing Long Bridge under this Project, and the central through-truss span would be retained. A new component railway bridge would also be constructed to span above the George Washington Memorial Parkway (GWMP). The existing two-track railroad bridge above the GWMP would remain.
- **Action Alternative B:** This alternative would replace Long Bridge with a new two-track bridge and construct another new two-track bridge upstream of the existing bridge to create a four-track crossing. This alternative would also construct two new component railway bridges spanning above the GWMP, necessitating the removal of the existing bridge.

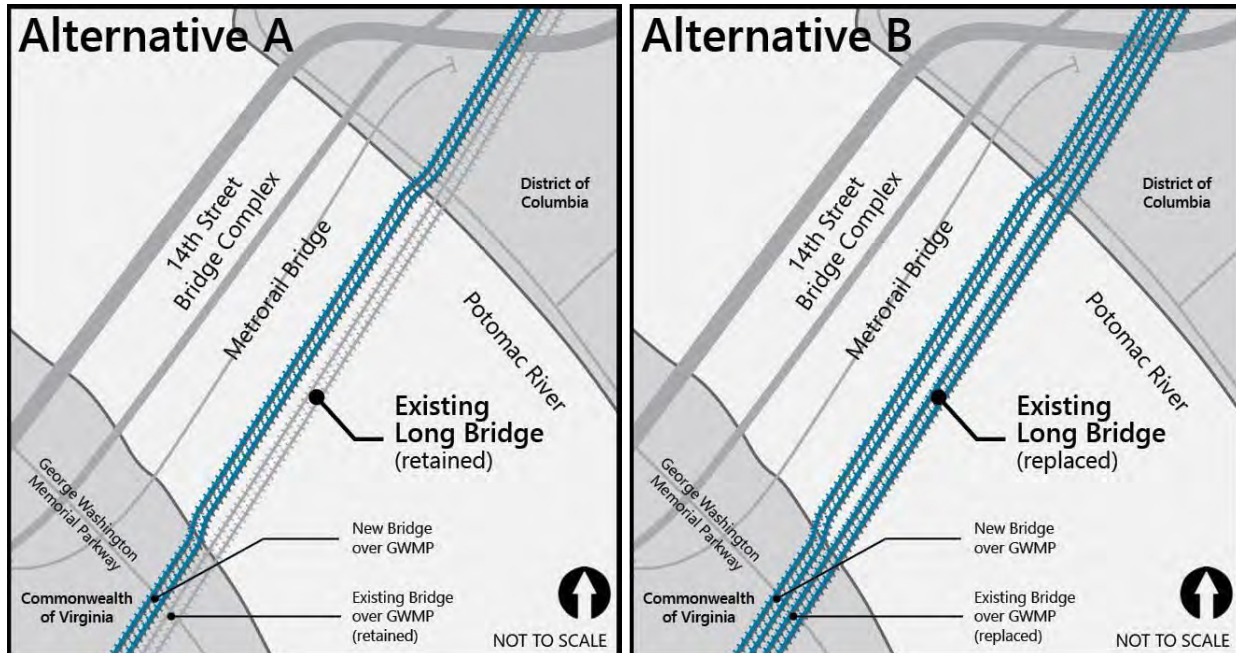
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<sup>4</sup> FRA and DDOT have identified Action Alternative A as the Preferred Alternative in the EIS. They informed agencies and the public of this decision on November 29, 2018.



North of the Potomac River crossing, the Action Alternatives follow substantially the same course. The following section describes elements common to both Action Alternatives.

**Figure 2-1** | Action Alternatives to Be Evaluated in the EIS



### 2.2.2. Elements Common to Both Action Alternatives

The southern Project limit is the RO Interlocking, a series of signals and track crossovers allowing trains to switch between tracks. As part of the District to Richmond segment of the Southeast High-Speed Rail Corridor, the Virginia Department of Rail and Public Transportation (DRPT) is proposing a four-track crossover alignment at this location.<sup>5</sup> Both Action Alternatives tie into the planned interlocking and add two new tracks in addition to the two existing tracks. The new and existing tracks would meet the switching and crossover length requirements necessary at an interlocking for interoperability.

Moving north from the RO Interlocking, the four-track alignment proposed for the Project would continue adjacent to Long Bridge Park and would then cross over the GWMP. In both Action Alternatives, a new bridge would be constructed over the Mount Vernon Trail (MVT) and continue across the Potomac River upstream of the existing bridge. Additional information on the proposed bridge design and engineering is described in **Section 2.2.4, Conceptual Engineering Studies**.

After crossing the Potomac River, the new Long Bridge structures in both Action Alternatives would extend over Ohio Drive SW in the District and end at an abutment north of the street. The new upstream bridge would extend into National Park Service (NPS) Parking Lot C. The two new western track alignments would continue north from NPS Parking Lot C with a new single-span bridge spanning

<sup>5</sup> DRPT. *DC2RVA Tier II DEIS*, Appendix A – Alternatives Technical Report. Accessed from [http://dc2rvarail.com/files/9615/0413/6228/Appendix\\_A-Attachment\\_A\\_Corridor\\_Segments.pdf](http://dc2rvarail.com/files/9615/0413/6228/Appendix_A-Attachment_A_Corridor_Segments.pdf). Accessed July 18, 2018.

the Washington Metropolitan Area Transit Authority (WMATA) Metrorail Yellow Line portal. Retaining walls would be required along the eastern and western sides of the four-track corridor to retain embankment fills.

The four new tracks would continue across I-395 on two separate two-track bridges. After bridging I-395, the four tracks would converge into parallel alignments and widen to the east of the existing track alignment, but would still be within the existing right-of-way. The four tracks would continue north along the corridor and cross over Ohio Drive SW for a second time on a single new four-track bridge. Retaining walls would again be required on either side of the corridor to retain embankment fill slopes.

The corridor would cross the Washington Channel at the mouth of the Tidal Basin on a single new four-track bridge that would replace the existing bridge. The channel is not navigable underneath the existing bridges. Just north of the Washington Channel crossing, the tracks would cross Maine Avenue SW and Maiden Lane on a new four-track bridge. The existing retaining wall along the west side of the tracks along the I-395 off-ramp would be maintained, and a new retaining wall would be required along the east side of the railroad corridor between the tracks and the Washington Marina parking lot. The alignment of the two new tracks would require that the pedestrian bridge over Maine Avenue SW be replaced on a new alignment.

The four-track alignment would proceed along the corridor between the Mandarin Oriental Hotel and the Portals V development and would continue underneath the Maryland Avenue SW overbuild. The tracks would share multiple bays between existing bridge piers, with some bridge modifications required.

From Maryland Avenue SW, the tracks would travel along the corridor underneath 12th Street SW, the 12th Street Expressway, and L'Enfant Plaza SW. Just north of L'Enfant Plaza SW, the four tracks would tie into the four tracks at LE Interlocking proposed by VRE, again meeting the switching and crossover length requirements necessary at an interlocking for interoperability.

### **2.2.3. No Action Alternative**

The EIS will also evaluate the No Action Alternative, pursuant to NEPA implementing regulations. In the No Action Alternative, the Project would not be implemented. While the No Action Alternative is not consistent with the Project's Purpose and Need, it will serve as a baseline against which the potential effects of the Action Alternatives can be compared.

### **2.2.4. Conceptual Engineering Studies**

FRA and DDOT are currently studying options to consider the feasibility and constructability of various bridge structure types under both Action Alternatives. In each alternative, the new bridges would be essentially identical in type and size. Over the navigation channels, a fixed span is proposed for the new bridge, with no ability to move or open for marine traffic. The vertical clearances beneath the bridge are restricted at the navigation channel, Ohio Drive SW, the Rock Creek Park Trail, and the MVT. Therefore, the bottom of the beams on the new bridge would be at the same elevation as that of the existing bridge. However, to meet new CSXT design criteria and maintain similar span lengths, the top of rail of the new bridge would be approximately 3 to 5 feet higher than the top of rail of the existing bridge.

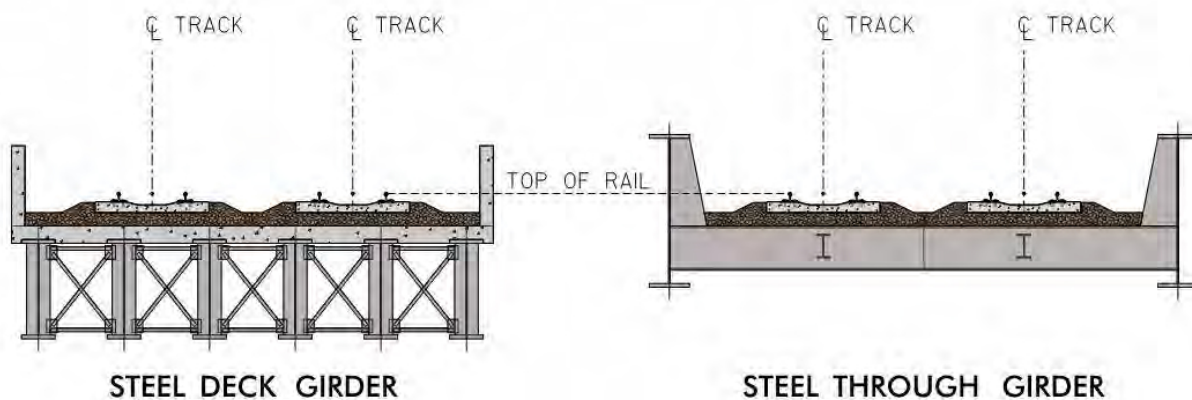
The overall depth of the approach bridge superstructure would be similar to, or slightly deeper than, the existing bridge depth. This element would be further refined during final design. The main channel span

over the navigational channel would have a deeper superstructure depth than the approach bridges due to the longer span, with an overall depth approximately 50 percent greater than the existing through girders.

For Action Alternative A, the locations of the new piers in the Potomac River are proposed to remain in the same configuration as the existing Long Bridge and in line with existing piers. If Action Alternative B is selected, and the existing bridge is replaced with a new bridge, the span lengths for both new bridges would remain similar as the superstructure lengths are already at the maximum limits for the required design loading, bridge geometry, and vertical clearances.

Two structure types for the proposed bridge across the Potomac River are being considered, as shown in **Figure 2-2**: a steel through girder bridge and a steel deck girder bridge. These are common structure types for railroad bridges in the United States. In addition, these structure types are considerably more cost effective than other structure types. The shallow depth of the structure required over the navigation channel precludes the use of concrete girders at this location. For uniformity, only steel girders are proposed for the new bridges over the river.

**Figure 2-2 | Structure Types Under Consideration**



Given the location of the bridge and its proximity to major landmarks and trails, the aesthetics of the proposed bridge would be considered in final design. The main difference between the two structure types in terms of aesthetics is the visible structure depth. For the deck girder design, roughly half the depth is the steel girder and the other half is the concrete deck and parapet wall. For the through girder bridge, the entire visible depth is steel. The concrete deck and parapet of the deck girder option may be cast with a decorative form liner to economically give an aesthetic finish to the parapet. The through girders can be painted to enhance the bridge appearance.

Both evaluated structure types would be viewed as traditional railroad bridges in appearance, to provide visual consistency with the existing Long Bridge structure. These would not have any signature spans that would greatly stand out among the surrounding bridges. Additionally, none of the new bridges proposed in either Action Alternative would recreate the central through truss span on the existing Long Bridge. Feedback received from the public, agencies, and Consulting Parties indicated a preference for a new span or spans that preserves the uniformity of the existing Long Bridge-Metrorail-14th Street bridge

complex and avoids potential adverse visual effects resulting from a signature span. The new bridges would be a deck plate girder or through plate girder bridge type for all spans, as shown in **Figure 2-2**.

### 2.2.5. Bike-Pedestrian Crossing Options

Although not part of the Project's Purpose and Need, some agencies and members of the public have expressed strong support for a bike-pedestrian crossing. The Project has continued to explore the potential opportunity to accommodate connections that follow the trajectory of the Long Bridge Corridor to the pedestrian and bicycle network. A potential bike-pedestrian crossing could be implemented under either Action Alternative being evaluated in the EIS. While not part of the Project, FRA, DDOT, and NPS are continuing to consider a bike-pedestrian crossing option as potential mitigation for impacts to properties protected under Section 4(f) of the United States Department of Transportation Act of 1966.<sup>6</sup>

The Project evaluated the feasibility of four bike-pedestrian crossing options and considered if a crossing could be designed to be consistent with railroad operator plans and pursuant to railroad safety practices. The four options extend from the Long Bridge Park side of the GWMP to the north side of Ohio Drive SW at NPS Parking Lot C, with connections to the MVT and Ohio Drive SW. These options are summarized below:

- **Option 1A** would provide a crossing attached to the upstream side of the new upstream railroad bridge using a shared superstructure and substructure with the railroad bridge. This option would provide a direct connection to Long Bridge Park.
- **Option 1B** would provide a crossing attached to the upstream side of the new upstream railroad bridge using a shared substructure and separate superstructures. This option would provide a direct connection to Long Bridge Park.
- **Option 2** would provide a crossing on an independent bridge on the upstream side of the new upstream railroad bridge. This option would provide a direct connection to Long Bridge Park.
- **Option 3** would provide a crossing on an independent bridge downstream of the existing railroad bridge. To optimize connections to bicycle and pedestrian facilities, the crossing would connect in the District to Ohio Drive SW near the NPS National Capital Region (NCR) Headquarters, rather than landing next to Long Bridge. A direct connection to Long Bridge Park would not be feasible with this option.

Options shown at the public and agency meetings in December 2017 did not show the crossing connecting across the GWMP to Long Bridge Park. However, following feedback received from the public and agencies (U.S. Commission of Fine Arts [CFA], National Capital Planning Commission [NCP], and Arlington County) that emphasized the importance of a connection to Crystal City, the potential to cross the GWMP have been evaluated as part of all options.

The ramps connecting to the MVT in Virginia and to Ohio Drive SW in the District would begin sloping down to existing ground once the crossing reaches land on either side of the river or may begin sloping down while still over the river, which would minimize the length of ramp switchbacks. The determination of whether the bridge can begin sloping downward while still over the river channel

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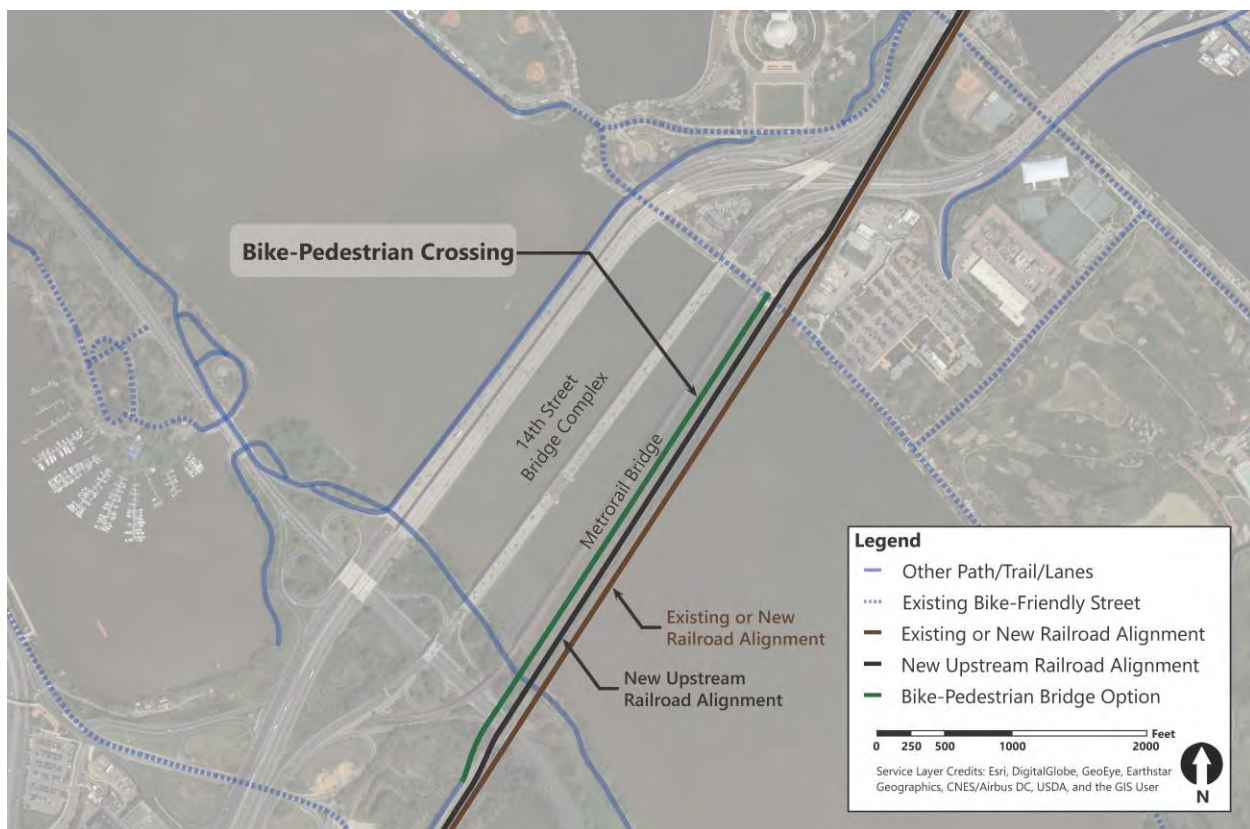
<sup>6</sup> 49 USC 303

would be made in consultation with the United States Coast Guard regarding the minimum allowable vertical clearance over the channel.

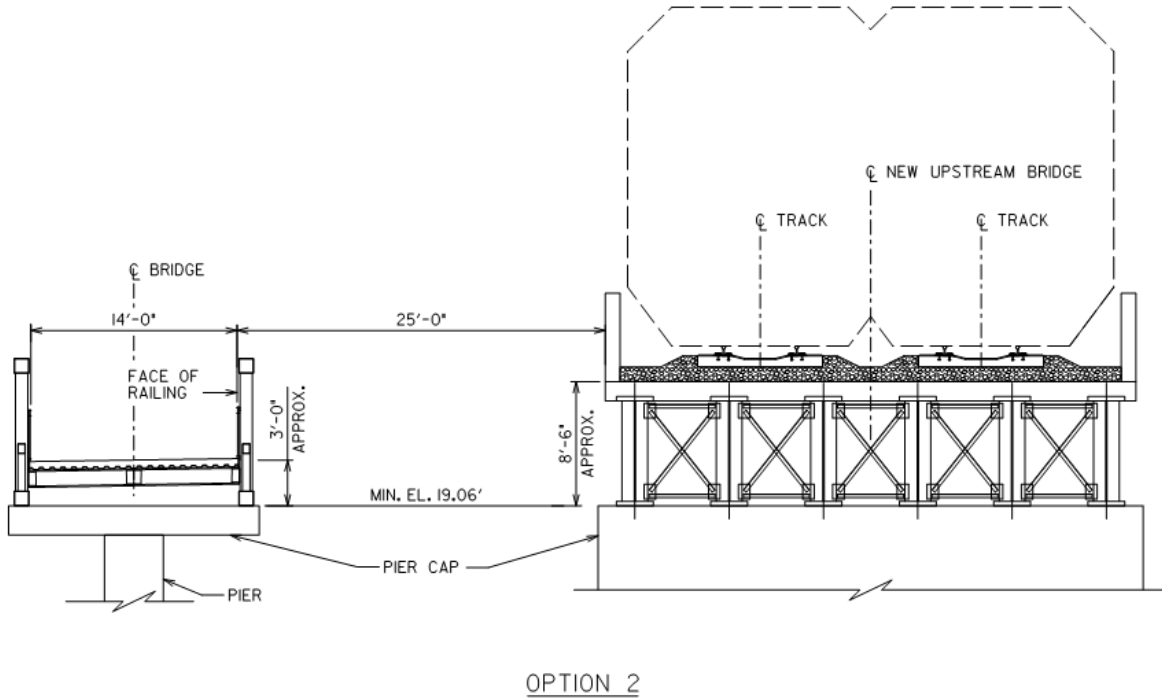
FRA and DDOT will continue to consider Option 2 as potential mitigation for the Project. As shown in **Figure 2-3** and **Figure 2-4**, Option 2 provides the bike-pedestrian crossing on a completely separate structure approximately 25 feet upstream of the new upstream railroad bridge.

Option 2 is preferred by the railroad operators and NPS (land owner on either side of the bridge and the river bottom). This structure would be supported by single-column piers approximately 6 feet in diameter. The Option 2 piers would be significantly smaller than the piers in Option 1B as the size would be based on bike-pedestrian loading rather than railroad loading. The results of a Threat, Vulnerability, & Risk Assessment (TVRA) showed that this option would have the lowest risk, because the completely separate structure and distance between bridges would prohibit pedestrians from accessing the railroad bridge. Therefore, fewer security measures would be required. The completely separate structure also simplifies inspection and maintenance. Lastly, the construction cost of Option 2 would also be approximately 20 percent less than Option 1B.

**Figure 2-3** | Bike-Pedestrian Crossing Option 2



**Figure 2-4** | Section Diagram of New Upstream Railroad Bridge and Bike-Pedestrian Crossing Option 2



Options 1A, 1B, and 3 were eliminated from further consideration for the following reasons:

- The deck of Option 1A, because it shares its superstructure as well as its substructure with the new upstream railroad bridge, would be at a much higher elevation across the river. This would require longer ramps than the other options, resulting in additional impacts to the GWMP, MVT, and NPS Parking Lot C. Compared to the other options, Option 1A would also offer less separation between the bike-pedestrian crossing and the railroad bridge. This proximity to the railroad bridge would result in a less desirable experience for bicyclists and pedestrians and would make maintenance and inspection more difficult.
- Option 1B shares its substructure with the new upstream railroad bridge, but would have a separate superstructure, enabling additional separation distance from the active railroad. To support the bike-pedestrian crossing superstructure, the railroad bridge piers would be extended by approximately 22 feet farther upstream. The results of the TVRA showed that this option would have the second highest risk of the options available. Option 1B requires substantial security measures to make it more difficult for pedestrians to access the railroad bridge. The proximity to the railroad bridge would result in a less desirable experience for bicyclists and pedestrians and make maintenance and inspection more difficult. The extended railroad piers and security measures make Option 1B more expensive than Option 2.

- Option 3 would introduce a new visual element into the viewsheds from the GWMP, East Potomac Park, and Potomac River resulting in additional impacts. In addition, it could not provide a direct connection to Long Bridge Park.

### 2.3. Long Bridge Section 106 Consultation

FRA initiated Section 106 consultation with DC SHPO and VDHR on September 22, 2016. FRA and DDOT worked with VDHR and DC SHPO to identify Consulting Parties, who were formally invited to participate in the Section 106 consultation process in March 2017. A list of those parties FRA invited to participate in the consultation process is shown in **Table 2-1** below.

**Table 2-1** | Agencies and Organizations Invited to Participate as Consulting Parties for the Long Bridge Project

Amtrak	National Mall Coalition <sup>1</sup>
Architect of the Capitol	NPS, Captain John Smith Trail <sup>1</sup>
Arlington County Historic Preservation Program	NPS, GWMP
Arlington County Manager <sup>1</sup>	NPS, National Capital Region
Arlington Historical Society <sup>1</sup>	NPS, National Mall & Memorial Parks
Arlington National Cemetery <sup>1</sup>	National Trust for Historic Preservation <sup>1</sup>
Catawba Indian Nation <sup>1</sup>	Pentagon Reservation (Department of Defense)
Committee of 100 on the Federal City <sup>1</sup>	Southwest BID
Crystal City Civic Association	Trust for the National Mall <sup>1</sup>
CSXT	U.S. Army Corps of Engineers, Baltimore District <sup>2</sup>
DC Preservation League	U.S. Army Corps of Engineers, Norfolk District <sup>2</sup>
Delaware Nation	CFA
Delaware Tribe of Indians <sup>1</sup>	U.S. General Services Administration, National Capital Region
Federal Transit Administration (FTA)	DRPT
Mayor of the District of Columbia <sup>1</sup>	VRE
NCPC	Washington DC Chapter National Railway Historical Society <sup>1</sup>

<sup>1</sup> These organizations did not respond to the Consulting Party invitation or declined to participate as Consulting Parties.

<sup>2</sup> During scoping, the Norfolk District designated FRA as the lead Federal agency for fulfilling its compliance obligations under Section 106. In November 2018, the Baltimore District designated FRA as the lead Federal agency for Section 106 compliance.

FRA and DDOT jointly conducted four Section 106 Consulting Party meetings between April 2017 and October 2018. The specific content of those meetings is explained in **Table 2-2**. The feedback received during these meetings and in the subsequent comment periods informed the development of the APE, the identification of historic properties, the methodology for assessing effects, the assessment of effects on historic properties, and appropriate resolution strategies. In addition to meeting with Consulting Parties, FRA and DDOT held several public meetings throughout the NEPA process to provide information and solicit comments and questions from the public. These meetings also served as public meetings for the purposes of Section 106 consultation.

**Table 2-2 | Consulting Party Meetings for the Long Bridge Project**

Date	Content
<b>Meeting #1</b> April 25, 2017	Project overview; purpose and need; preliminary concepts and screening; Section 106 process; preliminary identification of historic properties; and role of the consulting party.
<b>Meeting #2</b> November 15, 2017	Concept screening results; draft APE and field survey methodology; and identification of historic properties.
<b>Meeting #3</b> May 30, 2018	Phase 1A archaeological assessment overview; methodology for assessing effects to historic properties.
<b>Meeting #4</b> October 24, 2018	Phase IA archaeological assessment findings; findings of draft assessment of effects report; and avoidance, minimization, and mitigation strategies.



## 3.0 Identification of Historic Properties

This section provides a summary of the methodology utilized by FRA and DDOT to develop the project APE and identify historic properties, as well as the findings of those efforts. A detailed description of these methodologies and findings are described in the *Area of Potential Effects and Historic Properties Technical Report* (February 2018), which was provided to DC SHPO, VDHR, and the Consulting Parties (see **Appendix A**).

### 3.1. APE Development

Section 106 regulations define the APE as the geographic boundary within which an undertaking has the potential to directly or indirectly effect historic properties. The APE boundary reflects the scale and nature of an undertaking and may be different for different types of effects caused by an undertaking. For Section 106 consultation, the APE is defined to facilitate the identification of historic properties and to allow for the evaluation of potential effects to historic properties resulting from an undertaking.<sup>7</sup>

For the Project, FRA identified an APE and Limits of Disturbance (LOD) for the alternatives under consideration. The LOD boundary represents the area within which the Project has the potential to directly alter an existing feature or result in ground-disturbing activities. FRA subsequently refined the APE in consultation with DC SHPO, VDHR, and other Consulting Parties. By letters dated March 23, 2018, DC SHPO and VDHR concurred with the APE and LOD.

Following the dismissal of the bike-pedestrian crossing option downstream of the existing Long Bridge (see **Section 2.2.5, Bike-Pedestrian Crossing Options**), FRA revised the LOD to remove the alignment of that crossing option and its associated access ramps and landings (see **Figure 3-1**). The APE boundary remains unchanged.

### 3.2. Identification of Historic Properties

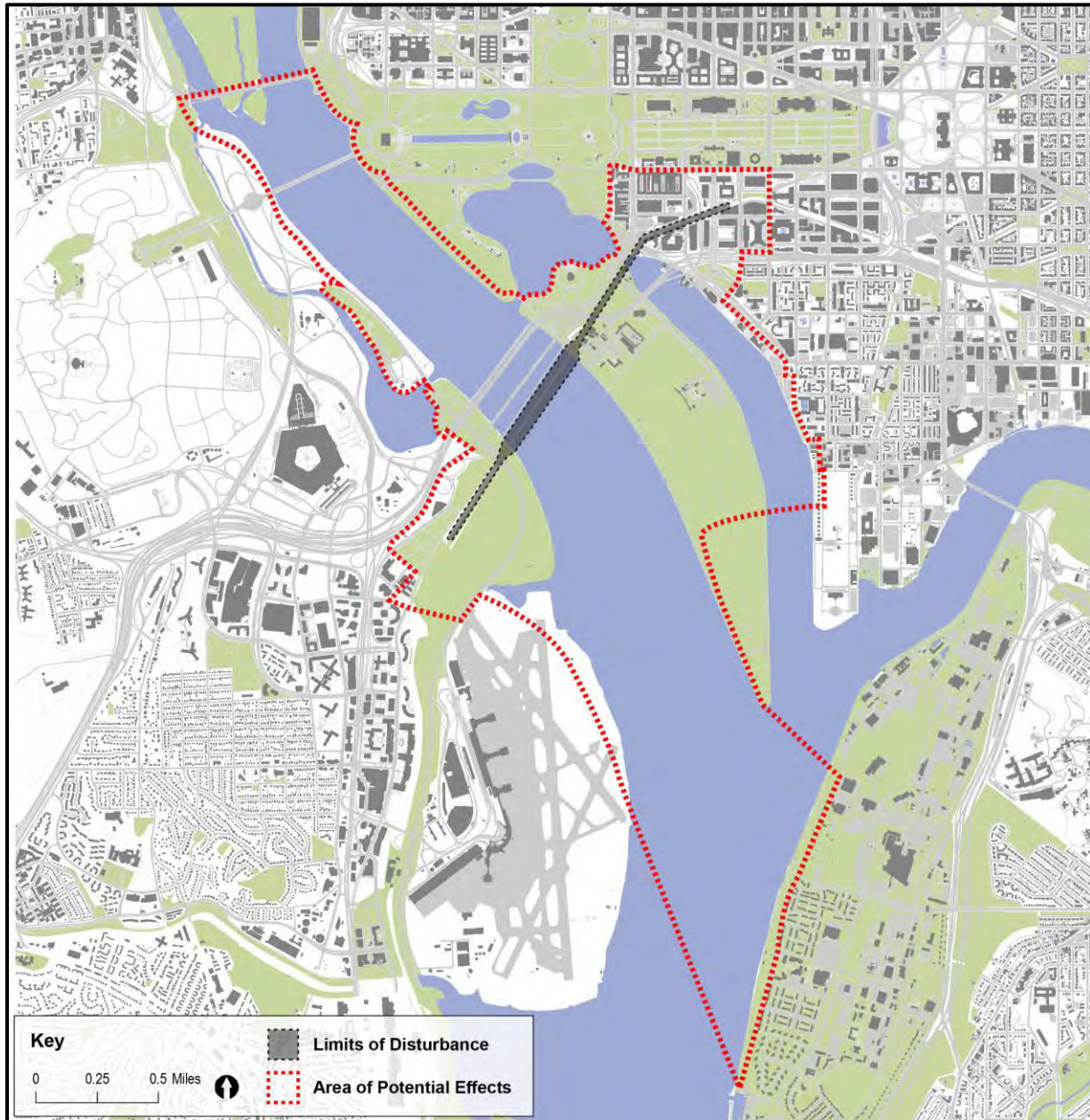
Concurrent with the development of the APE, FRA and DDOT identified historic properties within the APE boundaries in consultation with DC SHPO, VDHR, and the Consulting Parties (as shown in **Figure 3-2**). Per the Section 106 regulation, a historic property is defined as "... any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP)." The definition of historic properties includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (including artifacts, records, and material remains).<sup>8</sup> The following tables provide a list of identified historic properties for the Project. **Appendix A, Area of Potential Effects and Historic Properties Technical Report**, provides more detailed information on the location and significance of these properties.

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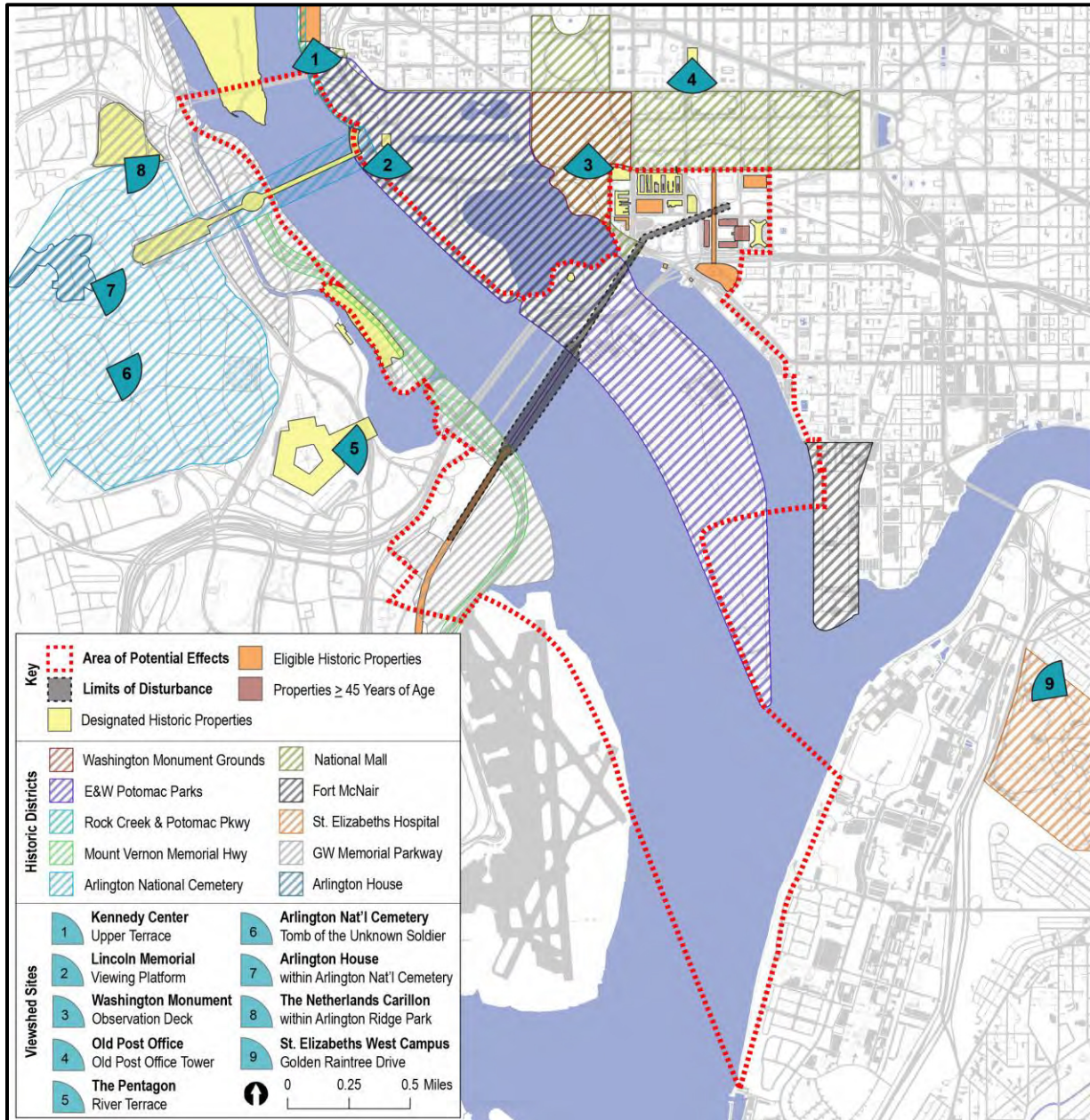
<sup>7</sup> 36 CFR 800.16(d).

<sup>8</sup> 36 CFR 800.16(l)(1).

**Figure 3-1** | Area of Potential Effects and Limits of Disturbance



**Figure 3-2 | Identification of Historic Properties**



### 3.2.1. Designated Historic Properties

The following properties (**Table 3-1**) have been listed in the NRHP, DC Inventory of Historic Sites (DC), or the Virginia Landmarks Register (VLR). Two properties have been designated as National Historic Landmarks (NHL). In some cases, these properties were determined eligible for NRHP listing (Determination of Eligibility [DOE]) and were subsequently listed.

**Table 3-1 | Designated Historic Properties**

#	Name	Location	Designation
1.	<b>National Mall Historic District</b>	Washington, DC	DC, NRHP
2.	<b>Parkways of the National Capital Region</b>	Washington, DC	VLR, NRHP
3.	<b>Rock Creek and Potomac Parkway Historic District</b>	Along the Potomac River and Rock Creek from the Lincoln Memorial to the National Zoo, Washington, DC	DC, NRHP
4.	<b>GWMP<sup>1</sup></b>	Arlington, VA; Washington, DC	VLR, NRHP
5.	<b>Mount Vernon Memorial Highway (MVMH)<sup>2</sup></b>	Arlington, VA; Washington, DC	VLR, NRHP
6.	<b>Plan of the City of Washington</b>	Washington, DC	DC, NRHP
7.	<b>East and West Potomac Parks Historic District</b>	Washington, DC	DC, NRHP
8.	<b>Thomas Jefferson Memorial</b>	East Basin Drive SW, Washington, DC	DC, NRHP
9.	<b>Central Heating Plant</b>	325 13th Street SW, Washington, DC	DC, NRHP
10.	<b>United States Department of Agriculture (USDA) Cotton Annex</b>	300 12th Street SW, Washington, DC	DC, NRHP
11.	<b>HUD Building (Robert C. Weaver Federal Building)</b>	451 7th Street, SW, Washington, DC	DC, NRHP
12.	<b>USDA South Building</b>	1352 C Street SW, Washington, DC	DC, NRHP
13.	<b>Bureau of Engraving and Printing</b>	301 14th Street SW, Washington, DC	DC
14.	<b>Auditor's Building Complex</b>	14th Street and Independence Avenue SW, Washington, DC	DC, NRHP
15.	<b>Arlington Memorial Bridge (and related features)</b>	Memorial Avenue, Arlington, VA, and Washington, DC	DC, NRHP
16.	<b>Fort Leslie J. McNair Historic District (The Old Arsenal)</b>	4th and P Streets SW, Washington, DC	DC, DOE
17.	<b>Titanic Memorial</b>	Water and P Streets SW, Washington, DC	DC, NRHP
18.	<b>Lunch Room Building and Oyster Shucking Shed</b>	1100 Maine Avenue SW, Washington, DC	DC, DOE
19.	<b>Cuban Friendship Urn</b>	Reservation 332, Ohio Drive at 14th Street Bridge SW, Washington, DC	DC, NRHP
20.	<b>Theodore Roosevelt Island National Memorial (Analoostan Island)</b>	Potomac River west of Georgetown Channel	DC, NRHP
21.	<b>Lyndon B. Johnson Memorial Grove</b>	Columbia Island in Lady Bird Johnson Park	DC, NRHP
22.	<b>Lincoln Memorial (Statue of Lincoln)<sup>3</sup></b>	West Potomac Park, Washington, DC	DC, NRHP
23.	<b>Washington Monument and Grounds Historic District<sup>3</sup></b>	14th Street, between Constitution and Independence Avenues, Washington, DC	DC, NRHP
24.	<b>Arlington House Historic District<sup>3</sup></b>	Roughly bound by Sheridan Drive, Ord and Weitzel Drive, Humphrey's Drive and Lee Avenue in Arlington National Cemetery	VLR, NRHP

25.	<b>Arlington National Cemetery Historic District<sup>3</sup></b>	One Memorial Avenue, Arlington, VA	NRHP
26.	<b>St. Elizabeths Hospital Historic District<sup>3</sup></b>	2700 Martin Luther King Jr. Avenue SE, Washington, DC	DC, NRHP, NHL
27.	<b>Netherlands Carillon (within Arlington Ridge Park)<sup>3</sup></b>	Northwest corner of N Meade Street and Marshall Drive, Arlington, VA	VLR, NRHP,
28.	<b>Old Post Office<sup>3</sup></b>	1100 Pennsylvania Avenue NW, Washington, DC	DC, NRHP
29.	<b>The Pentagon<sup>3</sup></b>	US 1, Virginia Route 110, and I-395, Arlington, VA	VLR, NRHP, NHL

<sup>1</sup> Within the Long Bridge Project Area, the GWMP is primarily located in Virginia. Segments of the GWMP, such as where it extends along Lady Bird Johnson Park, are located within the District. Outside of the Project area, the GWMP also extends into Maryland.

<sup>2</sup> The same geographic considerations as described above for the GWMP also apply to the MVMH.

<sup>3</sup> These properties are designated as viewshed locations outside of the contiguous APE boundaries.

### 3.2.2. Eligible Historic Properties

The following properties have been determined eligible for listing in the NRHP by a Federal agency or recommended as eligible by VDHR or DC SHPO.

**Table 3-2 | Eligible Historic Properties**

#	Name	Location	Designation
1.	<b>Bureau of Engraving and Printing Annex</b>	300 14th Street SW, Washington, DC	DOE
2.	<b>Federal Office Building 10A (Orville Wright Building)</b>	800 Independence Ave SW, Washington, DC	DOE
3.	<b>Benjamin Banneker Park/Overlook; Tenth Street Overlook</b>	Terminus of 10th Street SW, Washington, DC	DOE
4.	<b>Richmond, Fredericksburg and Potomac Railroad Historic District</b>	Along CSX right-of-way in VA from Arlington County to the City of Richmond, VA	DOE
5.	<b>Washington Marina Building</b>	1300 Maine Avenue SW, Washington, DC	DOE
6.	<b>L'Enfant Promenade</b>	Section of 10th Street SW between Independence Avenue and Banneker Park, Washington, DC	DOE
7.	<b>Lady Bird Johnson Park</b>	GWMP, Washington, DC	DOE
8.	<b>John F. Kennedy Center for the Performing Arts<sup>1</sup></b>	2700 F Street NW, Washington, DC	DOE
9.	<b>Liberty Loan Federal Building</b>	401 14th Street SW, Washington, DC	DOE

<sup>1</sup> These properties are designated as viewshed locations outside of the contiguous APE boundaries.

### 3.2.3. Properties at or Greater than 45 Years of Age

Although the scope for this project does not include drafting formal DOEs, properties located within the APE that are at least 45 years of age were evaluated against the NRHP Criteria for Evaluation.<sup>9</sup> An assessment of integrity for each property was also undertaken. This age was selected to account for the 50-year threshold that is generally observed in the evaluation of historic significance, and to account for the implementation schedule of the Project (which would extend 5 or more years into the future). These properties were identified using a range of documentation resources including real property and building permit data, historic maps and photographs, and aerial photographs. A preliminary evaluation of each property’s potential historic significance and integrity is provided as a resource for future, or more detailed, evaluation by FRA or others at the time of Project implementation.

**Table 3-3 | Properties at or Greater than 45 Years of Age**

#	Name	Location	Date(s)	Preliminary Determination of Eligibility
1.	<b>425 12<sup>th</sup> Street SW<sup>1</sup></b>	425 12 <sup>th</sup> Street SW, Washington, DC	1959	Likely not eligible.
2.	<b>Astral Building (North Building, L'Enfant Plaza)</b>	955 L'Enfant Plaza SW, Washington, DC	1968	Potentially eligible.
3.	<b>Comsat Building (South Building, L'Enfant Plaza)</b>	950 L'Enfant Plaza SW, Washington, DC	1965	Potentially eligible.
4.	<b>Loew's L'Enfant Plaza Hotel (East Building, L'Enfant Plaza)</b>	470-490 L'Enfant Plaza SW, Washington, DC	1971 to 1973	Potentially eligible.
5.	<b>USPS Building (West Building, L'Enfant Plaza)</b>	475 L'Enfant Plaza SW, Washington, DC	1969 to 1971	Potentially eligible.
6.	<b>398 Long Bridge Drive<sup>1</sup></b>	398 Long Bridge Drive, Arlington, VA	1957	Likely not eligible.

<sup>1</sup> VDHR or DC SHPO concurred with FRA’s preliminary determination of ineligibility. For this reason, these properties are not considered historic properties and are not evaluated for adverse effects.

### 3.2.4. Archaeological Resources

Archaeological resources will be identified using a phased approach. FRA and DDOT have initiated the process by completing a Phase IA Archaeological Assessment in consultation with DC SHPO and VDHR. The Phase IA consists of a desktop review of known archaeological sites and areas that exhibit high archaeological potential. The Phase IA addresses both Action Alternatives and the potential bike-pedestrian crossing. Additional surveys will be conducted as needed now that a Preferred Alternative has been identified. Because NPS has jurisdiction over a majority of the area within the LOD (including the bottom lands of the Potomac River), FRA and DDOT will coordinate with them regarding potential effects on archaeological resources, including potential underwater archaeology. VDHR provided

<sup>9</sup> *National Register of Historic Places, National Register Bulletin, How to Apply the National Register Criteria for Evaluation* (United States Department of the Interior, NPS, revised 2002).

concurrence on the recommendations and conclusions in the draft Phase IA technical report on November 9, 2018. DC SHPO concurred on November 19, 2018.

## 4.0 Assessment of Effects

This section provides a description of the criteria and methodology used to assess the Project's effects on historic properties. Following a summary determination of effect, the detailed assessment is organized by historic property and further separated between permanent or long-term effects, cumulative effects associated with the bike-pedestrian crossing options, and temporary or construction-related effects. Effects on archaeological resources are not addressed here but will be identified using the phased approach described above.

### 4.1. Criteria of Adverse Effect

The Section 106 implementing regulations provide a definition of the criteria of adverse effect: "An adverse effect is found when an undertaking may directly or indirectly alter any of the characteristics of a historic property that qualify it for inclusion in the National Register in a manner that would diminish the property's integrity of location, design, setting, materials, workmanship, feeling, or association."<sup>10</sup>

Examples of adverse effects include:

- Physical destruction or damage;
- Alterations that are inconsistent with the *Secretary's Standards for the Treatment of Historic Properties*, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access;
- Removal of the property from its historic location;
- Change of the character of the property's use or of contributing physical features within the property's setting;
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- Neglect or deterioration (except in certain religious or cultural cases); and
- Transfer, lease, or sale of property out of Federal ownership or control without adequate preservation controls.

### 4.2. Assessment of Effects Methodology

For the Project, FRA and DDOT have identified three main categories of potential adverse effects on historic properties:

- **Direct physical effects** that remove, damage, or alter a historic property within the LOD.
- **Indirect visual effects** that change the character of a historic property's setting or alter significant views.
- **Direct or indirect effects** resulting from vibration, or indirect effects from noise that may alter a historic property or diminish its integrity.

At the May 30, 2018, Consulting Party meeting, FRA and DDOT presented a methodology for assessing adverse effects based on each category above. These methodologies are described below.

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<sup>10</sup> 36 CFR 800.5(a)(1).



### 4.2.1. Physical Effects

Based on the results of conceptual engineering for the Action Alternatives, FRA and DDOT described and evaluated the alternatives to determine their potential for direct physical effects on historic properties. For each historic property, the physical changes have been assessed against all seven aspects of historic integrity. If physical changes were determined to diminish any aspects of integrity that contribute to a property's historic significance, a finding of adverse effect has been made.

### 4.2.2. Visual Effects

Based on the results of conceptual engineering for the Action Alternatives, FRA and DDOT reviewed NRHP and cultural landscape documentation to identify and evaluate significant views and viewsheds for historic properties in the APE. FRA and DDOT also carried out visual assessments utilizing conceptual engineering results and existing survey documentation. For each historic property, the visual effect has been assessed against all seven aspects of historic integrity. If visual effects were determined to diminish any aspects of integrity that contribute to a property's ability to convey its historic significance, a finding of adverse effect has been made. Indirect adverse effects were most likely to result when an alternative permanently removed or impeded views that contribute to the historic significance of a property or diminished a property's historic integrity. Visual effects generally diminished a property's integrity of setting, feeling, and association. This methodology has also followed VDHR guidance for assessing visual effects on historic properties to aid in determining if they are adverse.<sup>11</sup>

#### 4.2.2.1. Viewshed Analysis

To better understand and evaluate the effects of the proposed Action Alternatives, FRA and DDOT prepared a series of photographic simulations that visualize the appearance of these alternatives as compared against existing conditions. The selected locations were sites that demonstrated a moderate or high potential for adverse effects resulting from either Action Alternative. Specific to historic properties, moderate- or high-potential sites were those:

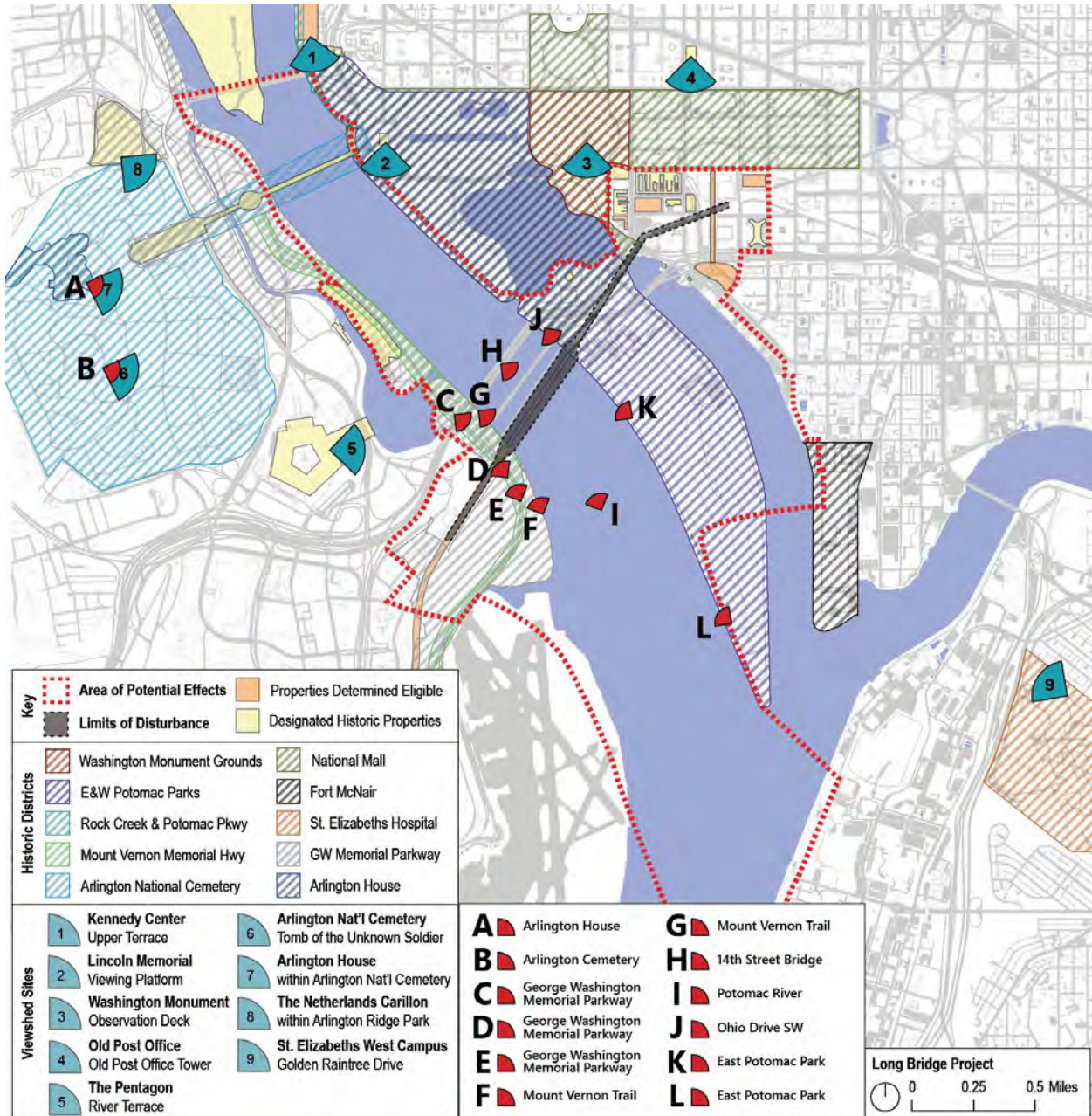
- With views or vistas that contribute demonstrably to the historic significance of a given historic property;
- Where the existing Long Bridge Corridor was currently clearly visible; and
- Where either Action Alternative had the potential to obstruct or alter historic views or vistas or diminish the integrity of a historic property.

At the November 2017 Consulting Parties meeting, FRA and DDOT solicited and received input from the Consulting Parties to determine important viewsheds to include in the APE. In August 2018, FRA and DDOT coordinated with Consulting Parties with technical expertise on the matter, namely the DC SHPO, VDHR, NPS, CFA, and NCPC to develop the list of sites selected for additional visual analysis using photo simulations (see **Figure 4-1** and **Table 4-1**)**Error! Reference source not found.**

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<sup>11</sup> VDHR. Assessing Visual Effects on Historic Properties. Accessed from [https://www.dhr.virginia.gov/pdf\\_files/Assessing\\_Visual\\_Effects\\_JUN10.pdf](https://www.dhr.virginia.gov/pdf_files/Assessing_Visual_Effects_JUN10.pdf). Accessed May 9, 2018.

**Figure 4-1 | Viewshed Locations (overlaid on APE)**



**Table 4-1 | Viewshed Analysis Locations**

#	Site/Property	Location
A	<b>Arlington House</b>	View from Arlington House facing southeast
B	<b>Arlington National Cemetery</b>	View from Tomb of the Unknown Soldier facing southeast
C	<b>GWMP</b>	View from southbound motorway approaching Metrorail Bridge
D	<b>GWMP</b>	View from northbound motorway approaching Metrorail and 14th Street bridges
E	<b>GWMP</b>	View from northbound motorway approaching GWMP railroad crossing
F	<b>GWMP, MVT</b>	View from Gravelly Point Park approaching Long Bridge facing north
G	<b>GWMP, MVT</b>	View from north of Long Bridge facing south
H*	<b>I-395 Bridge</b>	View from center of bridge facing south
I*	<b>Potomac River</b>	View from south of Long Bridge facing north
J	<b>East Potomac Park</b>	View from Ohio Drive SW facing southwest
K	<b>East Potomac Park</b>	View from Buckeye Drive vicinity facing northwest
L	<b>East Potomac Park</b>	View from end of Hains Point facing northwest

*\* These visualizations will also support analysis of impacts in the Visual Resources chapter of the DEIS but are not presented in this report as they are not historic properties.*

#### 4.2.2.1. Methodology to Create Viewshed Simulations

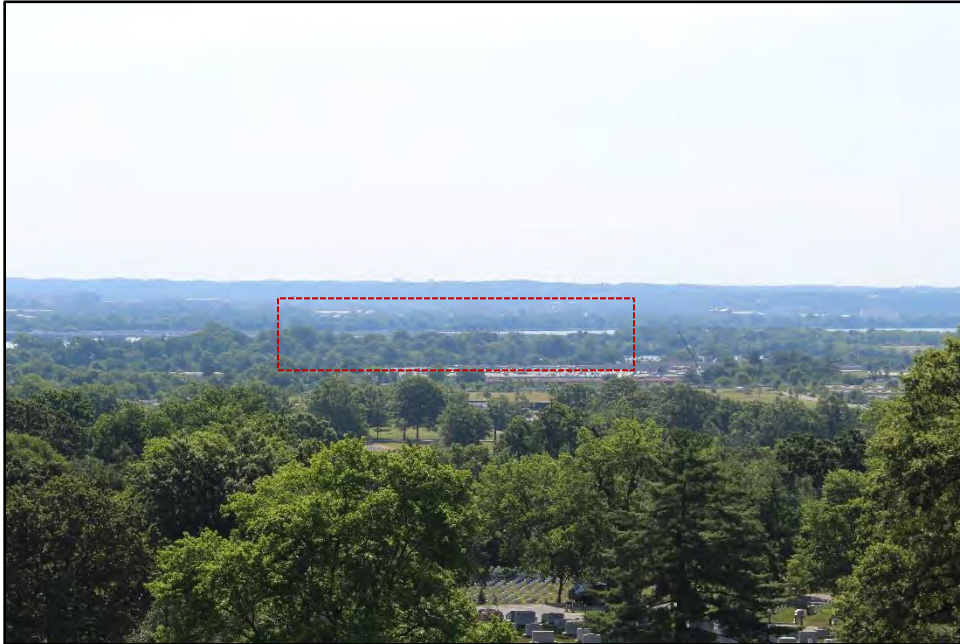
To create these views, FRA and DDOT conducted field surveys to photograph existing conditions. They then created three-dimensional massing models of Action Alternatives A and B that were aligned with the existing Long Bridge Corridor in these locations. The three-dimensional models were overlaid on existing conditions photographs and manipulated digitally to adjust for light and shadow, render materials, and approximate anticipated vegetative conditions. The viewshed simulations are shown on the following pages in **Figures 4-2** through **4-11**.<sup>12</sup>

<sup>12</sup> An additional round of field visits and photo simulations will be conducted in late 2018 to assess winter (leaves-off) views and confirm the findings described in this report. Any changes to the assessment of effects based on winter views will be incorporated into the Final Assessment of Effects Report that will be attached as an appendix to the administrative draft of the DEIS.

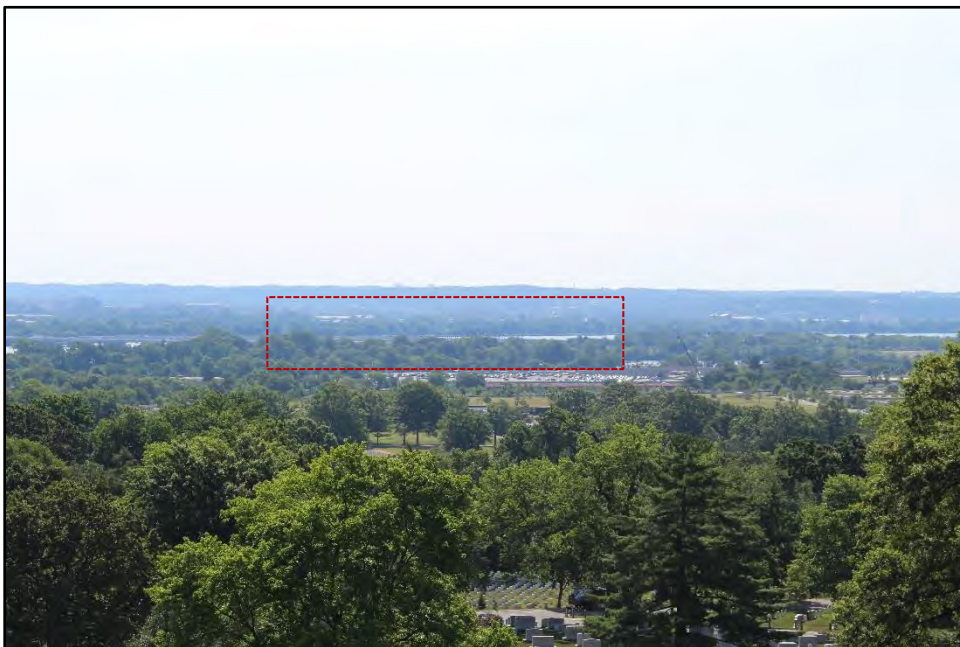
#### 4.2.2.2. Viewshed Simulations

**Figure 4-2** | Viewshed Location A (Arlington House)

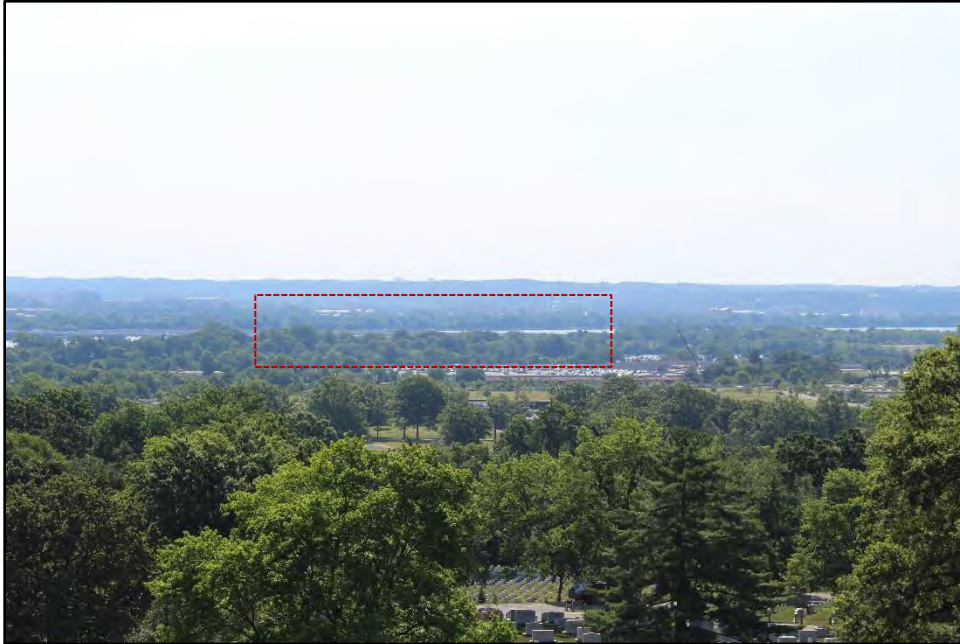
*View from Arlington House facing southeast (existing Long Bridge location outlined in red)*



*Existing Conditions*



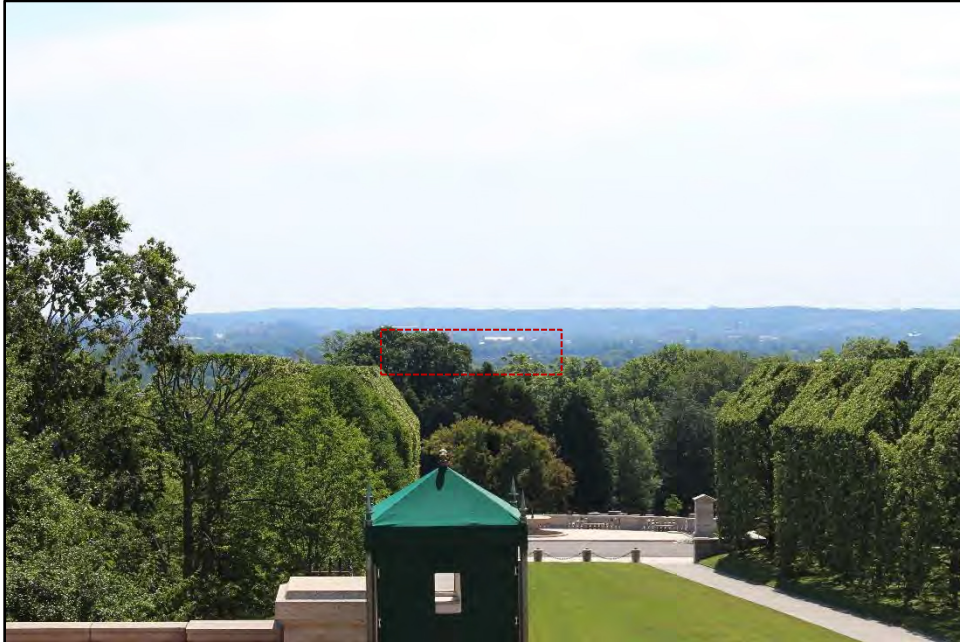
*Action Alternative A: New railroad bridge not visually discernible.*



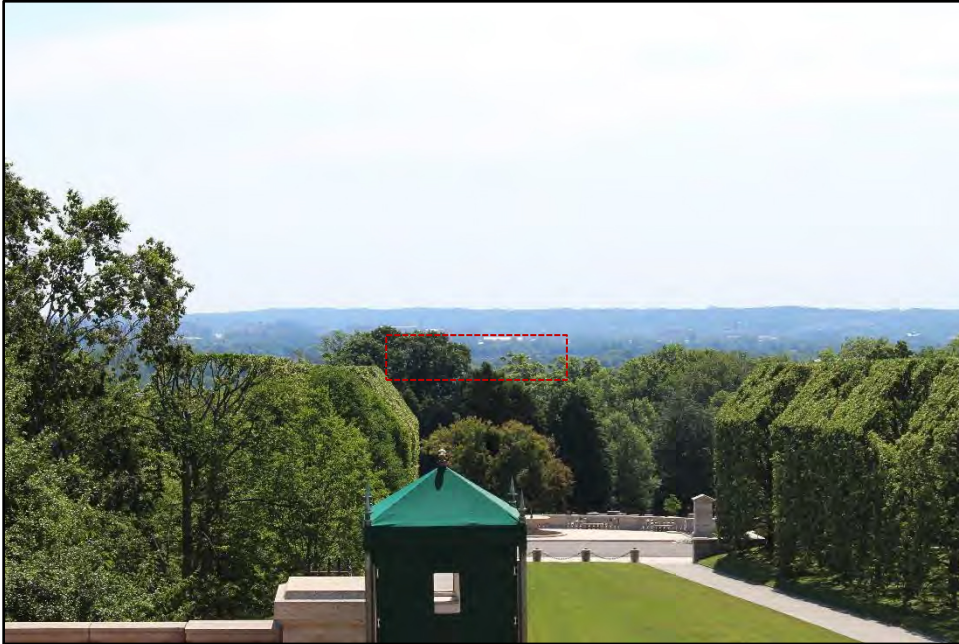
*Action Alternative B: New railroad bridges not visually discernable.*

**Figure 4-3** | Viewshed Location B (Arlington National Cemetery)

*View from Tomb of the Unknown Soldier facing southeast (existing Long Bridge location outlined in red)*



*Existing Conditions*



*Action Alternative A: New railroad bridge not visually discernable.*



*Action Alternative B: New railroad bridges not visually discernable.*

**Figure 4-4** | Viewshed Location C (GWMP)

*View from southbound motorway approaching Metrorail Bridge*



*Existing Conditions*



*Action Alternative A: New railroad bridge visible behind Metrorail Bridge.*



*Action Alternative B: New railroad bridges visible behind Metrorail Bridge.*

**Figure 4-5 | Viewshed Location D (GWMP)**

*View from northbound motorway approaching Metrorail and 14th Street bridges*



*Existing Conditions*





*Action Alternative A: New railroad bridge visible behind existing railroad bridge.*



*Action Alternative B: New railroad bridges visible.*

**Figure 4-6** | Viewshed Location E (GWMP)

*View from northbound motorway approaching GWMP railroad crossing*



*Existing Conditions*



*Action Alternative A: New railroad bridge abutment partially visible.*



*Action Alternative B: New railroad bridges visible.*

**Figure 4-7** | Viewshed Location F (GWMP, MVT)

*View from Gravelly Point Park approaching Long Bridge facing north*



*Existing Conditions*



*Action Alternative A: New railroad bridge not visually discernable.*



*Action Alternative B: New railroad bridge visible.*

**Figure 4-8** | Viewshed Location G (GWMP, MVT)

*View from north of Long Bridge facing south*



*Existing Conditions*



*Action Alternative A: New railroad bridge visible.*



*Action Alternative B: New railroad bridges visible.*

**Figure 4-9** | Viewshed Location J (East Potomac Park)

*View from Ohio Drive SW facing southwest*



*Existing Conditions*



*Action Alternative A: New railroad bridge visible.*



*Action Alternative B: New railroad bridges visible.*

**Figure 4-10 |** Viewshed Location K (East Potomac Park)

*View from Buckeye Drive vicinity facing northwest*



*Existing Conditions*



*Action Alternative A: New railroad bridge not visually discernible.*





*Action Alternative B: New railroad bridge visible.*

**Figure 4-11** | Viewshed Location L (East Potomac Park)

*View from end of Hains Point facing northwest*



*Existing Conditions*



*Action Alternative A: New railroad bridge not visually discernable.*



*Action Alternative B: New railroad bridge visible.*

### 4.2.3. Noise and Vibration Effects

This assessment has been coordinated with the EIS analysis for noise and vibration. FRA and DDOT have overlaid the Noise and Vibration Study Area with the APE (as shown in **Figure 4-12**). **Error! Reference source not found.** In accordance with EIS methodology, noise and vibration analysis has been based on Federal Transit Administration (FTA) Guidelines. Based on the EIS assessment, FRA and DDOT identified historic properties that would experience noise and vibration levels above FTA thresholds. FTA guidelines defer to local construction and operational noise limits where applicable. If noise and vibration levels above FTA or local thresholds were determined to diminish any aspects of integrity that contributed to a property's historic significance, a finding of adverse effect has been made.

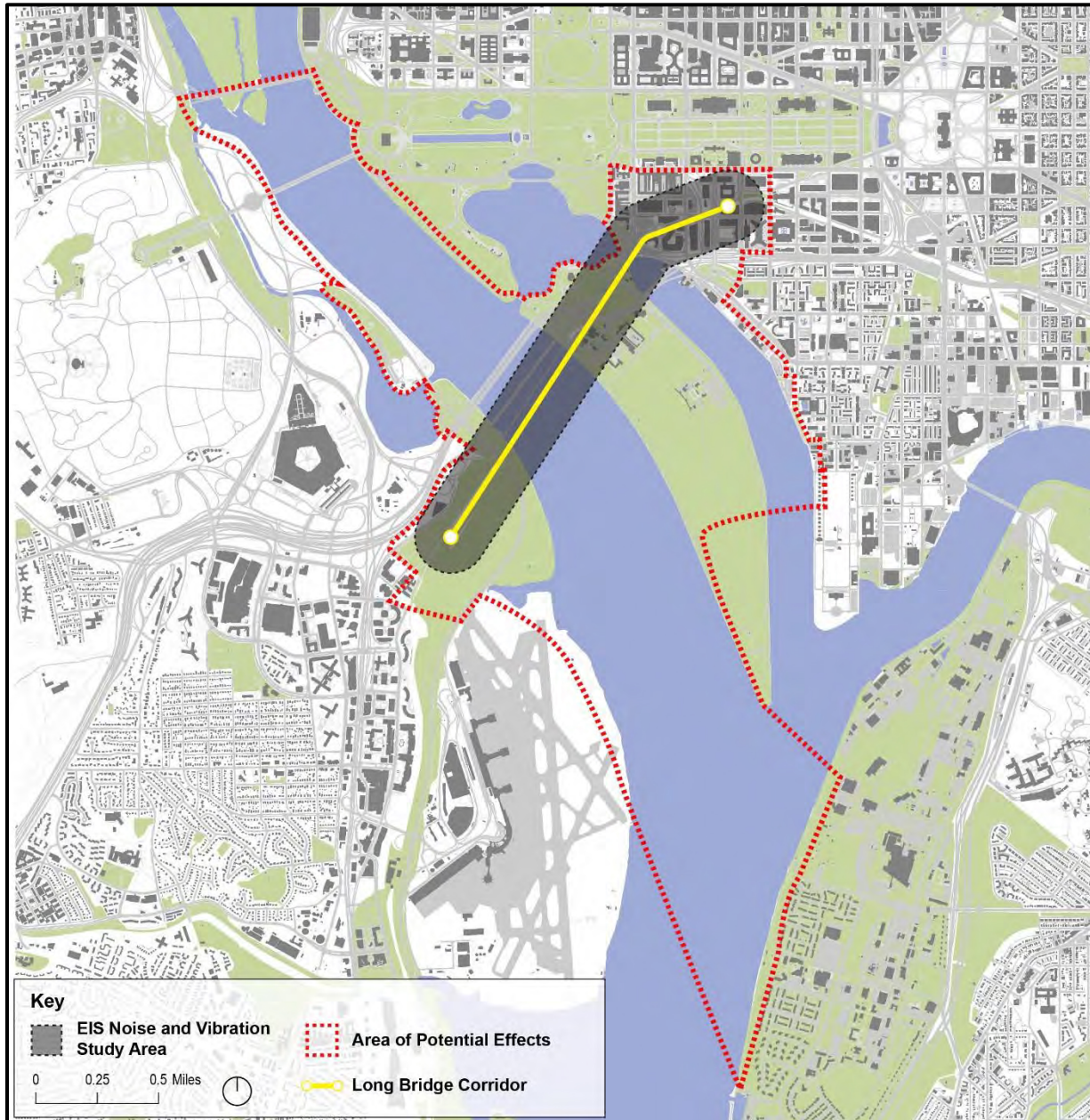
The EIS analysis for noise and vibration evaluates both temporary construction and permanent operational effects due to noise and vibration for the following classifications of each:

- **Ground-borne vibration**, defined as the oscillatory motion of the ground, occurs when forces associated with the wheel-rail interaction are transmitted through the track structure into the ground and into adjacent buildings. Vibration may be perceptible and disturb people or sensitive activities in nearby buildings.
- **Noise** is typically defined as unwanted or undesirable sound. Noise is evaluated based on its potential to cause human annoyance. Because humans can hear certain frequencies or pitches of sound better than others, sound levels are measured and reported using a descriptor called the **A-weighted sound level**. A-weighted sound levels weight different frequencies of sound to correspond to human hearing and are expressed in decibel notation as **dba**.
- **Ground-borne noise** is generated when vibration propagates into a room and causes the walls, ceilings, and floor to vibrate and generate a low frequency rumble. Ground-borne noise is generally only perceptible in buildings where airborne paths (such as paths through windows or openings) are not present. Ground-borne noise is of particular concern for special-use buildings, such as theatres and recording studios.

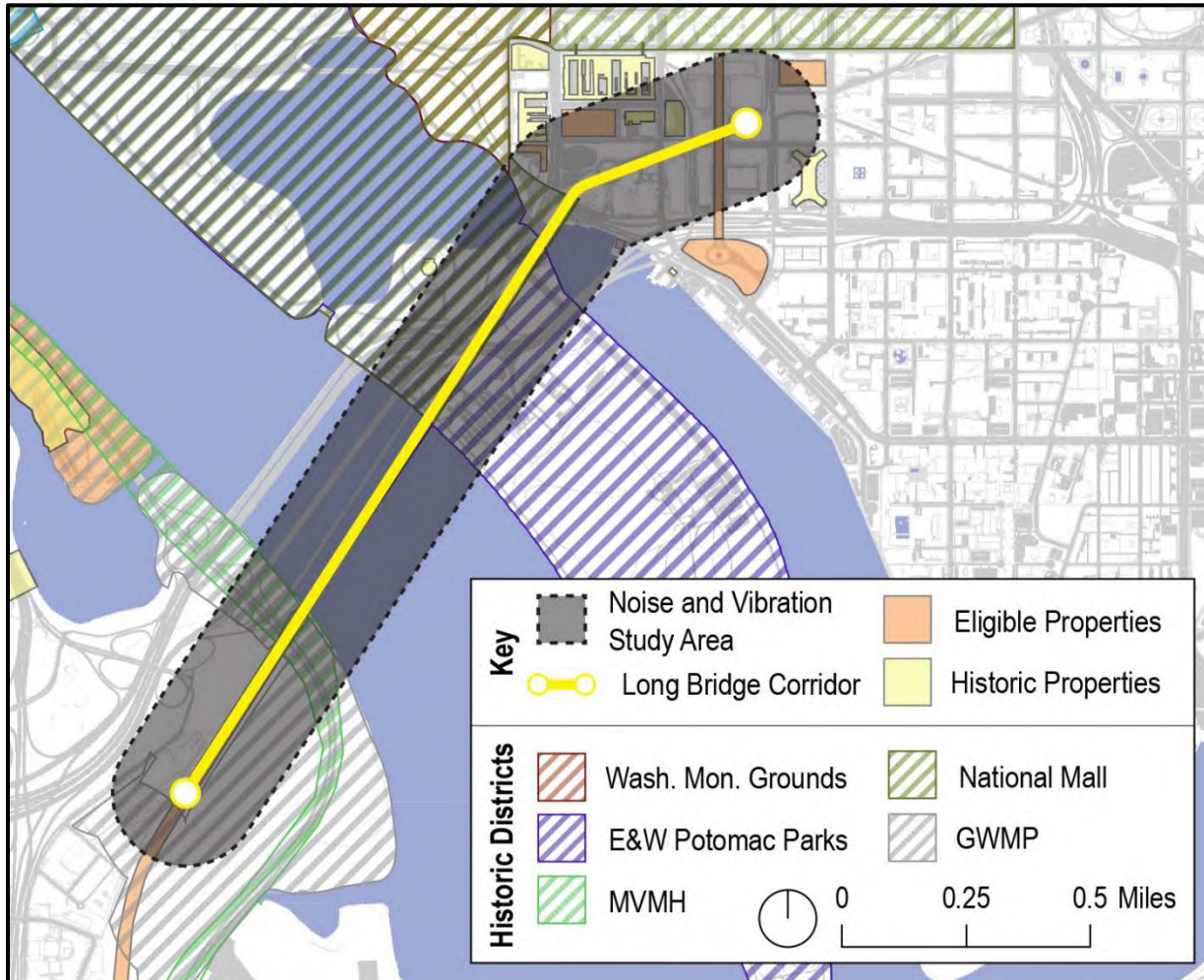
The process to evaluate the potential effects from noise and vibration included identifying noise- and vibration-sensitive receptors, understanding the predominant sources of noise and vibration, and characterizing existing noise and vibration conditions through measurements. Noise receptors were categorized into the FTA Land Use Noise Categories based on the human use of the property as it relates to the potential for noise to cause human annoyance. Receptors are primarily located at ground-level outdoor areas of frequent human use. Parks that have areas for passive recreation are considered sensitive to noise. Commercial and industrial properties are not typically evaluated for operational noise impact unless there are outdoor areas of frequent human use. Residential, institutional, commercial, and industrial land uses are typically evaluated for construction-period noise effects.

Vibration-sensitive land uses are similar to noise-sensitive land uses except that vibration, as it relates to human annoyance, is only evaluated inside buildings and is not evaluated at parks. All buildings and structures are evaluated for potential structural damage due to high-impact construction equipment such as impact pile driving. The thresholds for potential structural damage are greater than the thresholds for human annoyance. Train operations generally do not generate sufficient vibration to cause structural damage unless the trains are extremely close to sensitive buildings. Historic properties are often more susceptible to vibration and have lower thresholds for increased risk of structural damage.

**Figure 4-12** | Noise and Vibration Study Area Overlaid on APE



**Figure 4-13** | Detail of Noise and Vibration Study Area with Historic Properties



### 4.3. Summary Determination of Effect

This assessment finds that **both Action Alternatives adversely affect the GWMP, MVMH, and East and West Potomac Parks historic districts**. Direct adverse effects to these resources would result due to the removal or alteration of contributing features, including vegetation. **The direct adverse effects would be intensified in Action Alternative B** because of greater LOD areas, and the removal of the Long Bridge (a contributing resource to the East and West Potomac Parks Historic District) and a component railway bridge above the MVMH and the GWMP (a contributing resource to the GWMP).

Both alternatives create permanent, indirect adverse effects resulting from visual changes on the GWMP, MVMH, and East and West Potomac Parks historic districts.<sup>13</sup> Analysis compiled to support the

<sup>13</sup> This assessment is based on existing NRHP, DC, VLR, DOE, cultural landscape, and other available documentation for each historic property. NPS has indicated that it considers the existing Long Bridge and the circa-1930 component railroad bridge spanning above the motorway to be contributing to the GWMP Historic District. The NRHP documentation for the GWMP

noise and vibration section of the EIS found there would be no permanent, direct or indirect adverse effects on historic properties resulting from noise or vibration.

Construction activities, including **construction-related staging, access, and noise and vibration for both Action Alternatives adversely affect the National Mall, the MVMH, the GWMP, and East and West Potomac Parks historic districts**. These effects are temporary and would be limited to the periods of construction for each Action Alternative. These effects could likely be avoided or minimized in intensity and duration through appropriate construction management techniques. **Section 0, Temporary and Construction-Related Effects**, provides a list of the historic properties affected.

#### 4.4. Permanent or Long-Term Effects

An evaluation of permanent and long-term effects anticipated from Action Alternative A and Action Alternative B are described in **Table 4-2**. The evaluation is organized by classifications of historic properties as described previously.

**Table 4-2 | Permanent or Long-Term Effects**

Property	Action Alternative A (Preferred Alternative)	Action Alternative B
<b>Designated Historic Properties – Historic Districts (HDs)</b>		
<b>National Mall HD (DC)</b>	<p><b>Physical Effects:</b> A portion of the Long Bridge Corridor extends through the National Mall HD. For Action Alternative A, the limits of disturbance would be approximately 6.9 acres within the HD. Despite this, there are no identified contributing features within the railroad corridor. Therefore, <b><u>no direct adverse effect</u></b> would result under this alternative.</p> <p><b>Visual Effects:</b> NRHP and Cultural Landscape documentation identify no significant views within this portion of the HD. Therefore, <b><u>no indirect adverse effect</u></b> from changes to historic views and viewsheds would result under this alternative.</p> <p><b>Noise and Vibration:</b> The National Mall is located within the Noise and Vibration Study Area. Several receptor locations within the HD were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. None of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effects</u></b> from permanent operational changes</p>	<p><b>Physical Effects:</b> A portion of the Long Bridge Corridor extends through the National Mall HD. For Action Alternative B, the limits of disturbance would be approximately 7.1 acres within the HD. Despite this, there are no identified contributing features within the railroad corridor. Therefore, <b><u>no direct adverse effect</u></b> would result under this alternative.</p> <p><b>Visual Effects:</b> The effects described under Action Alternative A would be similar under Action Alternative B. Therefore, <b><u>no indirect adverse effect</u></b> from changes to historic views and viewsheds would result under this alternative.</p> <p><b>Noise and Vibration:</b> The effects described under Action Alternative A would be similar under Action Alternative B. Therefore, <b><u>no adverse effects</u></b> from permanent operational changes to noise or vibration would result under this alternative.</p>

references neither structure. However, VDHR has recommended that the component railroad bridge to be contributing to the GWMP Historic District. Additionally, because the Long Bridge was extant during the period of significance of the GWMP (1930-1966), it forms a contributing part of the GWMP historic setting.

Property	Action Alternative A (Preferred Alternative)	Action Alternative B
<b>Rock Creek and Potomac Parkway (RCPP) HD (DC)</b>	<p>to noise or vibration would resulting under this alternative.</p>	
	<p><b>Physical Effects:</b> The RCPP is located outside of the limits of disturbance. Therefore, <b>no direct adverse effect</b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The RCPP Potomac Waterfront Section cultural landscape report cites the sweeping, panoramic view of the Potomac River shoreline as being contributing to the historic district. Views south from the RCPP to the Project Area are currently impeded by the Roosevelt Bridge. Therefore, <b>no indirect adverse effects</b> from changes to historic views and viewsheds would result under either Action Alternative.</p> <p><b>Noise and Vibration:</b> The RCPP is located outside of the noise and vibration study area. Therefore, <b>no effect</b> from noise or vibration would result under either Action Alternative.</p>	
<b>George Washington Memorial Parkway (GWMP) HD (DC/VA)</b>	<p><b>Physical Effects:</b> Under Action Alternative A, the limits of disturbance would be approximately 0.9 acres of the GWMP. In addition to the infringement on undeveloped parkland, construction of a new railroad bridge would necessitate the removal of contributing vegetation, especially mature trees that date to the 1932 planting plan of GWMP, which were intended to visually screen the railroad bridge from the motorway. Loss of these trees would diminish the integrity of design, materials (specifically, the contributing vegetation), and feeling of the GWMP, creating a <b>direct adverse effect</b>.</p> <p><b>Visual Effects:</b> The existing, non-contributing bridges along this portion of the GWMP have compromised its integrity of feeling, association, and setting. The addition of a new bridge within this existing cluster of structures has no potential to further diminish these aspects of the Parkway’s integrity. Therefore, <b>no indirect adverse effects</b> from changes to historic views and viewsheds would result under this alternative. See <b>Figures 4-4, 4-5, and 4-6 Error! Reference source not found.</b>for illustrations of these changes.</p> <p>Although the introduction of a new railroad bridge structure above the Potomac River would alter views along the shoreline facing north toward the Monumental Core or south to Hains Point, the findings of the viewshed analysis indicates that these are insufficient to</p>	<p><b>Physical Effects:</b> Impacts described under Action Alternative A would be similar under Action Alternative B, although intensified in a result of a second new railroad bridge construction. The expanded limits of disturbance would be approximately 1.6 acres. Action Alternative B also proposes the replacement of the existing component railroad bridge spanning above the GWMP, which has been recommended by VDHR as a contributing resource to the GWMP, resulting in a <b>direct adverse effect</b>.</p> <p><b>Visual Effects:</b> For views along the Parkway, the effects described under Action Alternative A would be similar under Action Alternative B. Therefore, <b>no indirect adverse effects</b> from changes to historic views and viewsheds would result under this alternative. See <b>Figure 4-4</b> for illustrations of these changes.</p> <p>Action Alternative B replaces the existing Long Bridge. This structure and its central through truss span form a significant visual component of the GWMP when traveling north and south along the MVT. In this location, removing this visual element would diminish the integrity of setting and association of the HD, resulting in an <b>indirect adverse effect</b>. See <b>Figures 4-7 and 4-8Error! Reference source not found.</b> for illustrations of these changes.</p>

Property	Action Alternative A (Preferred Alternative)	Action Alternative B
	<p>diminish any aspect of the integrity of the GWMP.<sup>14</sup> There would be <b><u>no indirect adverse effect</u></b>.</p> <p><b>Noise and Vibration:</b> A portion of the GWMP is located within the Noise and Vibration Study Area. Vibration analysis has indicated that there would be <b><u>no adverse effect</u></b> resulting from increased operational vibration.</p> <p>Noise analysis has indicated that the increase in noise resulting from permanent operational changes would be moderate (that is, perceptible to general users). However, several factors minimize this perceived change, including the existing high degree of ambient noise along the GWMP (generally resulting from automobile traffic along the GWMP and surrounding roads), the relatively infrequent occurrence of train traffic relative to automobile traffic, and the HD's primary use for active recreation. For these reasons, the change in operational noise would not be sufficient to diminish the integrity of setting, feeling, and association of the property. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result.</p>	<p><b>Noise and Vibration:</b> The effects described under Action Alternative A would be similar under Action Alternative B. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result.</p>
<p><b>MVMH HD (DC/VA)<sup>15</sup></b></p>	<p>Effects to the MVMH would be similar and additive to those described above affecting the GWMP, under both Action Alternatives. Both Action Alternatives would create <b><u>direct adverse effects</u></b> on the MVMH. The limits of disturbance for Action Alternative A encompass approximately 0.9 acres of the HD.</p>	<p>Effects to the MVMH would be similar and additive to those described above affecting the GWMP, under both Action Alternatives. Both Action Alternatives would create <b><u>direct adverse effects</u></b> on the MVMH. The limits of disturbance for Action Alternative B encompass approximately 1.6 acres of the HD. Action Alternative B would also create <b><u>indirect adverse effects</u></b> on the MVMH.</p>

<sup>14</sup> The Monumental Core represents the central concentration of the Federal presence in the nation's capital. It is comprised of the National Mall, East and West Potomac Parks, the Federal Triangle, the Northwest Rectangle, and Southwest Federal Center.

<sup>15</sup> The railroad bridge spanning the roadway is described in the NRHP nomination for the MVMH, but it is unclear from the existing NRHP documentation if this structure is classified as a contributing resource. It has been assumed to be contributing for the purposes of this assessment.



Property	Action Alternative A (Preferred Alternative)	Action Alternative B
Plan of the City of Washington HD (DC)	<p><b>Physical Effects:</b> A portion of the Long Bridge Corridor extends through the Plan of the City of Washington HD. Because the Project proposes no alterations to the contributing streets and reservations, there would be <b>no direct adverse effect</b> under either Action Alternative.</p>	<p><b>Visual Effects:</b> The Project proposes no changes to the contributing views and vistas of the HD. Therefore, <b>no indirect adverse effects</b> from changes to historic views and viewsheds would result under either Action Alternative.</p>
	<p><b>Noise and Vibration:</b> A portion of the Plan of the City of Washington is located within the Noise and Vibration Study Area. Vibration analysis has indicated that there would be <b>no adverse effect</b> to contributing components of the Plan of the City of Washington resulting from increased operational vibration.</p>	<p>Noise analysis has indicated that the increase in noise resulting from permanent operational changes would be moderate (that is, perceptible to general users) for certain areas along the Long Bridge Corridor that are located within the boundaries of the Plan of the City of Washington. However, several factors minimize this perceived change, including the existing high degree of ambient noise within the SW Quadrant street grid and the lack of sensitive land uses (such as areas of passive recreation). For these reasons, the change in operational noise would not be sufficient to diminish the integrity of setting, feeling, and association of the property. Therefore, <b>no adverse effect</b> from noise would result under either Action Alternative.</p>
East and West Potomac Parks HD (DC)	<p><b>Physical Effects:</b> Under Action Alternative A, the LOD encompass approximately 5.6 acres within East Potomac Park. In addition to the infringement on undeveloped parkland, construction of a new railroad bridge would necessitate the removal of up to four contributing Japanese Cherry Trees along the perimeter of East Potomac Park, in addition to other mature vegetation. Loss of these features would diminish the integrity of design, materials (specifically, the trees themselves), and feeling of the park, creating a <b>direct adverse effect</b>.</p>	<p><b>Physical Effects:</b> Action Alternative B proposes the removal of the existing Long Bridge to construct a new railroad bridge in its location. The Long Bridge (Potomac Railroad Bridge) is a contributing element of the HD. Removing it would diminish the integrity of design, feeling, association, and materials of the HD, creating a <b>direct adverse effect</b>. Additionally, as described under Action Alternative A, removal of the contributing Japanese Cherry Trees and other mature vegetation would result in a <b>direct adverse effect</b>. This effect would be intensified because of a second new railroad bridge construction, necessitating the removal of up to seven contributing cherry trees, and the expansion of the LOD to approximately 5.8 acres.</p>
	<p><b>Visual Effects:</b> Addition of a new bridge would obstruct views of the existing Long Bridge from the north, diminishing the visual integrity of this contributing structure and resulting in an <b>indirect adverse effect</b>. Otherwise, viewshed simulations have indicated that Action Alternative A has no potential to impact contributing views, particularly those around the perimeter of East Potomac Park, including those facing toward the Monumental Core and views up and down the Potomac River toward Virginia. See <b>Figures 4-9, 4-10, and 4-11</b> for illustrations of these changes.</p>	<p><b>Visual Effects:</b> The existing Long Bridge, with its central through truss span, is a contributing visual element to the HD. Removing it would diminish the integrity of setting, feeling, and association of the HD, creating an <b>indirect adverse effect</b>. The other indirect adverse effects described under</p>

Property	Action Alternative A (Preferred Alternative)	Action Alternative B
	<p><b>Noise and Vibration:</b> A portion of East Potomac Park is located within the Noise and Vibration Study Area. Several receptor locations within the HD were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. None of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result.</p>	<p>Action Alternative A would be similar under Action Alternative B.</p> <p><b>Noise and Vibration:</b> The effects described under Action Alternative A would be similar under Action Alternative B. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result.</p>
<p><b>Fort Leslie J. McNair Historic District (The Old Arsenal) HD (DC)</b></p>	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The NRHP documentation for this property identifies no significant views or viewsheds; however, based on the siting of the HD and its relatively open shoreline, this analysis finds that contributing views would include the views of the Potomac River and the District around the perimeter of the site. The Project has no potential to alter or impede these views. The Project also has no potential to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p> <p><b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
<p><b>Washington Monument and Grounds HD (DC)</b></p>	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The NRHP and cultural landscape documentation for this property references the multiple significant views and vistas that contribute to the significance of the Monument and its surrounding landscape. Relevant to the Project, this includes views from the top of the Monument to the surrounding cityscape and beyond. Although both Action Alternatives would be visible from the Monument viewing platform, the perceptible changes would be miniscule in relation to the degree and expansive nature of the contextual changes resulting from decades of contemporary development. The Project Area is also located beyond the main focal points in the Monumental Core that the viewing platform provides, such as to the Capitol and White House, and would not obstruct these views. For these reasons, neither Action Alternative has the potential to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p> <p><b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
<p><b>Arlington House HD (VA)</b></p>	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p>	

Property	Action Alternative A (Preferred Alternative)	Action Alternative B
Arlington National Cemetery HD (VA)	<p><b>Visual Effects:</b> The NRHP documentation for this property references the dramatic, panoramic views of the District afforded by the house’s prominent siting. Viewshed simulations prepared for this property indicate that the Action Alternatives would be minimally visible and have no potential to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative. See <b>Figure 4-2 Error! Reference source not found.</b>for illustrations of these changes.</p> <p><b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
St. Elizabeths Hospital HD (DC)	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The NRHP documentation for this property repeatedly references the panoramic views toward the District. Viewshed simulations prepared for this property indicate that the Action Alternatives would be minimally visible and have no potential to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative. See <b>Figure 4-3 Error! Reference source not found.</b>for illustrations of these changes.</p> <p><b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
St. Elizabeths Hospital HD (DC)	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The NHL and cultural landscape documentation for this property reference the panoramic views of the District and Alexandria, which contribute to the significance of the therapeutic landscape at St. Elizabeths. Although the existing Long Bridge has limited visibility from parts of the landscape, in consideration of the great distance between the two sites, there is no potential to impede or alter these panoramic views under both Action Alternatives and no potential to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p> <p><b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
Designated Historic Properties – Individual Historic Properties		
Thomas Jefferson Memorial (DC)	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The NRHP documentation for this property identifies no significant views or viewsheds; however, in consideration of the siting and design of the Memorial, this analysis finds that they would include the vistas of the Tidal Basin and reciprocal views between the Memorial and White House. Because the Long Bridge Corridor is not visible from the Memorial due to substantial groupings of mature vegetation around the southeastern edge of the Memorial site and the adjacent elevated roadways, the project has no potential to alter or impede these views or to diminish the property’s integrity of setting, feeling, or association.</p>	

Property	Action Alternative A (Preferred Alternative)	Action Alternative B
Central Heating Plant (DC)	Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.	
	<b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.	
	<b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.	
<b>Visual Effects:</b> The NRHP documentation for this property identifies no significant views or viewsheds. This analysis has identified no significant views or viewsheds in the direction of the Long Bridge Corridor from any areas that were publicly accessible at the time of field survey. Additionally, the property is located in a highly developed urban context that largely postdates the development of the Long Bridge Corridor. Therefore, the Project has no potential to diminish the property’s integrity of setting, feeling, or association. <b><u>No indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.		<b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Receptor locations within these boundaries were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. Within close proximity to this property, none of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result under either Action Alternative.
USDA Cotton Annex (DC)	<b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.	
	<b>Visual Effects:</b> The NRHP documentation for this property identifies no significant views or viewsheds. This analysis has identified no significant views or viewsheds in the direction of the Long Bridge Corridor from any areas that were publicly accessible at the time of field survey. Additionally, the property is located in a highly developed urban context that largely postdates the development of the Long Bridge Corridor. Therefore, the Project has no potential to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.	
	<b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Receptor locations within these boundaries were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. Within close proximity to this property, none of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result under either Action Alternative.	
HUD Building (Robert C. Weaver Federal Building) (DC)	<b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.	
	<b>Visual Effects:</b> The NRHP documentation for this property identifies no significant views or viewsheds. This analysis has identified no significant views or viewsheds in the direction of the Long Bridge Corridor from any areas that were publicly accessible at the time of field survey.	

Property	Action Alternative A (Preferred Alternative)	Action Alternative B
USDA South Building (DC)	<p>Additionally, the property is located in a highly developed urban context that largely postdates the development of the Long Bridge Corridor. Therefore, the Project has no potential to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p> <p><b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Receptor locations within these boundaries were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. Within close proximity to this property, none of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The NRHP documentation for this property identifies no significant views or viewsheds. This analysis has identified no significant views or viewsheds in the direction of the Long Bridge Corridor from any areas that were publicly accessible at the time of field survey. Additionally, the property is located in a highly developed urban context that largely postdates the development of the Long Bridge Corridor. Therefore, the Project has no potential to diminish the property’s integrity of setting, feeling, or association. <b><u>No indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p> <p><b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Receptor locations within these boundaries were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. Within close proximity to this property, none of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
Bureau of Engraving and Printing (DC)	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The NRHP documentation for this property identifies no significant views or viewsheds. This analysis has identified no significant views or viewsheds in the direction of the Long Bridge Corridor from any areas that were publicly accessible at the time of field survey. Additionally, the property is located in a highly developed urban context that largely postdates the development of the Long Bridge Corridor. Therefore, the Project has no potential to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p> <p><b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Receptor locations within these boundaries were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. Within close proximity to this property, none of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The NRHP documentation for this property identifies no significant views or viewsheds. This analysis has identified no significant views or viewsheds in the direction of the Long Bridge Corridor from any areas that were publicly accessible at the time of field survey. Additionally, the property is located in a highly developed urban context that largely postdates the development of the Long Bridge Corridor. Therefore, the Project has no potential to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p> <p><b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Receptor locations within these boundaries were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. Within close proximity to this property, none of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result under either Action Alternative.</p>	

Property	Action Alternative A (Preferred Alternative)	Action Alternative B
Auditor's Building Complex (DC)	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p>	
	<p><b>Visual Effects:</b> The NRHP documentation for this property identifies no significant views or viewsheds. This analysis has identified no significant views or viewsheds in the direction of the Long Bridge Corridor from any areas that were publicly accessible at the time of field survey. Additionally, the property is located in a highly developed urban context that largely postdates the development of the Long Bridge Corridor. Therefore, the Project has no potential to diminish the property's integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p>	
	<p><b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
Arlington Memorial Bridge (and related features) (DC/VA)	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p>	
	<p><b>Visual Effects:</b> The NRHP documentation for this property identifies no significant views or viewsheds. However, based on the bridge's design and urban context, this analysis finds that they include reciprocal views between Arlington National Cemetery and the Lincoln Memorial and the panoramic vistas along the Potomac River. The latter have been interrupted over time by the Roosevelt Bridge and 14th Street-Metrorail complex of bridges. Due to the Project's location relative to the Memorial Bridge and the obstructions listed above, it has no potential to impede contributing views or to diminish the property's integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p>	
	<p><b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
Titanic Memorial (DC)	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p>	
	<p><b>Visual Effects:</b> The NRHP documentation for this property identifies no significant views or viewsheds. The memorial was moved to its existing location in 1968 and does not retain integrity of location or setting. The NRHP documentation for the property (prepared in 2006) described the new site as much less successful and appropriate for the memorial than was its original site. Despite this fact, the memorial has retained its general context and siting in proximity to a body of water. Neither Action Alternative has any potential to alter this context, and therefore no potential to further diminish the property's integrity of setting, location, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p>	
	<p><b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
Lunch Room Building and	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p>	

Property	Action Alternative A (Preferred Alternative)	Action Alternative B
Oyster Shucking Shed (DC)	<p><b>Visual Effects:</b> The NRHP documentation for this property identifies no significant views or viewsheds. This analysis has identified no significant views or viewsheds in the direction of the Long Bridge Corridor from any areas that were publicly accessible at the time of field survey. Additionally, the property is located in a highly developed urban context that largely postdates the development of the Long Bridge Corridor. Therefore, the Project has no potential to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p> <p><b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
Cuban Friendship Urn (DC)	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The NRHP documentation for this property identifies no significant views or viewsheds. The urn was moved to its existing location in 1997 and does not retain integrity of location or setting. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p> <p><b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Receptor locations within these boundaries were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. Within close proximity to this property, none of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
Theodore Roosevelt Island National Memorial (Analoastan Island) (DC)	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The NRHP documentation for this property identifies no significant views or viewsheds. In consideration of the period of significance of the property and the failed attempts to develop planned viewing platforms, this analysis identifies no significant views in the direction of the Long Bridge Corridor.<sup>16</sup> Therefore, the project has no potential to alter contributing views or to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p> <p><b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
Lyndon B. Johnson	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p>	

<sup>16</sup> During the 1930s, a viewing platform at the south end of the island was planned, allowing views facing south and east toward the Lincoln Memorial and generally toward the Potomac River and Long Bridge beyond. These plans were scrapped during the construction of the Roosevelt Bridge in the 1960s. During much of the nineteenth and twentieth centuries, the Potomac River shorelines along Georgetown and Foggy Bottom were industrial in character, and these views from Roosevelt Island were considered undesirable and contrary to its natural character.

Property	Action Alternative A (Preferred Alternative)	Action Alternative B
Memorial Grove (DC/VA)	<p><b>Visual Effects:</b> The NRHP documentation identifies significant views from the property to the Monumental Core of the District. Because the Long Bridge Corridor extends to the southeast of the Grove and is not visible from within the property, the Project it has no potential to alter or impede these views or to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p> <p><b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
Lincoln Memorial (Statue of Lincoln) (DC)	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The NRHP and cultural landscape documentation for this property notes the importance of the West Potomac Park setting to the design of the Lincoln Memorial, including the panoramic views of the Potomac River and Mall its site afforded. Maturing vegetation in addition to several modern bridges has since obscured these views to the south, southeast, and northeast. In consideration of these existing conditions and the far distance between the Lincoln Memorial and the Long Bridge Corridor, both Action Alternatives would result in <b><u>no indirect adverse effect</u></b> on the property.</p> <p><b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
Arlington Ridge Park (VA)	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The NRHP documentation for this property identifies the park and contributing Netherlands Carillon as a significant western backdrop for the National Mall and West Potomac Park. However, the Netherlands Carillon was not intended to serve as a public viewing platform and views from it do not contribute to the significance of the property. The Long Bridge Corridor is not visible from the property at ground level, and therefore the Project has no potential to affect contributing views or viewsheds or to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p> <p><b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
Old Post Office (DC)	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The NRHP documentation for this property identifies no significant views or viewsheds. The existing viewing platform was created after the property’s period of significance and does not contribute to its significance. This analysis has identified no significant views or viewsheds in the direction of the Long Bridge Corridor from any areas that were publicly accessible at the time of field survey. Therefore, the Project has no potential to affect contributing views or viewsheds or to diminish the property’s integrity of setting, feeling, or</p>	



Property	Action Alternative A (Preferred Alternative)	Action Alternative B
The Pentagon (VA)	association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.	
	<b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.	
	<b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.	
<b>Visual Effects:</b> The NRHP documentation for this property identifies no significant views or viewsheds; However, the landmark boundaries extend to include the plaza facing the Potomac River, so this analysis finds that the related views of the District’s Monumental Core and Potomac River are important to the character of the property. Although the existing Long Bridge is minimally visible from this plaza, given the relationship of the Long Bridge Corridor to the southeast of this viewshed, there is no potential to impede views under either Action Alternative. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.		
<b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.		
<b>Properties Determined Eligible</b>		
Bureau of Engraving and Printing Annex (DC)	<b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.	
	<b>Visual Effects:</b> The DOE documentation for this property identifies no significant views or viewsheds. This analysis has identified no significant views or viewsheds in the direction of the Long Bridge Corridor from any areas that were publicly accessible at the time of field survey. Additionally, the property is located in a highly developed urban context that largely postdates the development of the Long Bridge Corridor. Therefore, the Project has no potential to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.	
	<b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Receptor locations within these boundaries were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. Within close proximity to this property, none of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result under either Action Alternative.	
Federal Office Building 10A (Orville Wright Building) (DC)	<b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.	
	<b>Visual Effects:</b> The DOE documentation for this property identifies no significant views or viewsheds. This analysis has identified no significant views or viewsheds in the direction of the Long Bridge Corridor from any areas that were publicly accessible at the time of field survey. Additionally, the property is located in a highly developed urban context that largely postdates the development of the Long Bridge Corridor. Therefore, the Project has no potential to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect</u></b>	

Property	Action Alternative A (Preferred Alternative)	Action Alternative B
Benjamin Banneker Park/Overlook; Tenth Street Overlook (DC)	<p><b>adverse effects</b> from changes to historic views and viewsheds would result under either Action Alternative.</p>	
	<p><b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Receptor locations within these boundaries were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. Within close proximity to this property, none of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b>no adverse effect</b> from noise or vibration would result under either Action Alternative.</p>	
	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b>no direct adverse effect</b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The cultural landscape and DOE documentation for this property identifies significant views facing south and east overlooking the cityscape below and Potomac River and Washington Channel beyond. This documentation also notes that potential views toward the Tidal Basin and Jefferson Memorial were obscured by the 14<sup>th</sup> Street Bridges at the time of the Overlook’s construction. Due to the Project’s location relative to the Overlook, it has no potential to impede extant contributing views toward the Potomac River or cityscape below. Additionally, the property is located in a highly developed urban context that largely postdates the development of the Long Bridge Corridor. Therefore, the Project has no potential to diminish the property’s integrity of setting, feeling, or association. Therefore, <b>no indirect adverse effects</b> from changes to historic views and viewsheds would result under either Action Alternative.</p> <p><b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b>no effect</b> from noise or vibration would result under either Action Alternative.</p>	
Richmond, Fredericksburg and Potomac (RF&P) Railroad HD (VA)	<p><b>Physical Effects:</b> The Project proposes alterations to the RF&amp;P Railroad at its eastern terminus to accommodate the additional two tracks and link these tracks to the new bridge proposed under each Action Alternative. Despite this change, the HD would continue its use as a railroad corridor, and the primary components of its operation and design would remain intact, both within this section and along the remainder of its approximately 110-mile length between the Potomac River and Richmond. For these reasons, the property would retain its integrity of design, materials, feeling, location, workmanship, association, and setting. Therefore, the Action Alternatives would result in <b>no adverse effect</b>.</p>	
	<p><b>Visual Effects:</b> The DOE documentation for this property identifies no significant views or viewsheds and this analysis has identified none further. Therefore, <b>no indirect adverse effects</b> from changes to historic views and viewsheds would result under either Action Alternative.</p>	
	<p><b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Because the property’s significance is directly related to its historic and current use as a railroad corridor, a moderate (that is, perceptible but not severe) increase in noise in vibration would not indirectly diminish its integrity. The permanent changes in operational vibration would not exceed FTA thresholds for vibration. Therefore, <b>no adverse effect</b> from noise or vibration would result under either Action Alternative.</p>	

Property	Action Alternative A (Preferred Alternative)	Action Alternative B
Washington Marina Building (DC)	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The DOE documentation for this property identifies no significant views or viewsheds. This analysis has identified no significant views or viewsheds in the direction of the Long Bridge Corridor from any areas that were publicly accessible at the time of field survey. Additionally, the property is located in a highly developed urban context that largely postdates the development of the Long Bridge Corridor. Therefore, the Project has no potential to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p> <p><b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Receptor locations within these boundaries were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. Within close proximity to this property, none of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
L’Enfant Promenade (DC)	<p><b>Physical Effects:</b> The L’Enfant (10<sup>th</sup> Street) Promenade extends directly above the Long Bridge Corridor. However, the Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The DOE documentation for this property identifies no significant views or viewsheds. This analysis has identified no significant views or viewsheds in the direction of the Long Bridge Corridor from any areas that were publicly accessible at the time of field survey. Additionally, the property is located in a highly developed urban context that largely postdates the development of the Long Bridge Corridor. Therefore, the Project has no potential to diminish the property’s integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.</p> <p><b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Receptor locations within these boundaries were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. Within close proximity to this property, none of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
Lady Bird Johnson Park (DC)	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p> <p><b>Visual Effects:</b> The DOE and cultural landscape documentation for this property identifies multiple views and vistas that contribute to the significance of the island that comprises Lady Bird Johnson Park. Relevant to the Long Bridge Project, this includes panoramic views of vehicles traveling along the MVMH and GWMP and general internal views north and south along the island. Field survey conducted along the motorway has indicated that the existing Long Bridge is nearly imperceptible when travelling along the motorway and not at all visible from the interior of the island. This is due to the angle of visibility, the extent of mature vegetation, and the visual obstructions caused by the Memorial and 14th Street-Metrorail</p>	

Property	Action Alternative A (Preferred Alternative)	Action Alternative B
John F. Kennedy Center for the Performing Arts (DC)	Bridges. For this reason, the Project has no potential to impact contributing views or viewsheds. No <b><u>indirect adverse effect</u></b> would result under either Action Alternative.	
	<b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.	
	<b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.	
	<b>Visual Effects:</b> The DOE documentation for this property identifies no significant views or viewsheds. However, in consideration of the design and siting of the Kennedy Center, this analysis has identified the panoramic views of the Potomac River and environs as being contributing to the significance of this property. Field survey has indicated that the existing Long Bridge is minimally visible from the upper terrace of the property, but these views are diminished by the far distance and intervening obstructions, notably the 14th Street and Metrorail bridges. For this reason, the Project has no potential to alter or impede contributing views. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.	
	<b>Noise and Vibration:</b> This property is located outside of the Noise and Vibration Study Area. Therefore, <b><u>no effect</u></b> from noise or vibration would result under either Action Alternative.	
	<b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.	
Liberty Loan Federal Building (DC)	<b>Visual Effects:</b> The DOE documentation for this property identifies no significant views or viewsheds. This analysis has identified no significant views or viewsheds in the direction of the Long Bridge Corridor from any areas that were publicly accessible at the time of field survey. Additionally, the property is located in a highly developed urban context that largely postdates the development of the Long Bridge Corridor. Therefore, the Project has no potential to diminish the property's integrity of setting, feeling, or association. Therefore, <b><u>no indirect adverse effects</u></b> from changes to historic views and viewsheds would result under either Action Alternative.	
	<b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Receptor locations within these boundaries were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. Within close proximity to this property, none of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result under either Action Alternative.	
	<b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.	
<b>Properties at or Greater than 45 Years of Age</b>		
Astral Building (DC)	<b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.	
	<b>Visual Effects:</b> Given the nature of the Project and the location of this property relative to the Long Bridge Corridor, there would likely be <b><u>no adverse effect</u></b> under either Action Alternative on contributing views or viewsheds. This finding will be reevaluated if contributing views or viewsheds are identified prior to Project implementation.	

Property	Action Alternative A (Preferred Alternative)	Action Alternative B
Comsat Building (DC)	<p><b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Receptor locations within these boundaries were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. Within close proximity to this property, none of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p>	
	<p><b>Visual Effects:</b> Given the nature of the Project and the location of this property relative to the Long Bridge Corridor, there would likely be <b><u>no adverse effect</u></b> under either Action Alternative on contributing views or viewsheds. This finding will be reevaluated if contributing views or viewsheds are identified prior to Project implementation.</p>	
Loew's L'Enfant Plaza Hotel (DC)	<p><b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Receptor locations within these boundaries were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. Within close proximity to this property, none of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p>	
	<p><b>Visual Effects:</b> Given the nature of the Project and the location of this property relative to the Long Bridge Corridor, there would likely be <b><u>no adverse effect</u></b> under either Action Alternative on contributing views or viewsheds. This finding will be reevaluated if contributing views or viewsheds are identified prior to Project implementation.</p>	
USPS Building (DC)	<p><b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Receptor locations within these boundaries were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. Within close proximity to this property, none of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result under either Action Alternative.</p>	
	<p><b>Physical Effects:</b> The Project proposes no direct physical changes to this property. Therefore, <b><u>no direct adverse effect</u></b> would result under either Action Alternative.</p>	
	<p><b>Visual Effects:</b> Given the nature of the Project and the location of this property relative to the Long Bridge Corridor, there would likely be <b><u>no adverse effect</u></b> under either Action Alternative on contributing views or viewsheds. This finding will be reevaluated if contributing views or viewsheds are identified prior to Project implementation.</p>	
<p><b>Noise and Vibration:</b> This property is located within the Noise and Vibration Study Area. Receptor locations within these boundaries were tested to determine the amount of increase of noise and vibration resulting from permanent operational changes. Within close proximity to this property, none of these levels exceeded FTA thresholds for noise or vibration. Therefore, <b><u>no adverse effect</u></b> from noise or vibration would result under either Action Alternative.</p>		

## 4.5. Cumulative Effects

As previously stated, the Long Bridge Project is exploring the potential for a bike and pedestrian connection that follows the trajectory of Long Bridge. This potential connection (Option 2) could constitute a cumulative effect as a result of the Long Bridge Project. An evaluation of these effects is described in **Table 4-3** below. The evaluation is organized by classifications of historic properties as described previously. For properties not included in this list, no adverse effects are anticipated.

**Table 4-3 | Cumulative Effects – Bike-Pedestrian Crossing Option**

Property	Option 2 – Independent Bridge
<b>Designated Historic Properties – Historic Districts (HD)</b>	
<b>GWMP HD (DC/VA)</b>	The LOD for Option 2 would encompass approximately 0.7 acres of the HD.
	In addition to the infringement on undeveloped parkland, construction of a possible bike-pedestrian crossing and access ramp has the potential to remove contributing vegetation, especially mature trees that date to the 1932 planting plan of the parkway, which were intended to visually screen the railroad bridge from the motorway. This would result in a <b>direct adverse effect</b> .
	The existing, non-contributing bridges along this portion of the GWMP have compromised its integrity of feeling, association, and setting. The addition of a potential bike-pedestrian bridge within this existing cluster of structures has no potential to further diminish these aspects of the GWMP’s integrity. Therefore, <b>no indirect adverse effects</b> from changes to historic views and viewsheds would result under this alternative.
<b>MVMH HD (DC/VA)</b>	Effects to the MVMH would be similar and additive to those described above affecting the GWMP. Option 2 would create <b>direct adverse effects</b> on the MVMH. Under Option 2, the LOD would encompass approximately 0.6 acres of the HD.
<b>East and West Potomac Parks HD (DC)</b>	Construction of a bike-pedestrian crossing and access ramp would necessitate the removal of up to two contributing Japanese Cherry Trees along the perimeter of East Potomac Park in addition to other mature vegetation. This would result in a <b>direct adverse effect</b> . The LOD for Option 2 would encompass approximately 0.3 acres of the HD.
	The ramp crossing and access ramp also have the potential to obstruct views of the existing Long Bridge from the north. This obstruction would diminish the visual integrity of the HD and would create an <b>indirect adverse effect</b> .

## 4.6. Temporary Effects

The two Action Alternatives for the Project can be feasibly constructed. However, the proposed new bridge structures and other infrastructure along the Long Bridge Corridor combined with site constraints present challenges for contractor access and staging, material transportation, and completing site work. For both Action Alternatives, it is anticipated that construction materials and equipment would be transported via trucks as well as barging up the Potomac River. Materials and equipment transported via river would be unloaded onto temporary bulkheads constructed within the Potomac River on the NPS-administered parkland on either side of the river in both the District and Virginia.

Although no specific construction start date or schedule has been determined, it is projected that Action Alternative A (Preferred Alternative) construction would last approximately 60 months. Under Action Alternative B, this schedule extends to approximately 99 months, which includes phasing the bridges over the Potomac River where the new upstream bridge is constructed and put into service before demolition can begin on the existing Long Bridge. The new downstream bridge would then be constructed in the same location as the existing Long Bridge. Apart from the new Potomac River bridge(s) proposed under each Action Alternative, construction activities would primarily include track construction throughout the Long Bridge Corridor, associated bridge construction at abutments and piers, construction of embankments and retaining walls, and bridge superstructure construction.

An evaluation of temporary direct and indirect adverse effects resulting from visual and physical changes are described in **Table 4-4**. Temporary impacts under Action Alternative B would be similar to those described for Action Alternative A (Preferred Alternative) except that the estimated duration of construction would be approximately 99 months due to the replacement of the existing Long Bridge and component railroad bridge that crosses the GWMP.

**Table 4-4** | Temporary Effect Assessment Resulting from Visual and Physical Changes

Property	Effect Determination
<b>Designated Historic Properties – Historic Districts (HD)</b>	
<b>National Mall HD (DC)</b>	<p>Construction activities for both Action Alternatives would require temporary use of, and access to, various areas of East Potomac Park that form a part of the National Mall HD. Both NPS Parking Lot B and NPS Parking Lot C would be closed during construction and used for construction staging and access. These parking lots are located within, but do not contribute to, the National Mall HD. Temporary construction access and staging areas would also be required for areas between the DOD Facility and I-395 North lanes, both east and west of the CSXT tracks.</p> <p>Use of these areas for construction access and staging would temporarily diminish the integrity of setting, feeling, and association of the National Mall Historic District and would constitute a <b>temporary indirect adverse effect</b> on this property.</p>
<b>GWMP HD (DC/VA)</b>	<p>Construction of both Action Alternatives would require the temporary use of land along the GWMP and MVT to support construction activities. Construction staging and access areas would be located at the GWMP crossing in the median of the roadway as well as west and east of the crossing. Construction would require temporary relocation of a portion of the MVT for public safety and to allow construction access and staging along the water.</p>

Property	Effect Determination
MVMH HD (DC/VA)	<p>Temporary effects in this area would last over 4 years and would diminish the integrity of feeling, association, and setting of the GWMP through both construction staging and trail relocation. This would constitute a <b>temporary direct and indirect adverse effect</b> on this property.</p> <p>Under both Action Alternatives, impacts to the MVMH would be similar and additive to those described above affecting the GWMP. Temporary effects in this area would last over four years and would diminish the integrity of feeling, association, and setting of the GWMP through both construction staging and trail relocation. This would constitute a <b>temporary direct and indirect adverse effect</b> on this property.</p>
East and West Potomac Parks HD (DC)	<p>Construction activities for both Action Alternatives would require temporary use of, and access to, various areas of East Potomac Park. Both NPS Parking Lot B and NPS Parking Lot C would be closed during construction and used for construction staging and access. These parking lots are located within, but do not contribute to, the historic district. It is anticipated that one of these staging locations would be the site of a temporary concrete plant during construction.</p> <p>Temporary construction access and staging areas would also be required for areas between the DOD Facility and I-395 North lanes, both east and west of the CSXT tracks near the WMATA portal. Finally, access would be required in a section along the southern bank of the Washington Channel, in close proximity the U.S. Engineer’s Storehouse, which is a contributing building to the historic district. The Storehouse is located approximately 200 feet from the Long Bridge Corridor.</p> <p>Temporary effects in this area would last over 4 years and would diminish the integrity of feeling, association, and setting of the East Potomac Park through construction staging. This would constitute a <b>temporary indirect adverse effect</b> on this property.</p>

The information presented in **Table 4-5** below summarizes where temporary adverse effects resulting from increased noise are anticipated under both Action Alternatives (vibration caused from temporary constructed activities were not found to exceed FTA thresholds at any of the receptor locations). This list was derived from the noise and vibration analysis, which considers various factors (type of construction activity, distance of this activity from the historic property, and construction noise level) in determining if construction noise would exceed FTA threshold criteria. In some cases, an approximate range of construction noise levels has been included.

Construction noise w evaluated according to the District noise ordinance and Arlington County Noise Control Code, Chapter 15.<sup>17</sup> The District imposes a noise ordinance prohibiting construction sound levels above 80 dBA (except for pile driving) measured 25 feet from the outermost limits of the site between 7:00 AM and 7:00 PM unless a variance is granted. For this reason, it is very likely that construction noise within the District exceeding 80 dBA (also the FTA threshold) would be reduced to comply with the ordinance. Therefore, *the effects for properties located in the District have been listed below as potential*

<sup>17</sup> DC Municipal Regulations Chapters 20–27; Arlington County. Arlington County Code: Chapter 15, Noise Control Ordinance. Accessed from <https://countyboard.arlingtonva.us/wp-content/uploads/sites/22/2016/04/Chapter-15-NOISE-CONTROL.pdf>. Accessed May 1, 2018.



effects. It is very likely these effects could be fully avoided through appropriate construction management procedures.

The Arlington County noise ordinance allows construction activity to produce sound no greater than 70 dBA in manufacturing zones, 65 dBA in commercial zones, and 55 dBA in residential and special-purpose zones during nighttime hours. The Arlington County noise ordinance does not limit daytime construction noise (7:00 AM to 9:00 PM on weekdays and 10:00 AM to 9:00 PM on weekends and legal holidays). The GWMP and MVMH historic districts, including the MVT, are located in a special-purpose zone S-3A, which imposes a 55-dBA nighttime construction noise limit.

**Table 4-5 | Temporary Effect Assessment Resulting from Noise**

Historic Property <sup>18</sup>	Construction Noise Level (dBA)*	Noise Threshold (dBA)*	Exceeds Criteria	Potential for Effect
National Mall HD	61.1-68.9	80	No	None
GWMP HD	81.5-83.4	55	Yes	Potential to diminish the integrity of setting, feeling, and association of the HD
MVMH HD	81.5-83.4	55	Yes	Potential to diminish the integrity of setting, feeling, and association of the HD
Plan of the City of Washington HD	61.1-87.3	80	Yes	Based on use and general ambient noise, potential for adverse effect is minimal
East and West Potomac Parks HD	61.1-84.7	80	Yes	Potential to adversely affect contributing buildings within HD, especially the U.S. Engineer's Storehouse adjacent to the Washington Channel and Long Bridge Corridor
Thomas Jefferson Memorial	61.1	80	No	None
Central Heating Plant	72.3-73.2	80	No	None
USDA Cotton Annex	72.3-73.2	80	No	None
HUD Building	70.8-77.1	80	No	None
USDA South Building	63.9-68.6	80	No	None
Bureau of Engraving and Printing	63.9-68.6	80	No	None
Cuban Friendship Urn	61.9-68.9	80	No	None
Bureau of Engraving and Printing Annex	63.9-68.6	80	No	None
Federal Office Building 10A	70.8-77.1	80	No	None

<sup>18</sup> Because not every historic property within the Noise and Vibration Study Area was utilized as a receptor location, this table extrapolates data using the closest available receptor.

Historic Property <sup>18</sup>	Construction Noise Level (dBA)*	Noise Threshold (dBA)*	Exceeds Criteria	Potential for Effect
<b>Richmond, Fredericksburg and Potomac Railroad HD</b>	81.5-83.4	70	<b>Yes</b>	Based on use and general ambient noise, potential for adverse effect is minimal
<b>Washington Marina Building</b>	70.8-77.1	80	No	None
<b>L'Enfant Promenade</b>	67.7-81.8	80	<b>Yes</b>	Based on use and general ambient noise, potential for adverse effect is minimal
<b>Liberty Loan Federal Building</b>	63.9-68.6	80	No	None
<b>Astral Building</b>	72.3-73.2	80	No	None
<b>Comsat Building</b>	72.3-73.2	80	No	None
<b>Loew's L'Enfant Plaza Hotel</b>	72.3-73.2	80	No	None
<b>USPS Building</b>	72.3-73.2	80	No	None

\* dBA is a method of measuring units of sound (decibels) that have been weighted to account for relative loudness as perceived by the human ear.

## 5.0 Resolution of Effects

### 5.1. Avoidance and Minimization Measures

Throughout the Project, FRA and DDOT, in consultation with DC SHPO, VDHR, and the Consulting Parties, have identified measures to avoid or minimize potential adverse effects on historic properties, including those resulting from temporary construction activities. The following measures have been adopted to date to avoid or minimize anticipated effects:

- Action Alternative A (Preferred Alternative) retains the existing Long Bridge, which is a contributing element to the East and West Potomac Parks Historic District. Action Alternative A also retains the existing component railroad bridge that carries the Long Bridge above the GWMP, which is a contributing element to the GWMP Historic District. In comments following the 4<sup>th</sup> Consulting Parties meeting, DC SHPO, VHDR, and other Consulting Parties indicated a preference for Action Alternative A, which has fewer and less intense adverse effects on historic properties than Action Alternative B.
- Alternatives that considered the construction of a new railroad bridge and associated railroad infrastructure outside of the existing Long Bridge Corridor were dismissed from further consideration. This avoids potential effects generated by expanding the scope and constructing the project within a significantly larger geographic area.
- The new railroad bridge would be designed with a vertical clearance, visual appearance of the structural system, and alignment that closely references that of the existing Long Bridge as well as of the adjacent 14<sup>th</sup> Street-Metrorail bridge complex. This design approach avoids potential adverse visual effects that could have been caused by a less compatible type of new bridge structure, including a signature span bridge. In comments following the 4<sup>th</sup> Consulting Parties meeting, DC SHPO requested that the new bridge design be compatible with the existing Long Bridge. Further, DC SHPO indicated a preference for a through plate girder bridge type to create a consistent aesthetic for the railroad bridges and distinguish them from the Metrorail bridge.
- As recommended by NPS, any new component bridges or other structures introduced into NPS-administered properties would be designed and aesthetically treated to be compatible with the character of existing resources. This minimizes the potential adverse effect of introducing new features into the historic districts. For example, within the GWMP and MVMH historic districts, new bridge piers could be clad with stone to match the piers of the existing railroad bridge. To the extent possible, trees and other vegetation could be introduced to partially mitigate the loss of mature vegetation and to visually screen new bridge structures.
- The bicycle-pedestrian crossing option (Option 2) closely parallels the Long Bridge Corridor upstream of the existing Long Bridge. This minimizes potential adverse physical and visual effects with longer or more geographically dispersed crossing options. As the design of this crossing option advances, consultation will continue on the alignment and aesthetics of the bridge to avoid and minimize adverse effects. In comments following the 4<sup>th</sup> Consulting Parties meeting, DC SHPO, VDHR, and other Consulting Parties indicated a preference for Option 2. This

option has a smaller footprint and less intense adverse effects on historic properties than Option 1B<sup>19</sup>.

- Temporary effects resulting from noise and vibration could be avoided or minimized using a variety of construction management techniques. Visual effects can be minimized by providing appropriate screening between construction staging areas and cultural resources, limiting the size of construction staging areas, and locating them away from sensitive views and viewsheds. In the District, compliance with construction noise ordinances would fully avoid most temporary effects otherwise resulting from construction noise.
- For construction access and staging activities, potential effects on archaeological resources can be minimized or avoided by locating these activities away from areas of high archaeological potential or within sites that are paved or have been previously disturbed.

## 5.2. Effects Summary

After incorporating the avoidance and minimization measures, **Table 5-1** below provides a summary of determinations for historic properties where adverse effects were unavoidable.

**Table 5-1** | Summary of Adverse Effects Determination

Historic Property	Action Alternative A	Action Alternative B	Cumulative Effects	Temporary Effects
National Mall HD (DC)	No adverse effect	No adverse effect	No adverse effect	Indirect adverse effect
GWMP HD (DC/VA)	Direct adverse effect	Direct and indirect adverse effect	Direct adverse effect	Direct and indirect adverse effect
MVMH HD (DC/VA)	Direct adverse effect	Direct and indirect adverse effect	Direct adverse effect	Direct and indirect adverse effect
East and West Potomac Parks HD (DC)	Direct and indirect adverse effect	Direct and indirect adverse effect	Direct adverse and indirect effect	Direct and indirect adverse effect

## 5.3. Mitigation Measures and Next Steps

In comments following the 4<sup>th</sup> Consulting Parties meeting, DC SHPO, VDHR, and other Consulting Parties provided suggestions for potential mitigation strategies. These include the following categories:

- **Interpretation:** Development of physical or digital interpretive materials to document the history of the Long Bridge Corridor and its adjacent historic properties.
- **Vegetation Restoration:** Restoration of mature vegetation removed during project implementation, in accordance with NRHP and cultural landscape documentation where available, in addition to the removal of invasive vegetation.
- **Cultural Landscape Documentation:** Development of cultural landscape inventories or reports for affected landscapes adjacent to the railroad corridor.

<sup>19</sup> FRA and DDOT assessed the effects of Option 1B, and presented those findings to SHPOs and Consulting Parties in the Draft Assessment of Effects Report and at the 4<sup>th</sup> Consulting Parties Meeting.

- **Physical Rehabilitation:** Rehabilitation and repair of railroad infrastructure in the District or contributing resources within East and West Potomac Parks Historic District.
- **Archaeological Investigation:** Continuation of phased archaeological investigation, including underwater archaeology.
- **Viewshed Protection:** Creation and implementation of a viewshed protection plan for GWMP and MVMH in the vicinity of the railroad corridor.

The Section 106 consultation process is ongoing. FRA and DDOT will continue to consult with DC SHPO, VDHR, and the Consulting Parties to identify ways to minimize and mitigate adverse effects on these historic properties. FRA will also notify the Advisory Council of Historic Preservation notice of the adverse effect determination for the Project and provide the Council an opportunity to comment. A Section 106 agreement document (Programmatic Agreement or Memorandum of Agreement) will identify minimization and mitigation measures and describe any consultation that would continue through the design and construction processes.

# Appendix A:

## Area of Potential Effects and Historic Properties Technical Report



# Long Bridge Project

## Environmental Impact Statement

### Area of Potential Effects and Historic Properties Technical Report

February 23, 2018

# Long Bridge Project

## *Area of Potential Effects and Historic Properties*

### *Technical Report*

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## 1.0 Introduction

The Federal Railroad Administration (FRA) and District Department of Transportation (DDOT) are concurrently preparing an Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA), and an assessment of effects on historic properties per Section 106 of the National Historic Preservation Act (NHPA) for the Long Bridge Project (the Project). The Long Bridge Project consists of potential improvements to the Long Bridge and related railroad infrastructure located between the Rosslyn (RO) Interlocking near Long Bridge Park in Arlington, Virginia, and the L'Enfant (LE) Interlocking near 10<sup>th</sup> Street SW in the District (the Long Bridge Corridor). The Long Bridge Corridor is shown in Figure 1-1.

The purpose of the Proposed Action is to provide additional long-term railroad capacity and to improve the reliability of railroad service through the Long Bridge Corridor. Currently, there is insufficient capacity, resiliency, and redundancy to accommodate the projected demand in future railroad services. The Proposed Action is needed to address these issues and to ensure the Long Bridge Corridor continues to serve as a critical link connecting the local, regional, and national transportation network.

Although not part of the Proposed Action's Purpose and Need, the Project will explore the potential opportunity to accommodate connections that follow the trajectory of the Long Bridge Corridor to the pedestrian and bicycle network. The feasibility of this opportunity will be assessed as the Project progresses and will consider whether a crossing can be designed to be consistent with railroad operator plans and pursuant to railroad safety practices. Future efforts to accommodate connections to the pedestrian and bicycle network may be advanced as part of the Project, or as part of a separate project(s) sponsored by independent entities.

This report outlines the methodology for delineating and refining the Area of Potential Effects (APE) in accordance with Section 106 of the NHPA (54 U.S.C. § 300101 *et seq.*)<sup>1</sup> and its implementing regulations (36 CFR Part 800) for the Project.<sup>2</sup>

This report includes the following:

1. A description of the methodology used to delineate the APE;
2. Results of the field survey completed to inform APE development; and
3. An identification of historic properties as well as properties at or greater than 45 years of age that may be affected by the Long Bridge Project.

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<sup>1</sup> 54 USC 300101, National Park Service and Related Programs, National Preservation Programs, Division A-Historic Preservation  
[http://uscode.house.gov/view.xhtml?req=\(title:54%20section:300101%20edition:prelim\)](http://uscode.house.gov/view.xhtml?req=(title:54%20section:300101%20edition:prelim))

<sup>2</sup> 36 CFR Part 800, Protection of Historic Properties, <http://www.achp.gov/regs-rev04.pdf>.

**Figure 1-1** | Long Bridge Project Area Limits



## 2.0 APE Methodology

### 2.1. Section 106 and Virginia Department of Historic Resources (VDHR) Guidance

The Section 106 regulations define an APE as, "...the geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking" (36 CFR 800.16[d])<sup>1</sup>. The APE is defined to allow for the evaluation of potential effects to historic properties resulting from an undertaking. According to the steps prescribed by the Section 106 regulations, the APE must be defined before the identification of historic properties and evaluation of potential effects occurs. Types of effects on historic properties may include:

- Direct (such as physical destruction, damage, relocation, or alteration of a property);
- Indirect (such as introduction of visual, atmospheric, or audible elements that diminish the integrity of a property's significant historic features);
- Temporary;
- Future; and
- Cumulative.

Adverse effects occur when an undertaking may directly or indirectly alter characteristics of a historic property that qualify it for inclusion in the National Register of Historic Places. Examples of adverse effects are stated in 36 CFR Part 800.5(a)(2). Adverse effects have the potential to occur both during the construction and operational periods of a project.

For each undertaking, the Section 106 regulations (36 CFR Part 800) require the lead Federal agency to determine an APE boundary that considers multiple types of effects on historic properties, rather than multiple APEs that address various effects. However, non-contiguous APEs may be developed to include multiple alternative project areas or multiple areas where possible effects may be reasonably anticipated. The regulations also require the lead Federal agency seek information from consulting parties and others likely to have knowledge of, or concerns with, historic properties in the area, to identify issues relating to the undertaking's potential effects on historic properties.

The VDHR provides guidance on APE development, requiring the APE to include all locations where the project will cause ground disturbance, all locations from which the project may be visible or audible, and all locations where the project may result in changes to land use, public access, traffic patterns, etc.<sup>3</sup> The DC Historic Preservation Office (DCSHPO) does not offer comparable guidance.

### 2.2. Development of the APE

The APE for the Long Bridge Project was delineated to identify and document the areas from which the Project could result in ground disturbance or could be reasonably visible or audible. Assumptions for the area within which the alternatives could be located were identified based on the results of Level 1 Concept Screening presented to the public and agencies in May 2017. Level 1 Concept Screening

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<sup>3</sup> VDHR, *Defining Your Area of Potential Effects*, [http://www.dhr.virginia.gov/pdf\\_files/Defining\\_Your\\_APE.pdf](http://www.dhr.virginia.gov/pdf_files/Defining_Your_APE.pdf).

assessed preliminary concepts by their ability to meet the Project's Purpose and Need based on railroad capacity, transportation network connectivity, and railroad resiliency and redundancy. The 6 concepts found to meet Purpose and Need, as a result of Level 1 Screening were:

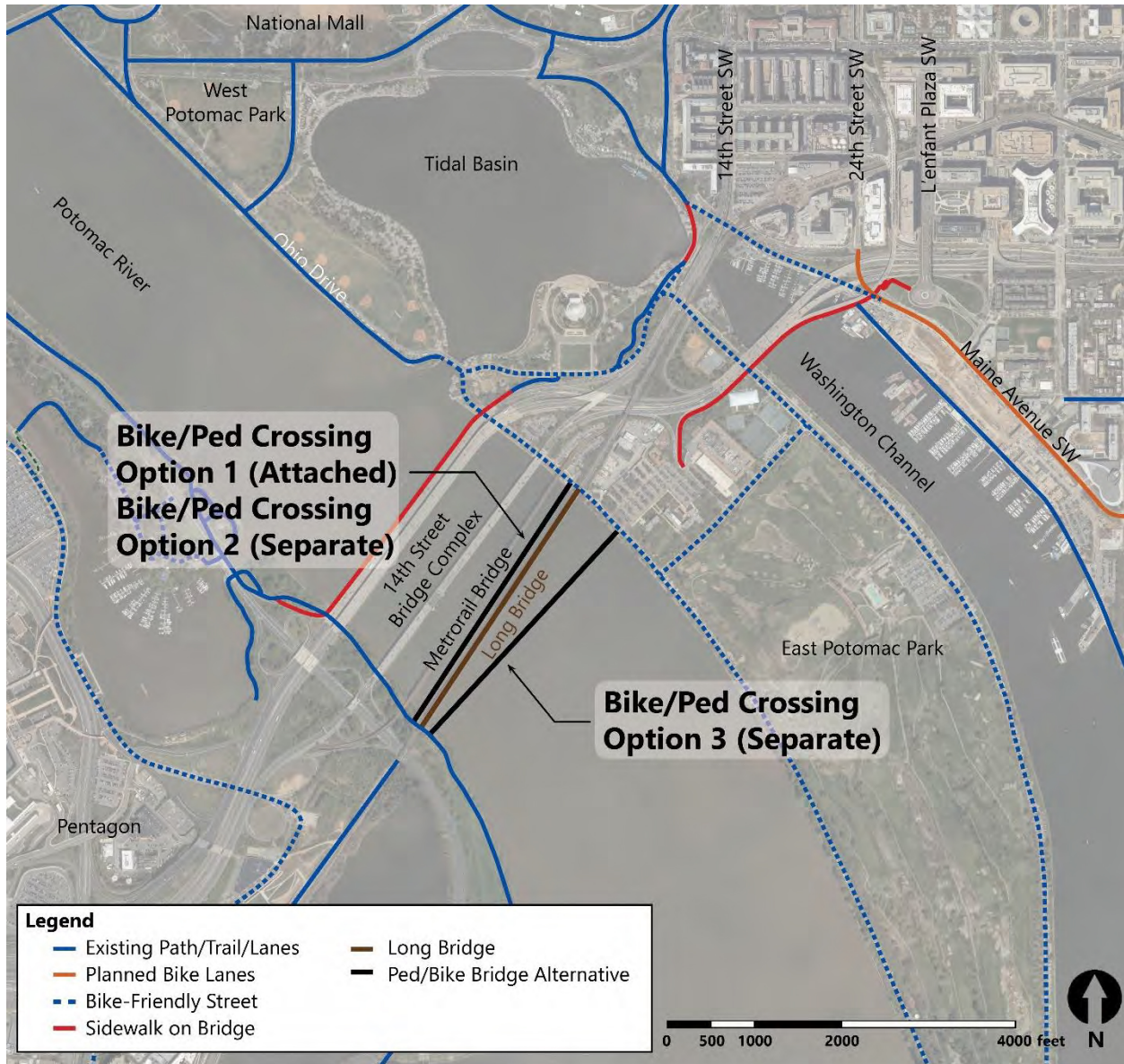
- 3-track crossing
- 3-track crossing with bike-pedestrian crossing
- 4-track crossing
- 4-track crossing with bike-pedestrian crossing
- 5-track crossing
- 5-track crossing with bike-pedestrian crossing

These concepts all occur within the existing Long Bridge Corridor. Only above ground crossings (bridges) were found to meet Purpose and Need because a freight tunnel could not feasibly connect to existing freight infrastructure, and a passenger-only tunnel would not improve redundancy. The concepts vary in terms of the number of tracks and whether or not a bike-pedestrian crossing is included. Because of the need for any new bridge to tie back into the existing railroad corridor (network connectivity), all concepts would be constructed within a relatively tight band either within the current Long Bridge alignment, or upstream or downstream of the current alignment. The opportunity is currently being explored to provide a bike-pedestrian connection on a new railroad bridge, or on a separated structure upstream or downstream of a railroad bridge. Upstream bike-pedestrian alignments are constrained by the Metrorail bridge, while downstream alignments would need to avoid a Department of Defense Facility in East Potomac Park, and would therefore land close to the NPS headquarters building. Therefore, the outer limits of the potential Limits of Disturbance are set by the bike-pedestrian crossing alignment options, as depicted in

Figure 2-1.



**Figure 2-1 | Potential Bike-Pedestrian Crossing Alignment Options**



The APE and Limits of Disturbance boundaries were mapped two dimensionally, although it was assumed that the boundaries encompass both above-ground and below-ground resources, including potential underwater and archaeological resources.

The Limits of Disturbance boundary (

Figure 2-2, black dashed line) represents the area within which the Project has the potential to directly alter an existing feature or result in ground-disturbing activities.<sup>4</sup> Along the span of the existing Long Bridge and on NPS land on either side of the Potomac River, the Limits of Disturbance includes potential realignments of the existing railroad bridge in addition to potential bike and pedestrian crossings. These potential bridge alignments extend from the existing Metrorail Bridge to a distance of approximately 500 feet to the southeast. Additionally, the Limits of Disturbance extend outward from these points on the east and west banks of the Potomac, at a distance of approximately 250-300 feet, to incorporate associated bike-pedestrian access ramps on each side. Along the remainder of the Long Bridge corridor, the Limits of Disturbance includes a buffer of approximately 50' on either side of the existing corridor centerline between RO and LE Interlockings.

The APE (

Figure 2-2, red dashed line) represents areas from which atmospheric or environmental changes are possible. The methodologies used to develop the APE included:

- Digital mapping and aerial photography to guide and supplement field data;
- The impact of topographic and other vertical changes (such as buildings and viewing platforms) and their effect on potential views and viewsheds, including sightlines from various locations in and surrounding the National Mall and wider viewsheds in areas along the banks of the Potomac River; and
- Windshield-level field surveys around the Project Area to determine the visibility of the Project, based on height of the existing Long Bridge steel trestle and component bridge, abutment, and track structures.<sup>5</sup>

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<sup>4</sup> The LOD is defined as the geographic area(s) within which ground disturbance is anticipated to occur resulting from a specific project. It is developed to better understand the potential effects to archaeological resources within the APE. For the Long Bridge Project, once FRA the LOD may be refined, in consultation with SHPOs, as project engineering progresses by the size and location of bridge piers, abutments, etc. and the associated limits of ground disturbance.

<sup>5</sup> Visibility of the existing Long Bridge Project area was generally used as a determinant of the delineation of the APE boundaries over potential effects resulting from sound and vibration. Sound diminishes as a function of distance at a higher rate than light. An object further away could still be seen but may not be heard; or could be heard to a small degree that would not cause adverse effects. Therefore, changes to views and viewsheds resulting from Project implementation will have the greatest potential to affect historic properties. Additionally, permanent changes in sound regularity or intensity are not anticipated; however, there may be temporary effects during construction.

The process to evaluate the affected environment for noise and vibration will include identifying noise and vibration-sensitive receptors, understanding the predominant sources of noise and vibration, and characterizing existing noise and vibration conditions through measurements and modeling. This process will be conducted concurrently with the EIS studies, and the findings will be incorporated into the delineation of the final APE and in the assessment of effects on historic properties.

Therefore, although other indirect effects (such as aural changes) have been considered, there is a lesser potential for these effects to influence the outer boundaries of the APE. At the time in the Section 106 process when adverse effects are identified, it will be necessary to use available engineering data to quantify and evaluate the potential adverse effects associated with temporary and permanent impacts resulting from the project. Temporary impacts may include construction noise and vibrations; permanent impacts may include increased railroad traffic noise and vibration.

Field survey photographs led to the identification of viewshed locations outside of the contiguous APE boundary. The field survey and photographs were used to determine visibility of the Long Bridge from specific viewshed vantage points. The selection of the viewshed sites was informed by several factors. Viewshed sites are areas from which the project area was clearly visible from a specific exterior vantage point or publicly accessible plaza or viewing platform. However, the view was sufficiently limited in these locations to not warrant expanding the APE to encompass the entirety of each site (for example, the Long Bridge was visible from Arlington House and the Tomb of the Unknown Soldier but not the entirety of Arlington Cemetery). Interiors of buildings were excluded from consideration. All viewshed sites are also historic properties, so there may be potential for impacts to these properties from the implementation of the Long Bridge Project. The viewsheds identified (

Figure 2-2) include:

- The Kennedy Center
- The Washington Monument
- The Lincoln Memorial
- St. Elizabeths West Campus
- Arlington Cemetery, Tomb of the Unknown Soldier
- Arlington House<sup>6</sup>
- Netherland Carillon (within Arlington Ridge Park)
- The Old Post Office Tower
- The Pentagon<sup>7</sup>

Future refinement of the APE will include:

- Reconsidering and adjusting the Limits of Disturbance boundary as EIS alternatives are further refined;<sup>8</sup>
- Incorporating future noise and vibration analysis findings; and
- Accounting for any additional feedback from DCSHPO and VDHR.

### **2.3. Long Bridge Section 106 Consultation**

The first Section 106 consulting parties meeting for the Long Bridge Project was held on April 25, 2017 at the DDOT offices. The attendees provided preliminary guidance for the development of an APE in the context of the preliminary project concepts presented. The comments received indicated a preference for a single, comprehensive APE inclusive of all possible project alternatives (including options for potential bicycle and pedestrian access that follows the trajectory of the Long Bridge Corridor); that considers multiple types of effects (direct and indirect); and is sufficiently sized to accommodate the

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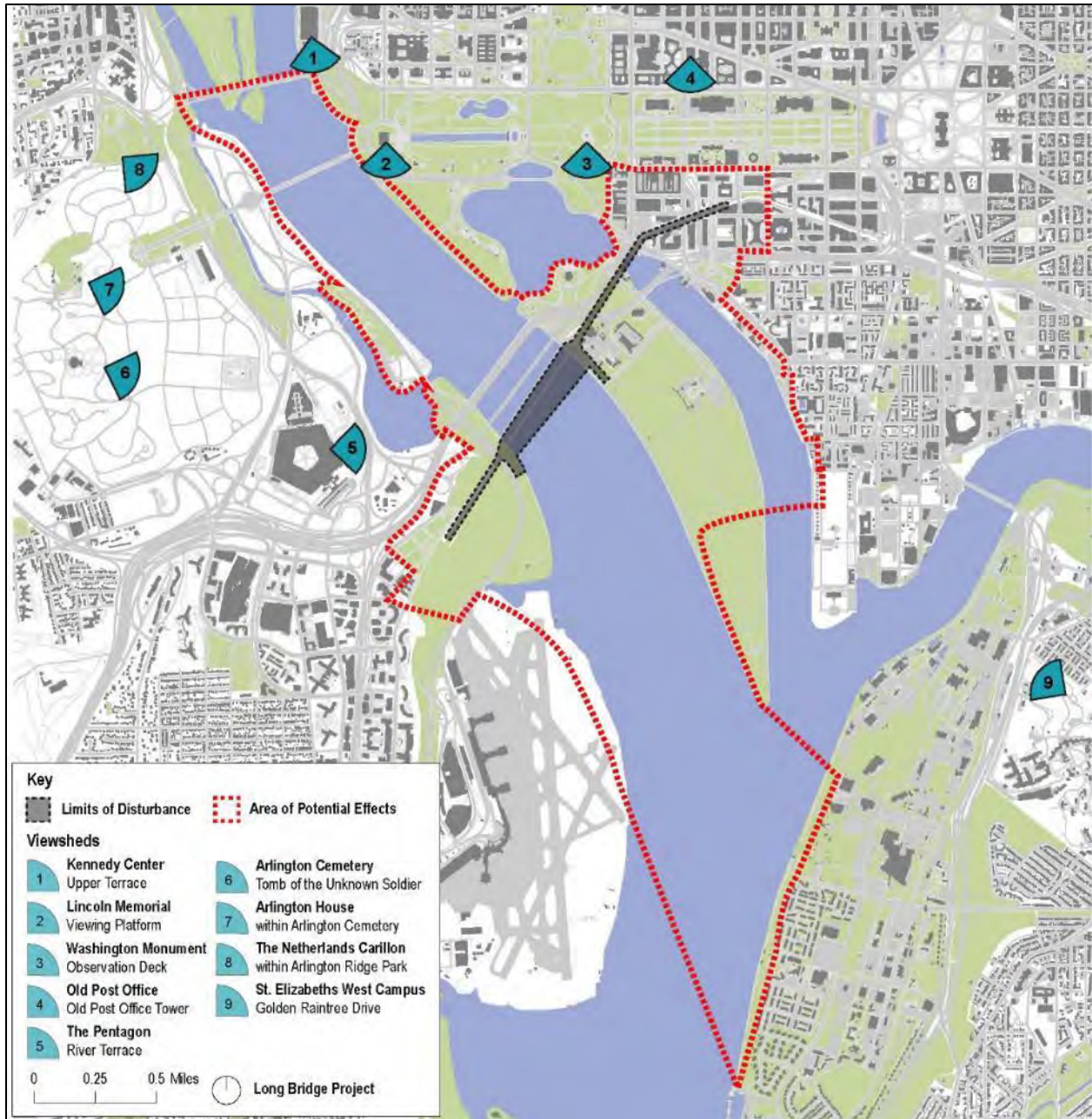
<sup>6</sup> Arlington House is located within the boundaries of Arlington National Cemetery. It is not administered by Arlington Cemetery but rather separately administered by the National Park Service.

<sup>7</sup> Site visits and field surveys photographs were taken from several additional viewshed points from which Long Bridge was either not visible. These sites include the Air Force Memorial, the Marine Corps War Memorial, at ground level at Arlington Ridge Park, the Washington National Airport historic terminal, and the Pentagon Metro Station.

expansive and uninterrupted views along the Potomac River to the Long Bridge Corridor. Following the meeting, FRA and DDOT provided the Consulting Parties with a comment period ending May 9, 2017.

The second Section 106 consulting parties meeting was held on November 15, 2017 at the DCSHPO office. At this meeting, FRA and DDOT presented Draft APE and Limits of Disturbance boundaries in addition to the preliminary identification of historic properties. The attendees provided comments on the historic property identification, additional viewshed sites from which the Project area is visible, potential archaeological resources, and the graphic representation of the APE. FRA and DDOT incorporated those comments into the findings of this report. Following the meeting, FRA and DDOT provided the Consulting Parties with a comment period ending December 6, 2017.

**Figure 2-2 |** Map of APE, Limits of Disturbance, and Viewshed Sites



## 2.4. Field Survey Documentation

To establish preliminary boundaries for the APE, Esri ArcGIS and Google Maps were used to identify reasonable outer extents for a potential APE boundary. These reasonable outer extents included areas

of higher elevation (from which views would be more likely); major roadways (particularly elevated highways that would have a greater potential to block views); and other urban conditions like building density, street patterns, tree coverage, and potential viewsheds.

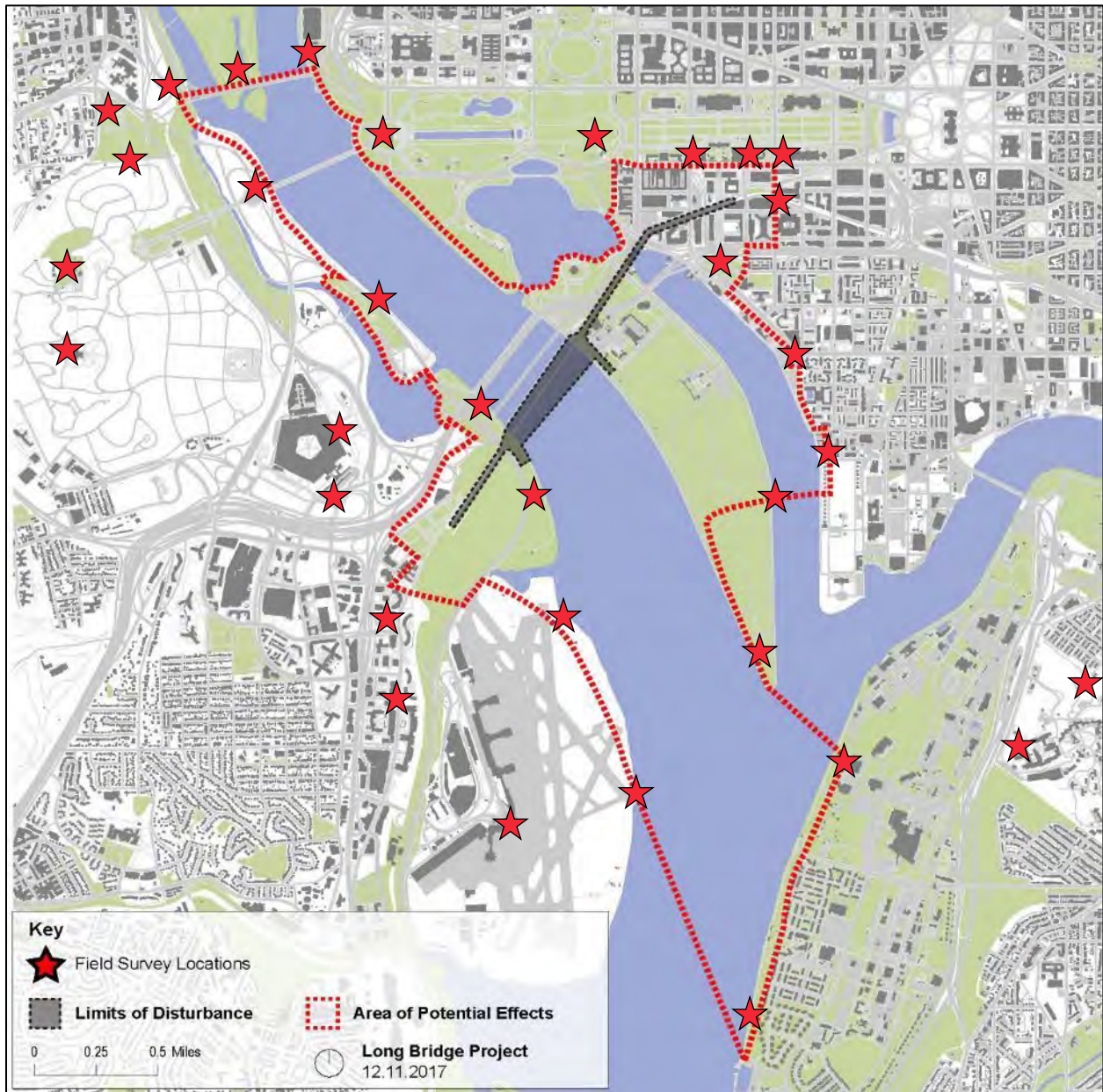
Impacts of topographic and other vertical changes, effects on potential views and viewsheds, and sightlines were tested by visiting specific viewing locations and viewing platforms. The existence of views toward the Long Bridge and the Long Bridge Corridor were recorded in field notes and digital photography. Exteriors of buildings and sites (such as the Kennedy Center upper and lower terraces) were also visited to confirm the visibility of the Long Bridge from these points.

The windshield survey was conducted to establish the outer boundaries of the Draft APE. Ten separate field surveys (on June 30, July 3, September 14, September 15, September 19, September 22, November 6, November 28, December 1, and December 5, 2017) were conducted to test and document the visibility of the Long Bridge Project from multiple and various geographic areas. The locations of these field survey points are documented in Figure 2-3.

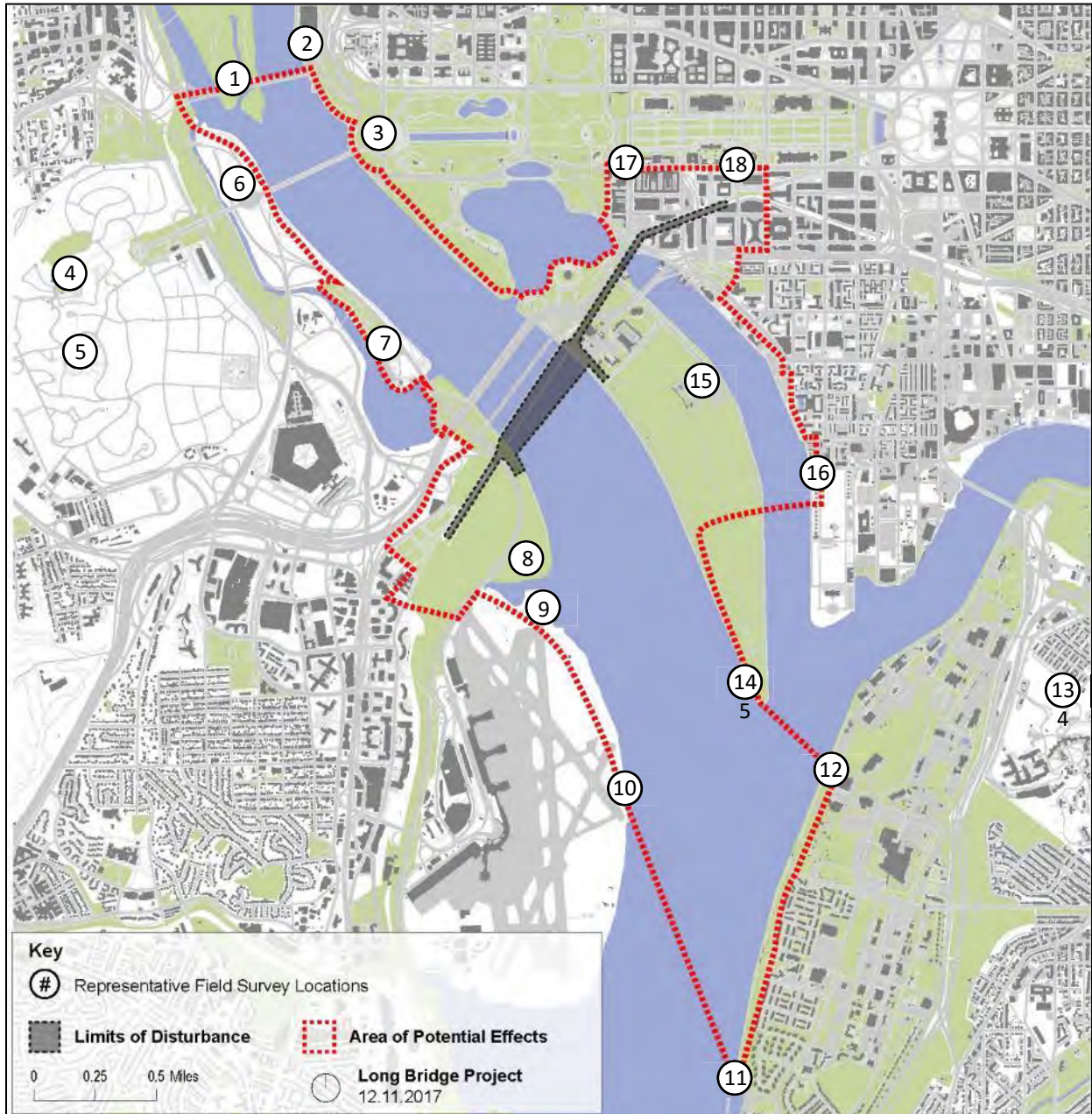
The field survey locations indicated in Figure 2-3 are points chosen as representative areas within the APE that illustrate visibility of the Long Bridge Corridor. These points are distributed geographically across the APE. These areas are shown in further detail with accompanying supporting maps and photographs to depict views of the Long Bridge in

Figure 2-4 through Figure 2-31. Site visits and field surveys photographs were taken from several additional viewshed points from which the Long Bridge was not visible. These sites include the Air Force Memorial, the Marine Corps War Memorial, at ground level at Arlington Ridge Park, the Washington National Airport historic terminal, and the Pentagon Metro Station.

**Figure 2-3 |** Map of Field Survey Locations

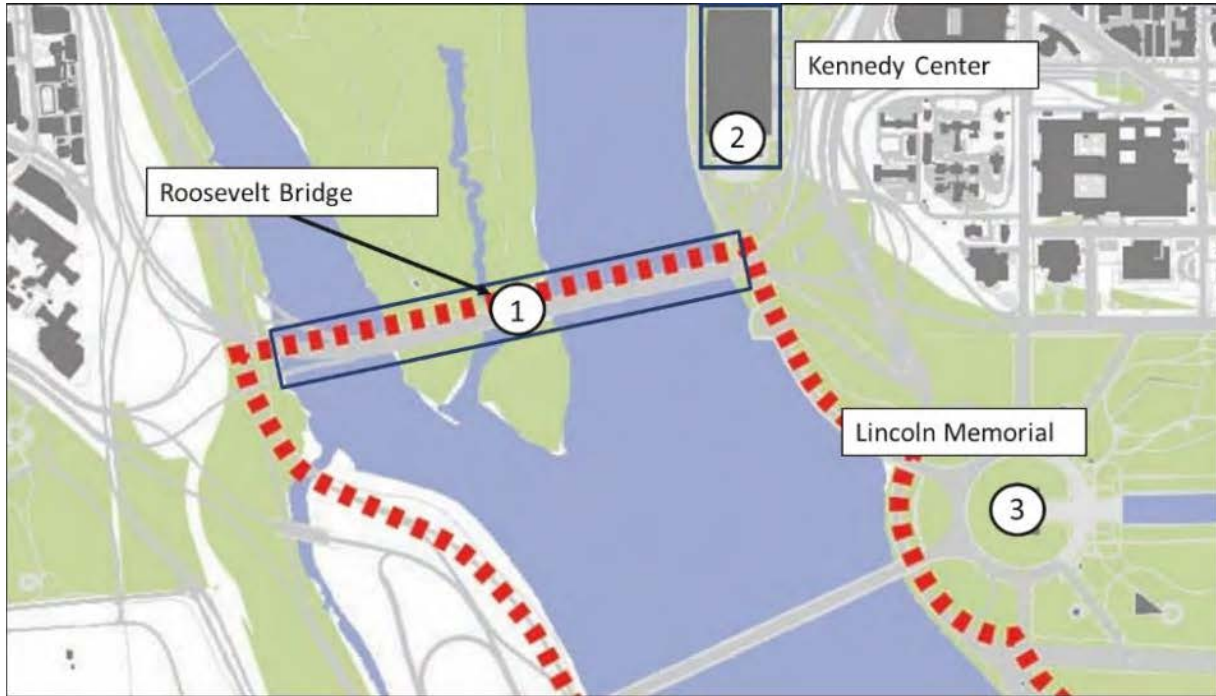


**Figure 2-4** | Representative Areas within the APE That Illustrate the Visibility of the Long Bridge Corridor

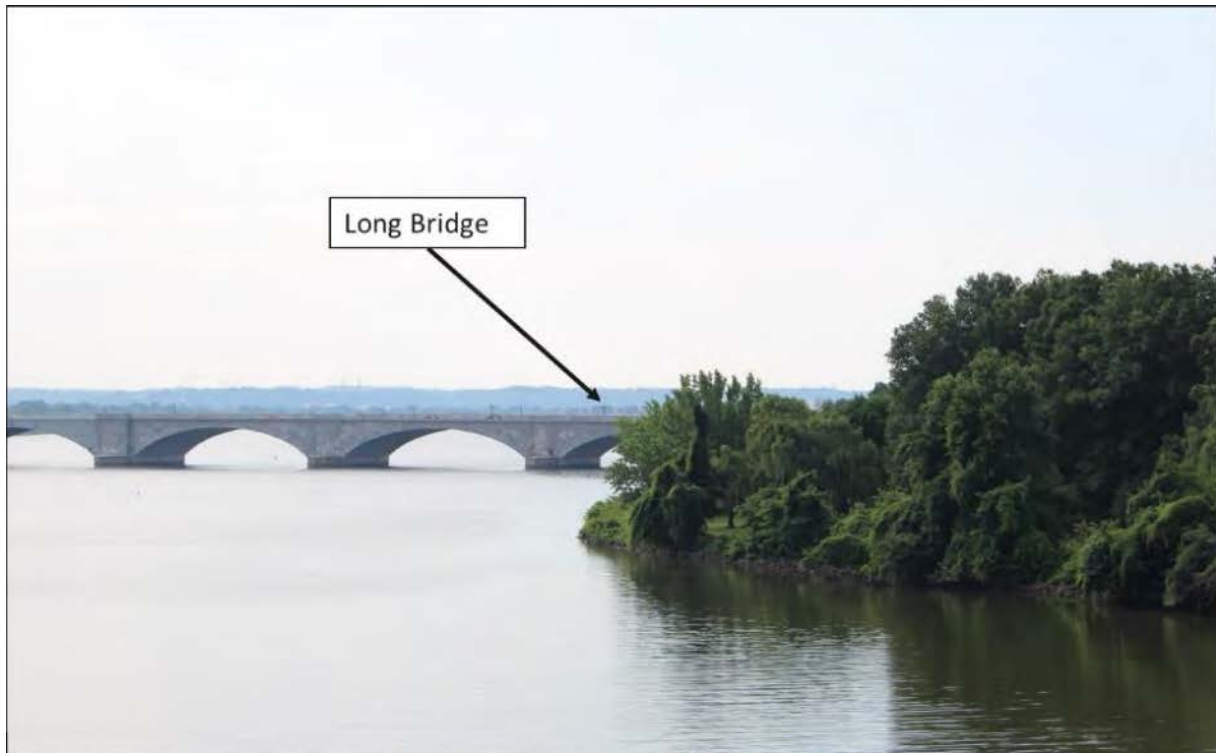




**Figure 2-5** | Map detail of photograph locations 1, 2, and 3



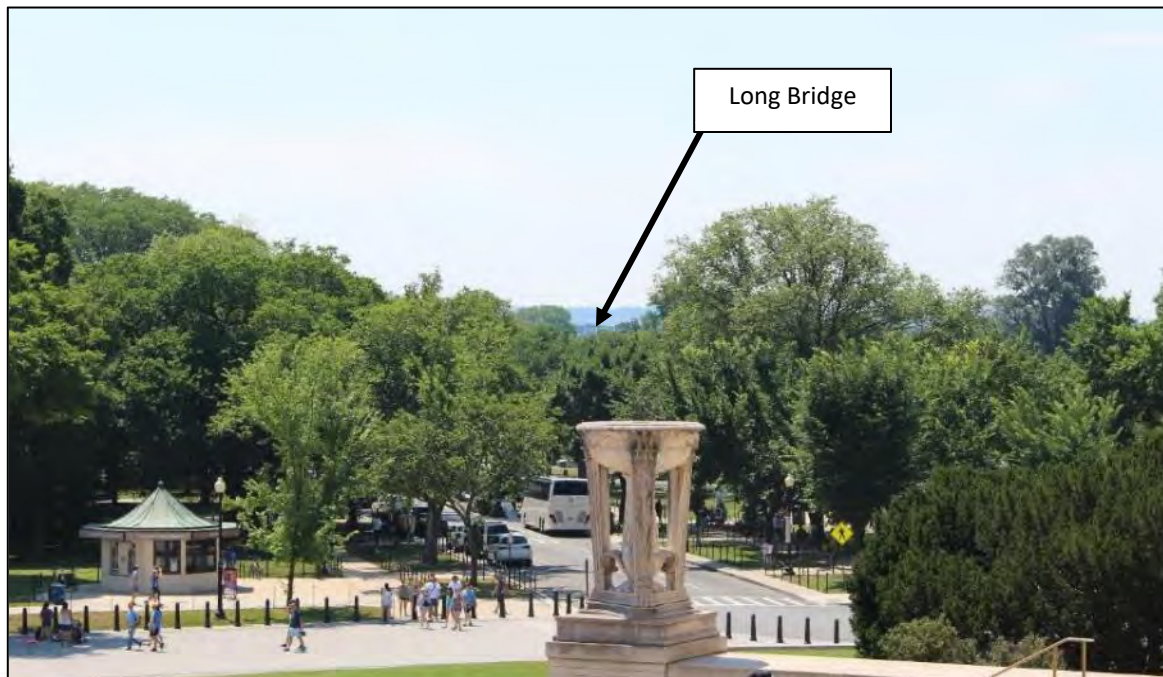
**Figure 2-6** | Photograph location 1. Long Bridge from the west end of the Roosevelt Bridge, facing southeast



**Figure 2-7** | Photograph location 2. Long Bridge from the west section of the Kennedy Center upper terrace, facing southeast



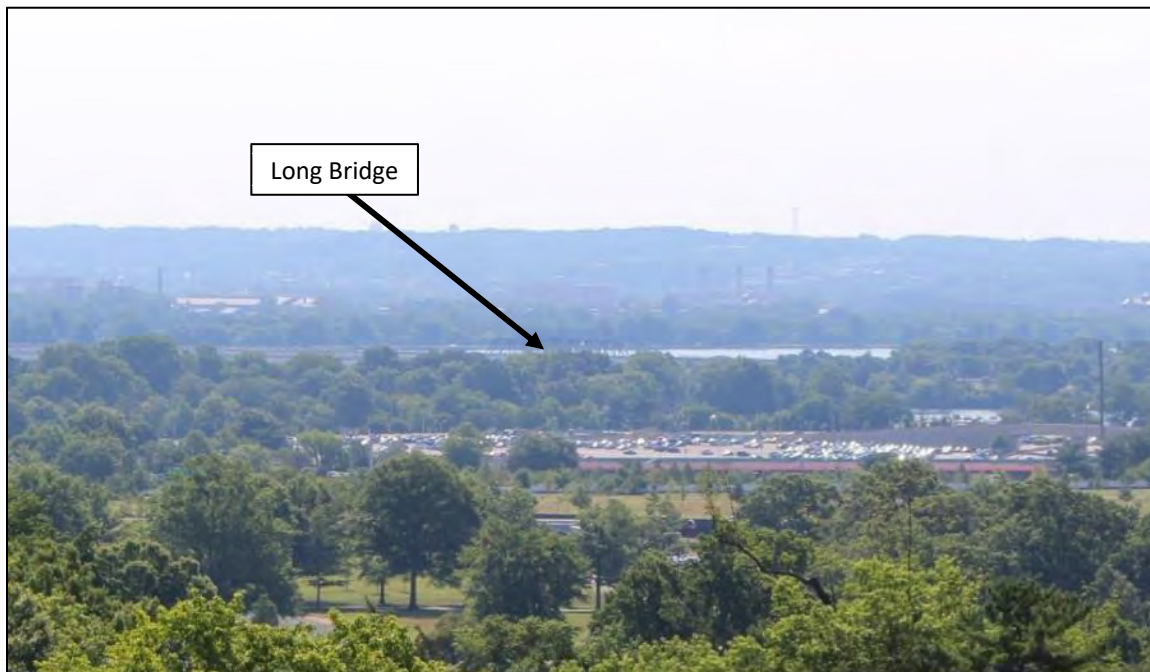
**Figure 2-8** | Photograph location 3. Long Bridge from the Lincoln Memorial public viewing platform, facing southeast



**Figure 2-9** | Map detail of photograph locations 4 and 5 at Arlington National Cemetery



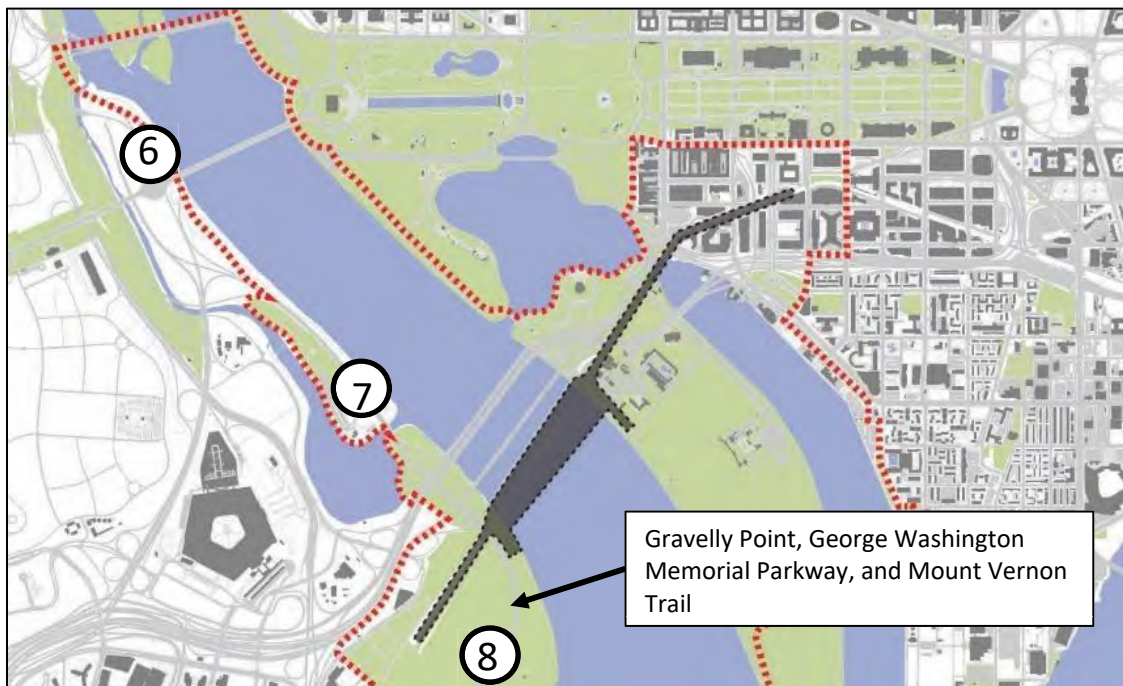
**Figure 2-10** | Photograph location 4. Long Bridge from Arlington House, facing southeast



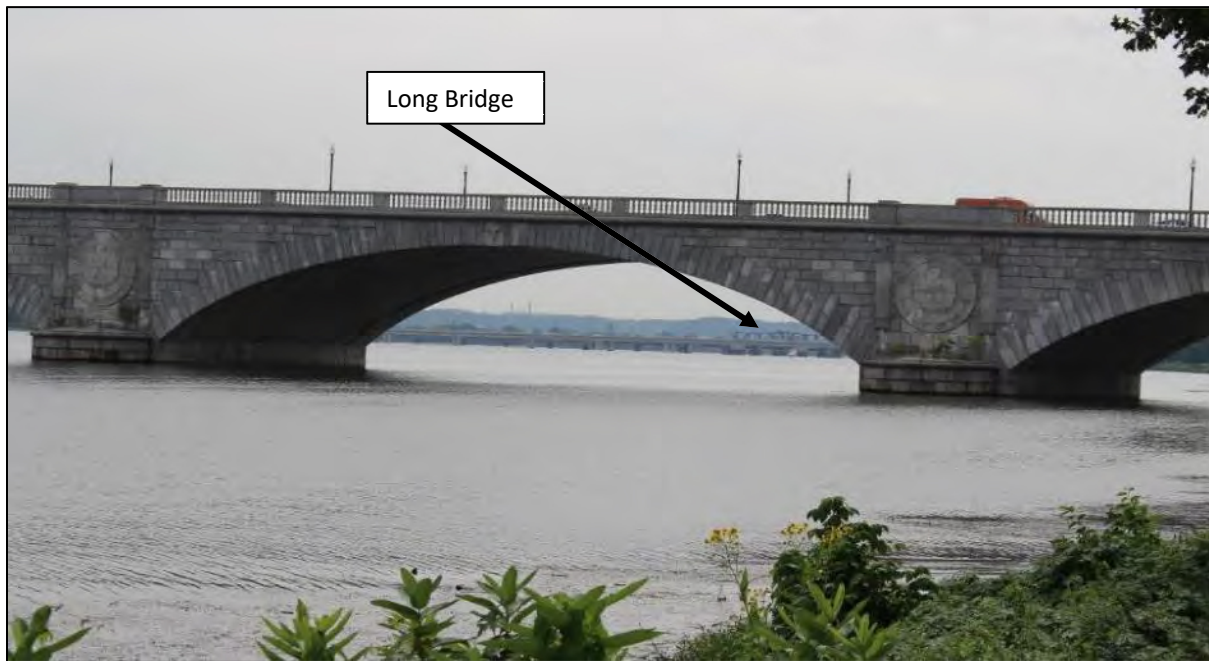
**Figure 2-11** | Photograph location 5. Long Bridge from the Tomb of the Unknown Soldier, facing west



**Figure 2-12** | Map detail of photograph locations 6, 7, and 8 at George Washington Memorial Parkway, Gravelly Point, and Mount Vernon Trail.



**Figure 2-13** | Photograph location 6. Long Bridge from Mount Vernon Trail to the north of Arlington Memorial Bridge, facing southeast



**Figure 2-14** | Photograph location 7. Long Bridge from the Mount Vernon Trail to the north of I-395, facing southeast



**Figure 2-15** | Photograph location 8. Long Bridge from Gravelly Point, facing north



**Figure 2-16** | Map detail of photograph locations 9 and 10 at Reagan National Airport



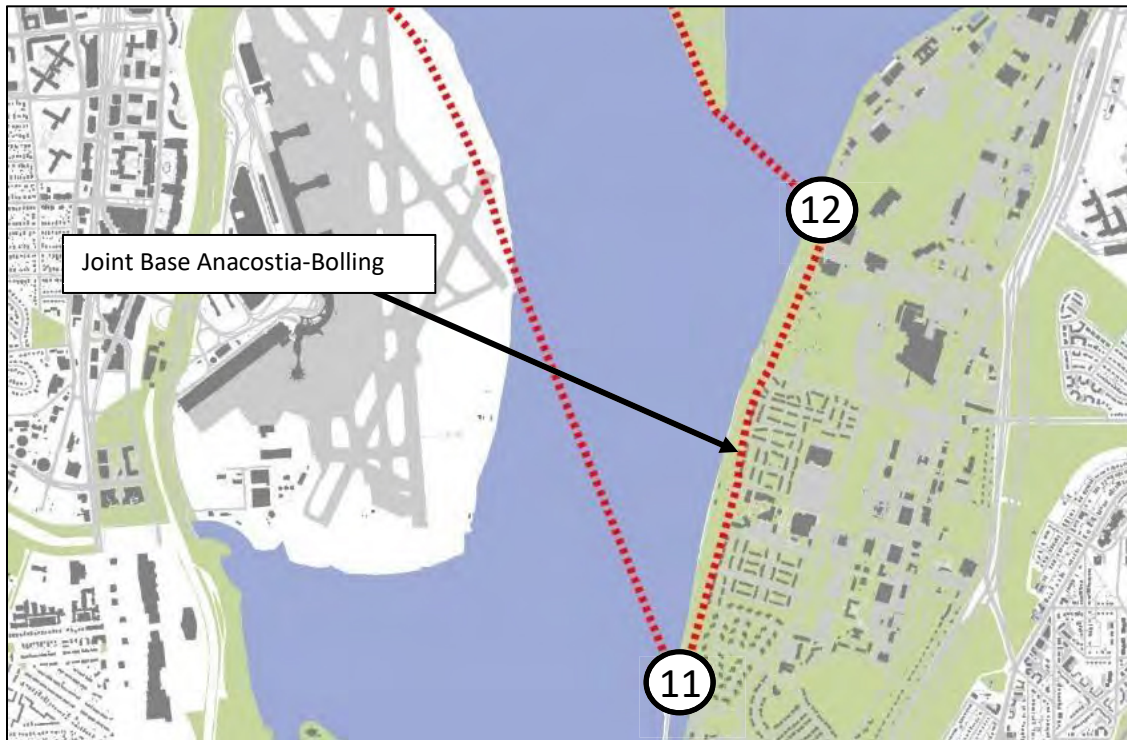
**Figure 2-17** | Photograph location 9. Long Bridge from north boundary of Reagan Airport at the Potomac River, facing north



**Figure 2-18** | Photograph location 10. Long Bridge from the southern edge of the airport, facing north/northwest



**Figure 2-19** | Map detail of photograph locations 11 and 12, Joint Base Anacostia-Bolling



**Figure 2-20** | Photograph location 11. Long Bridge from Arnold Avenue, SW, facing northwest

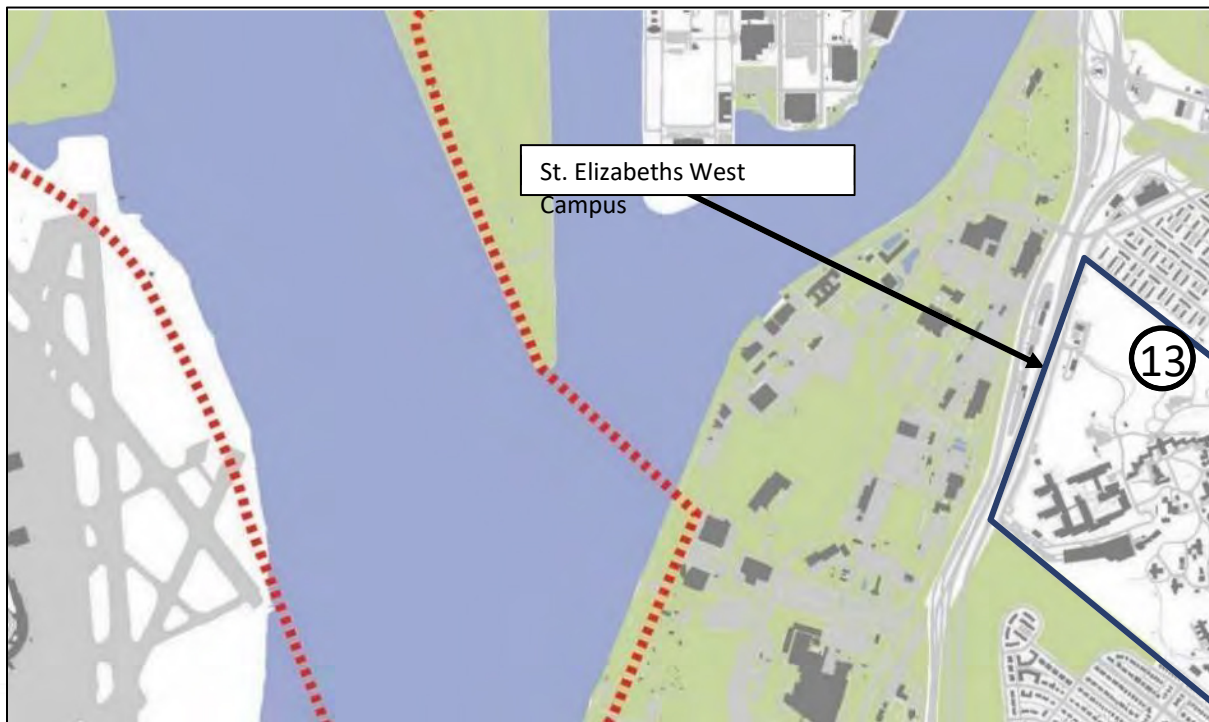




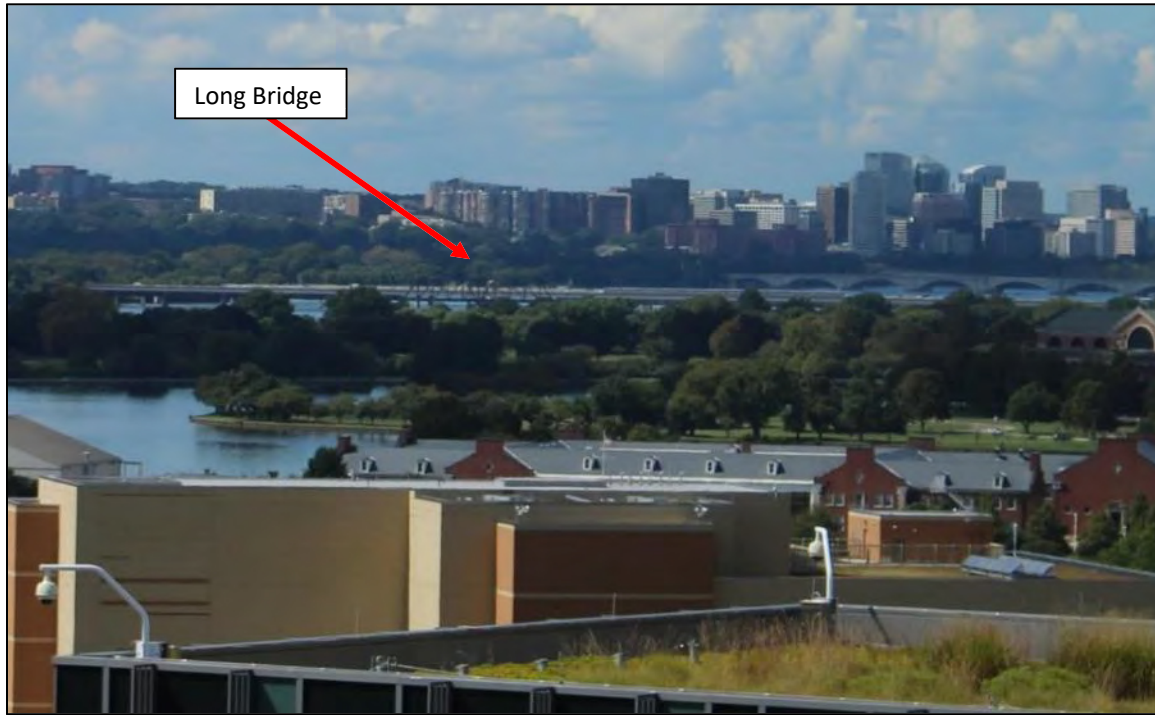
**Figure 2-21** | Photograph location 12. Long Bridge to the west of Boundary Drive at the Anacostia River, facing northwest



**Figure 2-22** | Map detail of photograph location 14, St. Elizabeths West Campus



**Figure 2-23** | Photograph 2. Long Bridge from Saint Elizabeths West Campus, facing northwest



**Figure 2-24** | Map detail of photograph locations 14, 15, and 16, East Potomac Park, Hains Point, and Fort McNair



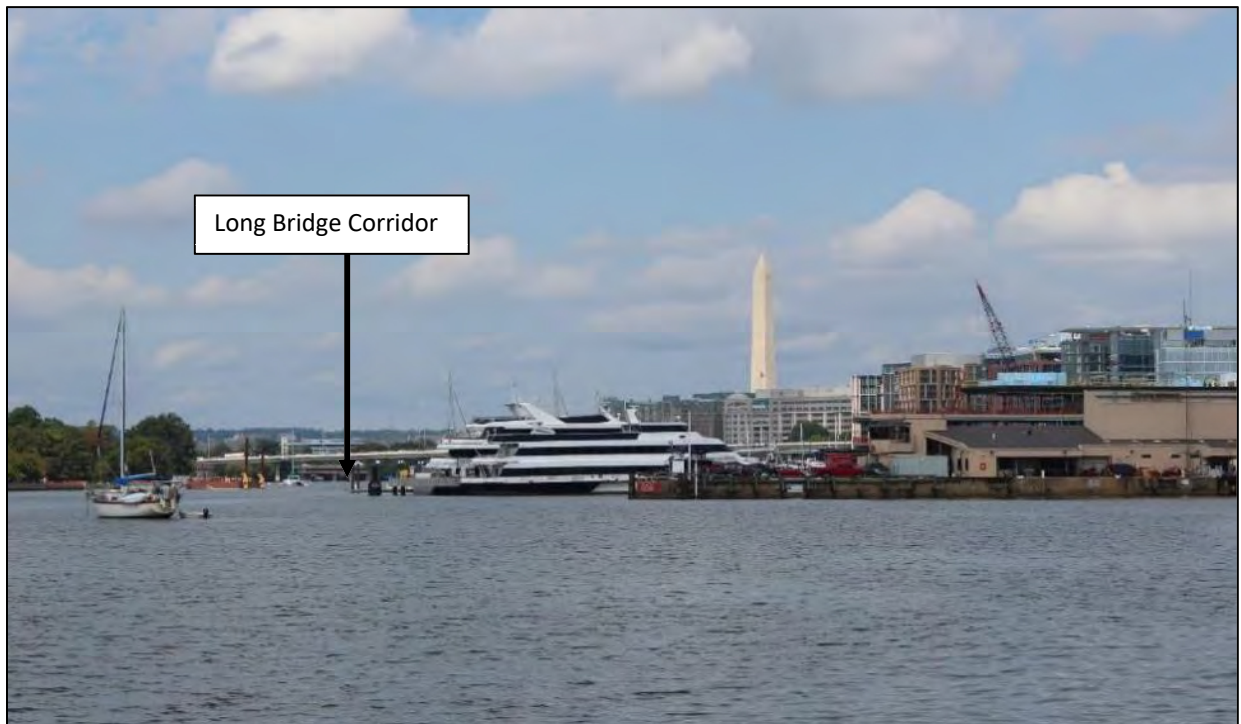
**Figure 2-25** | Photograph location 14. Long Bridge from Hains Point, facing northwest



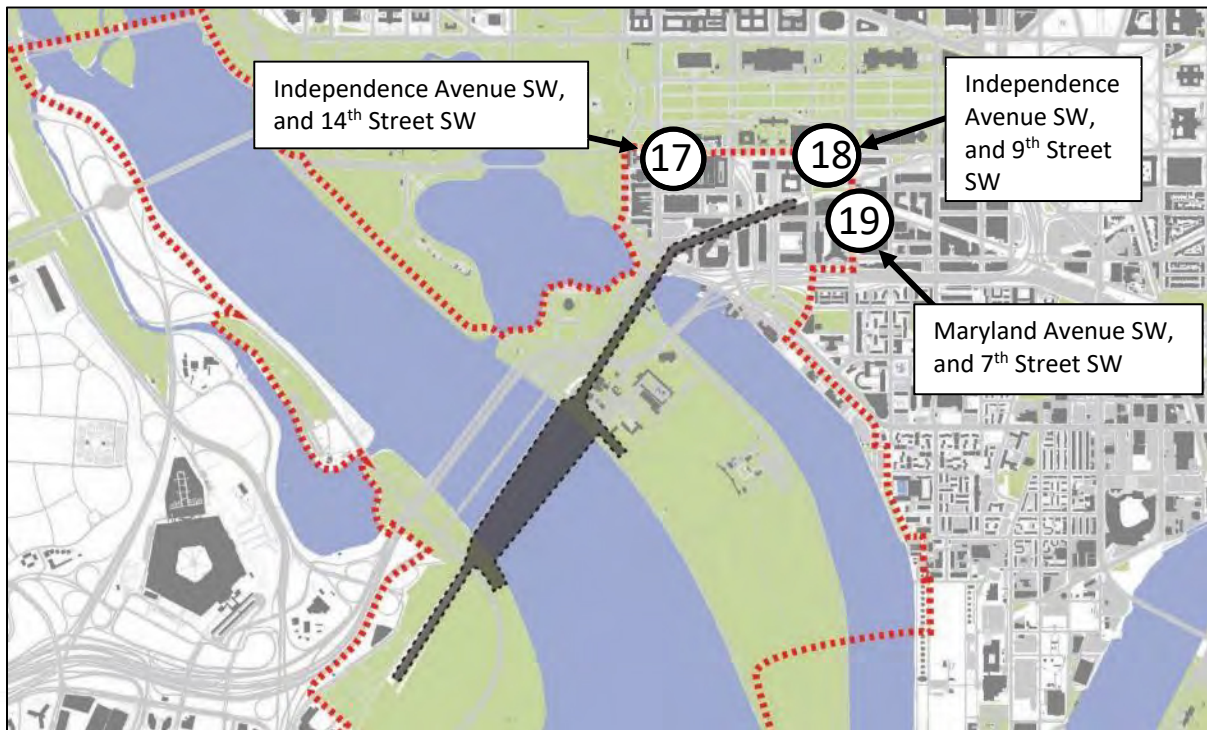
**Figure 2-26** | Photograph location 15. Long Bridge Corridor from East Potomac Park at the Washington Channel, facing northwest



**Figure 2-27** | Photograph location 16. Long Bridge Corridor from Fort McNair at B Street SW, facing northwest



**Figure 2-28** | Map detail of photograph locations 17, 18, and 19



**Figure 2-29** | Photograph location 17. Long Bridge Corridor from Independence Avenue SW, and 14th Street SW facing south



**Figure 2-30** | Photograph location 18. Long Bridge Corridor from intersection of Independence Avenue SW and 9th Street SW, facing south



**Figure 2-31** | Photograph location 19. Long Bridge Corridor from intersection of Maryland Avenue SW, and 7th Street SW, facing southwest



### 3.0 Identification of Historic Properties

Once an APE has been defined, the Federal agency must “...make a reasonable and good faith effort...” to identify historic properties within its boundaries (36 CFR § 800.4(b)(1)). A historic property is defined as “any prehistoric or historic district, site, building, structure, or object included on, or eligible for inclusion in, the National Register of Historic Places (NRHP) maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria” (including artifacts, records, and material remains relating to the district, site, building, structure or object” (36 CFR § 800.16(l)(1)).

In August 2016, FRA and DDOT completed the *Long Bridge Project, Environmental Data Collection Report* (Data Collection Report), which included preliminary identification of historic properties within and in the vicinity of the designated study area. The study area was defined by a 1,000-foot buffer along the length of the Long Bridge Corridor.<sup>9</sup> Historic properties were identified using the following information sources:

- Geographic Information System (GIS) mapping data provided by the District and Arlington County;
- DCSHPO Inventory of Historic Sites;
- NRHP database;
- General Services Administration (GSA) *Historic Buildings* website;
- Virginia Landmarks Register (VLR); and
- Virginia Cultural Resource Information System (V-CRIS).

The *Data Collection Report* was shared with several consulting parties, including VDHR and DCSHPO in September 2016, and the findings related to historic properties were again presented at the consulting party meetings in April and November 2017.

The APE has extended beyond this study area; as such, the above sources were reexamined to identify additional historic properties within the APE. The identification effort was expanded to include the following additional sources of information:

- Properties that are pending or have been recently listed in the NRHP, which were not listed in the August 2016 *Data Collection Report*;
- Properties that have been formally determined eligible for NRHP listing;
- Properties at or greater than 45 years of age that have not been previously evaluated for NRHP eligibility; and
- Contributing streets and avenues, views and vistas, reservations, and other contributing components listed in the Plan of the City of Washington (L’Enfant Plan; L’Enfant-McMillan Plan) NRHP Documentation.

In the future, the identification effort will be expanded to include:

- Potential archaeological resources within the Limits of Disturbance; and

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<sup>9</sup> A 1000-foot buffer was uniformly selected for all environmental resources in the Data Collection Report. FRA selected this buffer to compile preliminary existing data on environmental resources within the vicinity of the Long Bridge Corridor; but it is not an indication that FRA has made any determination that effects would only occur within this 1000-foot buffer zone.

- Any additional feedback from DCSHPO, VDHR, and other consulting parties.

Although the scope for this project does not include drafting formal determinations of eligibility, properties located within the APE that are at least 45 years of age were evaluated against the NRHP Criteria for Evaluation.<sup>10</sup> An assessment of integrity for each property was also undertaken. This age was selected to account for the fifty-year threshold that is generally observed in the evaluation of historic significance, and to account for the implementation schedule of the Long Bridge Project (which may extend five or more years into the future). These properties were identified using a range of documentation resources including real property and building permit data, historic maps and photographs, and aerial photographs. A preliminary evaluation of each property's potential historic significance and integrity is provided herein as a resource for future, more detailed evaluation by the FRA or others at the time of project implementation.

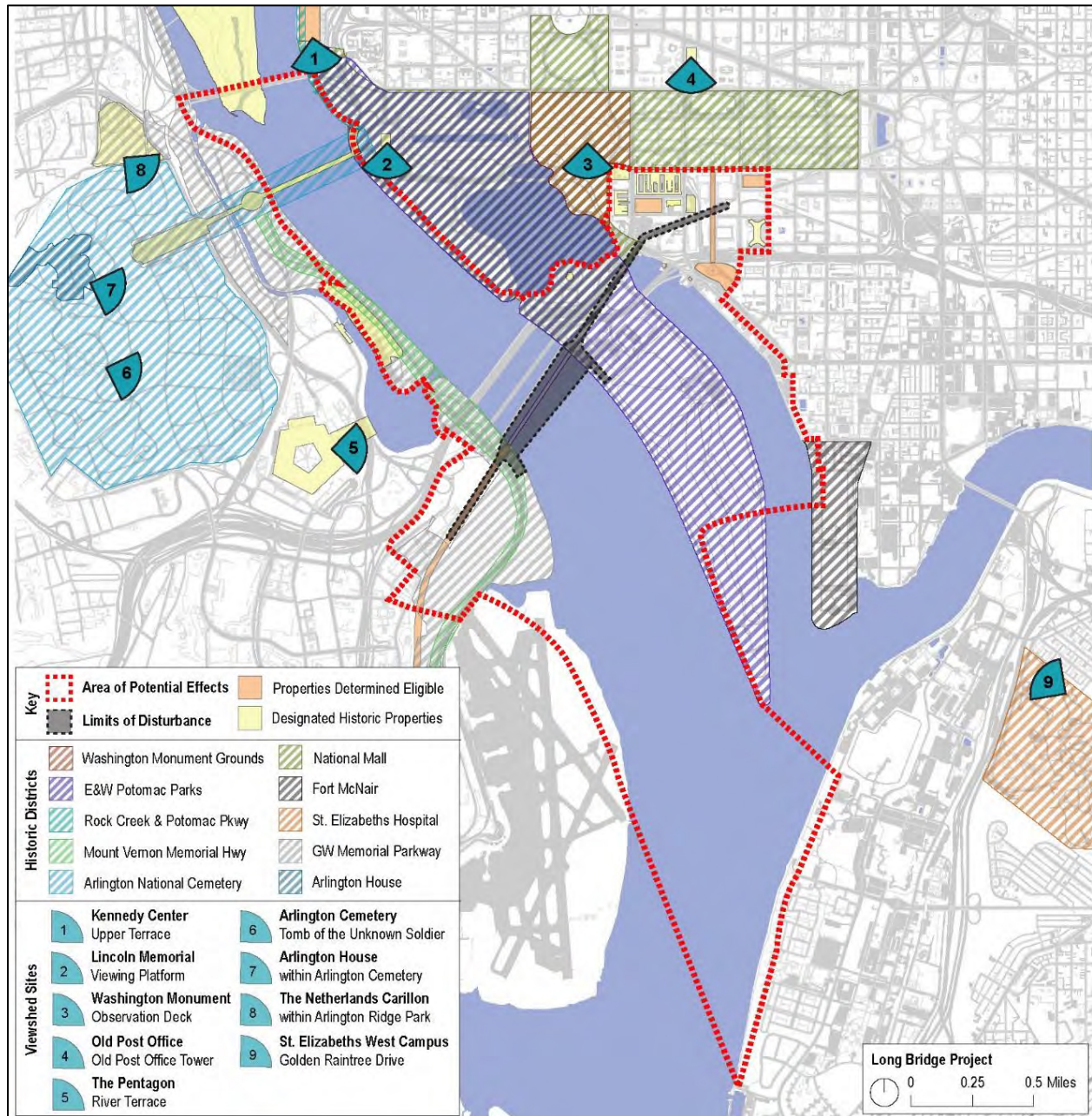
Archaeological resources will be identified using a phased approach. FRA and DDOT will initiate the process by completing a Phase 1A Archaeological Assessment in consultation with DCSHPO and VDHR. The Phase 1A will consist of a desktop review of known archaeological sites and areas that exhibit high archaeological potential. The Phase 1A will address all alternatives, once a Preferred Alternative is identified, additional surveys will be conducted as needed. Because the U.S. Department of the Interior has jurisdiction over a majority of the area within the Limits of Disturbance (including the bottom lands of the Potomac River), FRA and DDOT will coordinate with the National Park Service regarding potential impacts to archaeological resources, including potential underwater archaeology.

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<sup>10</sup> National Register of Historic Places, Frequently Asked Questions. <http://www.nationalregisterofhistoricplaces.com/faq.html>



**Figure 3-1 | Map of APE with Designated and Eligible Historic Properties**



### 3.1. Designated Historic Properties

The following properties have been listed in the NRHP, DC Inventory of Historic Sites (DC), and/or the VLR. Two properties have been designated as National Historic Landmarks (NHL). In some cases, these properties were determined eligible for National Register listing (Determination of Eligibility [DOE]) and were subsequently listed.

**Table 3-1** | List of historic properties previously listed in the NRHP, DC Inventory, or VLR. Several of the below properties listed on the DC Inventory have also been determined eligible for listing on the NRHP.

#	Name	Location	Designation
1.	National Mall Historic District	Washington, DC	DC, NRHP
2.	Parkways of the National Capital Region	Washington, DC	VLR, NRHP
3.	Rock Creek and Potomac Parkway Historic District	Along the Potomac River and Rock Creek from the Lincoln Memorial to the National Zoo.	DC, NRHP
4.	George Washington Memorial Parkway	Arlington County, (Extends to City of Alexandria and Fairfax County)	VLR, NRHP
5.	Mount Vernon Memorial Highway	Arlington County (Extends to City of Alexandria, and Fairfax County)	VLR, NRHP
6.	Plan of the City of Washington	Washington Region Multi-Property Submission	DC, NRHP
7.	East and West Potomac Parks Historic District	Washington, DC	DC, NRHP
8.	Thomas Jefferson Memorial	East Basin Drive SW, Washington, DC	DC, NRHP
9.	Central Heating Plant	325 13th Street SW, Washington, DC	DC, NRHP
10.	U.S. Department of Agriculture (USDA) Cotton Annex	300 12th Street SW, Washington, DC	DC, NRHP
11.	HUD Building (Robert C. Weaver Federal Building)	451 7th Street, SW, Washington, DC	DC, NRHP
12.	U.S. Department of Agriculture South Building	1352 C Street SW, Washington, DC	DC, NRHP
13.	Bureau of Engraving and Printing	301 14th Street SW, Washington, DC	DC
14.	Auditor's Building Complex	14th Street and Independence Avenue SW	DC, NRHP
15.	Arlington Memorial Bridge (and related features)	Memorial Avenue, DC & Virginia	DC, NRHP
16.	Fort Leslie J. McNair Historic District (The Old Arsenal)	4th and P Streets SW	DC, DOE
17.	Titanic Memorial	Water and P Streets SW	DC, NRHP
18.	Lunch Room Building and Oyster Shucking Shed	1100 Maine Avenue SW	DC, DOE
19.	Cuban Friendship Urn	Reservation 332, Ohio Drive at 14th Street Bridge SW	DC, NRHP
20.	Theodore Roosevelt Island National Memorial (Analoatan Island)	Potomac River west of Georgetown Channel	DC, NRHP
21.	Lyndon B. Johnson Memorial Grove	Columbia Island in Lady Bird Johnson Park	DC, NRHP
22.	Lincoln Memorial (Statue of Lincoln) *	West Potomac Park, Washington, DC	DC, NRHP

#	Name	Location	Designation
23.	<b>Washington Monument and Grounds Historic District*</b>	14th Street, between Constitution and Independence Avenues, Washington, DC	DC, NRHP
24.	<b>Arlington House Historic District*</b>	Roughly bound by Sheridan Drive, Ord and Weitzel Drive, Humphrey's Drive and Lee Avenue in Arlington National Cemetery	VLR, NRHP
25.	<b>Arlington National Cemetery Historic District*</b>	One Memorial Avenue, Arlington, VA	NRHP
26.	<b>St. Elizabeths Hospital Historic District*</b>	2700 Martin Luther King Jr., Avenue, SE	DC, NRHP, NHL
27.	<b>Netherlands Carillon (within Arlington Ridge Park)*</b>	Northwest corner of N Meade Street and Marshall Drive in Arlington, VA	VLR, NRHP,
28.	<b>Old Post Office*</b>	1100 Pennsylvania Avenue, NW	DC, NRHP
29.	<b>The Pentagon*</b>	U.S. 1, Va. 110, and Interstate 395	VLR, NRHP, NHL

*\* These properties are designated as viewshed locations outside of the contiguous APE boundaries.*

### 1. National Mall Historic District

*Location:* Washington, DC

*Designation:* DC, NRHP

The National Mall Historic District (the Mall) is comprised of the monumental core of Washington, DC, an original design element of Major General Pierre Charles L'Enfant's Plan for the Capital City. The L'Enfant Plan was further refined and expanded in the McMillan Commission's 1901-1902 plan for the City of Washington. L'Enfant designed the National Mall to serve as the central axis of Washington's monumental core. The Plan called for the Mall to be a 400-foot-wide, mile long, "grand avenue" from the Capitol to a point directly south of the President's house. The site was to be lined with landscaped areas and gardens. The 1901 McMillan Commission restored and supplemented the L'Enfant Plan primarily by removing obtrusive elements and bordering the Mall with public buildings.

**Figure 3-2 | National Mall**



## 2. Parkway of the National Capital Region

*Location:* Throughout the Washington, DC, metropolitan region.

*Designation:* NRHP, VLR

Multi-property documentation for scenic parkways of the Washington, DC region including the George Washington Memorial Parkway, the Mount Vernon Memorial Highway, and the Rock Creek and Potomac Parkway, among others.

**Figure 3-3 |** Rock Creek and Potomac Parkway



## 3. Rock Creek and Potomac Parkway

*Location:* Along the Potomac River and Rock Creek from the Lincoln Memorial to the National Zoo.

*Designation:* DC, NRHP

The first parkway for which legislation was passed in the Nation's Capital and one of the earliest parkways constructed in the region. In 1913, Congress passed the Public Buildings Act, which authorized the creation of the parkway. Planning, design, and land acquisition of the parkway continued through the 1930s, and the parkway was completed in 1935.

**Figure 3-4 |** Rock Creek and Potomac Parkway



## 4. George Washington Memorial Parkway

*Location:* Arlington County, City of Alexandria, and Fairfax County

*Designation:* VLR, NRHP

The George Washington Memorial Parkway is a 25-mile scenic parkway administered by the National Park Service. Constructed predominantly in the 1930s, the parkway provides a ceremonial and recreational corridor between northern Virginia and Mount Vernon, the home and estate of George Washington.

**Figure 3-5 |** George Washington Memorial Parkway (Mount Vernon)



### 5. Mount Vernon Memorial Highway

*Location:* Arlington County, City of Alexandria, and Fairfax County

*Designation:* VLR, NRHP

Original 15.2-mile segment of the scenic parkway commemorating the birth of George Washington.

**Figure 3-6 |** Mount Vernon Memorial Highway (Google Maps)



### 6. Plan of the City of Washington

*Location:* Includes original elements of Pierre Charles L'Enfant's plan for the City of Washington, including later elements proposed by the McMillan Commission

*Designation:* NRHP, DC

Multi-property submission for the street grid, diagonal avenues, parks, vistas among monuments and sites over Federal land within the L'Enfant Plan boundary, and the airspace above this matrix up to the legal height limit in the City.

**Figure 3-7 |** Detail, L'Enfant Plan Facsimile, 1887 (Library of Congress)



### 7. East and West Potomac Parks Historic District

*Location:* Washington, DC

*Designation:* NRHP, DC

Historic district comprising 730 acres of park land along the Potomac River. Standing memorials in the parks include the Lincoln and Jefferson Memorials. Contributing features to this historic district include the Inlet Bridge, the U. S. Engineers Storehouse, the National Capital Region Building complex, East Potomac Park Golf Course, East Potomac Park Field House, East Potomac Park Swimming Pool, and D-1 Substation Building.

**Figure 3-8 |** Hains Point, East and West Potomac Parks Historic District



The Long Bridge, constructed in 1904, is a contributing feature to the East and West Potomac Parks historic district.<sup>11</sup>

**Figure 3-9 |** Long Bridge



### 8. Thomas Jefferson Memorial

*Location:* 16 East Basin Drive SW, Washington, DC  
*Designation:* NRHP, DC

National Memorial dedicated to third U.S. President Thomas Jefferson. Designed by notable architect John Russell Pope, the memorial was constructed between 1937 and 1942. Sited facing the Tidal Basin, the memorial forms a significant component of the city's monumental plan.

**Figure 3-10 |** Jefferson Memorial  
(National Park Service)



### 9. Central Heating Plant

*Location:* 325 13th Street SW, Washington, DC  
*Designation:* NRHP, DC

A heating plant completed in 1934 to supply steam to Federal buildings. Designed in the Art Deco style by architect Paul Phillippe Cret under the direction of the Supervising Architect of the Treasury Department.

**Figure 3-11 |** Central Heating Plant



<sup>11</sup> The Evening Star. 1904. *First Train Passes, New Railway Bridge Used for First Time*. August 25, 1904.

**10. USDA Cotton Annex**

*Location:* 300 13th Street SW, Washington, DC  
*Designation:* NRHP, DC

The Bureau of Agricultural Economics (BAE) Building, now known as the Cotton Annex, was built in 1936 to 1937 for the USDA under the auspices of Supervising Architect of the Treasury Louis A. Simon (1933–1939).

**Figure 3-12 |** USDA Cotton Annex



**11. U.S. Department of Housing and Urban Development (HUD) Building (Robert C. Weaver Federal Building)**

*Location:* 451 7th Street SW, Washington, DC  
*Designation:* NRHP, DC

Completed in 1968 by the architect Marcel Breuer. The modernist design and execution of the HUD building exemplifies the primary tenets of the "Guiding Principles for Federal Architecture" as set forth by President John F. Kennedy's administration in 1962.

**Figure 3-13 |** HUD Building



**12. USDA South Building**

*Location:* 1352 C Street SW, Washington, DC  
*Designation:* DC, NRHP

Completed in 1936, the South Building is significant for its association with the growth of the Department of Agriculture; broader patterns of city development in the District; and as an excellent example of the Stripped Classical style of Federal architecture of the 1930s.

**Figure 3-14 |** USDA South Building



**13. Bureau of Engraving and Printing (BEP) (Main Building)**

*Location:* 301 14th Street SW, Washington, DC

*Designation:* DC

The building was designed by the Office of the Supervising Architect of the Treasury, under Supervising Architect James Knox Taylor. The Neoclassical style building was completed in February 1914.

**Figure 3-15** | BEP Main Building



**14. Auditor's Building Complex**

*Location:* 14th Street and Independence Avenue SW, Washington, DC

*Designation:* DC, NRHP

The Auditors Building was the first building designed and constructed for the U.S. Department of the Treasury Bureau of Engraving and Printing. Originally completed in 1880, the building had three major additions in 1891, 1895, and 1900. Originally designed by James B. Hill, Supervising Architect of the Treasury Department, the building is also significant for its architectural style.

**Figure 3-16** | Auditor's Building (Library of Congress)



**15. Arlington Memorial Bridge (and Related Features)**

*Location:* Memorial Avenue, DC and Virginia

*Designation:* DC, NRHP

The 1932 bridge and its related features are a major element of 1902 McMillan Commission plan for the city. The bridge serves as a symbolic link between the north and the south, connecting Arlington House (home of Robert E. Lee) and the Lincoln Memorial.

**Figure 3-17** | Memorial Bridge





**16. Fort Leslie J. McNair Historic District (The Old Arsenal)**

*Location:* Fourth and P Streets SW, Washington, DC

*Designation:* DC, DOE

Fort McNair was established in 1791 and today is the third oldest U.S. Army installation in continuous use. The district is significant in the fields of architecture, military history, military education, and health and medicine.

**Figure 3-18 |** Fort McNair (National Defense University)



**17. Titanic Memorial**

*Location:* Water and P Streets SW, Washington, DC

*Designation:* DC, NRHP

The Titanic Memorial was designed by the female sculptor Gertrude Vanderbilt Whitney. The sculpture is significant as it is only one of five located in the District designed by a woman. Completed in 1916, the statue was originally erected at the Rock Creek and Potomac Parkway in 1930. In 1968, the statue was relocated to its present location.

**Figure 3-19 |** Titanic Memorial



**18. Lunch Room Building and Oyster Shucking Shed**

*Location:* 1100 Maine Avenue SW, Washington, DC

*Designation:* DC, DOE

The Lunch Room Building and Oyster Shucking Shed are significant as they are the only extant buildings associated with the 1916-1918 Municipal Fish Wharf and Market on Water Street. The buildings illustrate Congress' support for the City Beautiful movement as implemented by the improvement of the District's shoreline, and recognition of the need to address issues with the District's fishing industry, as well as they health and welfare of the District's citizens.

**Figure 3-20 |** Lunch Room



**19. Cuban Friendship Urn**

*Location:* Reservation 332, Ohio Drive at Fourteenth Street Bridge SW, Washington, DC

*Designation:* DC, NRHP

The urn is significant as it is the second gift of sculpture presented to the District of Columbia by a foreign nation. It was presented to President Calvin Coolidge in Havana in 1928, and Congress authorized its acceptance on May 22, 1928.

**Figure 3-21 |** Cuban Friendship Urn (Wikimedia Commons)



**20. Theodore Roosevelt Island National Memorial (Analoostan Island)**

*Location:* Potomac River west of Georgetown Channel

*Designation:* DC, NRHP

The 88-acre island is a memorial to Theodore Roosevelt, twenty-sixth President of the United States. It was presented to the U.S. by the Roosevelt Memorial Association in 1931 and opened to the public in 1936.

**Figure 3-22 |** Roosevelt Memorial (National Park Service)



**21. Lyndon B. Johnson Memorial Grove on the Potomac**

*Location:* George Washington Memorial Parkway

*Designation:* NRHP

Authorized by Congress in 1973, the Memorial Grove established an official memorial to President Lyndon B. Johnson. The site is significant for its association with the historic pattern of creating presidential memorials, which began with the Washington Monument, and as an excellent example of twentieth century landscape architecture.

**Figure 3-23** | Johnson Memorial Grove (National Park Service)



**22. Lincoln Memorial (Statue of Lincoln)**

*Location:* West Potomac Park, Washington, DC

*Designation:* DC, NRHP

The Lincoln Memorial is significant as an important example of Neoclassical style architecture. It is the foremost memorial to the sixteenth President of the United States, and as the terminus of the extended Mall plan in the Senate Park Commission's (popularly known as the McMillan Commission) 1902 plan for the city. The memorial was designed by architect Henry Bacon, and Lincoln's statue is the work of sculptor Daniel Chester French.

**Figure 3-24** | Lincoln Memorial (National Park Service)



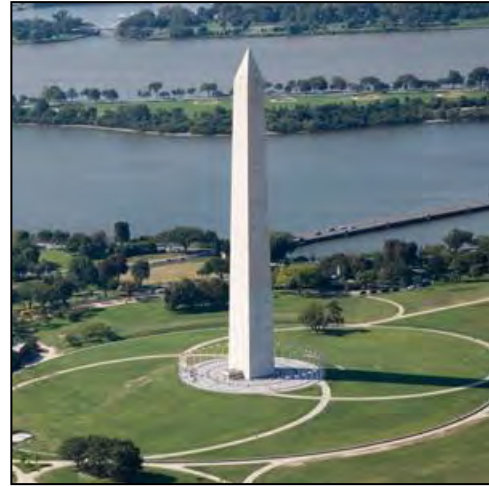
### 23. Washington Monument and Grounds Historic District

*Location:* 14th Street, between Constitution and Independence Avenues, Washington, DC

*Designation:* DC, NRHP

The Washington Monument and Grounds Historic District is significant under Criterion A in the areas of: politics and government as part of the establishment of the national capital; social history as a gathering place for the American citizenry to express their First Amendment rights; ethnic heritage for its association with the 1963 March on Washington for Jobs and Freedom; and locally as the site of continuing entertainment and recreation. The historic district is also significant for its architecture, planning, and design, and as a planned cultural landscape. There are several views and vistas that contribute to the significance of the historic district, including views from the top of the monument to surrounding city and important sites.

**Figure 3-25 |** Washington Monument and Grounds (National Park Service)



### 24. Arlington House Historic District

*Location:* Roughly bound by Sheridan Drive, Ord and Weitzel Drive, Humphrey's Drive and Lee Avenue in Arlington National Cemetery, Arlington, VA

*Designation:* VLR, NRHP

The Arlington House Historic District is significant for its association with George Washington Parke Custis (step-grandson of George Washington) and General Robert Edward Lee (military leader and important figure in the American Civil War); its architecture and landscape design; its reflection of the ethnic heritage of enslaved African Americans and household slaves who worked and lived on site; its association with Arlington National Cemetery; as one of the Federal government's first attempts at historic preservation (1925 legislation, 1928-1935 restoration); and its archaeology. There are several views and vistas that contribute to the significance of the historic district, including views from the house eastward. Arlington House Historic District is located within the boundaries of the Arlington National Cemetery Historic District. It

**Figure 3-26 |** Arlington House (National Park Service)



is not administered by Arlington Cemetery but rather separately by the National Park Service.

**25. Arlington National Cemetery Historic District**

*Location:* One Memorial Avenue, Arlington, VA

*Designation:* NRHP

Arlington National Cemetery Historic District is significant as the country's most sacred national cemetery. Created from the former estate of Mary Anna Custis Lee (wife of Civil War Confederate General Robert E. Lee) and purchased by the Federal Government in 1864, the site includes several significant contributing architectural features, including Arlington House, the Tomb of the Unknown Soldier, the Arlington Memorial Amphitheater, and numerous additional memorials. The current Long Bridge is visible from Arlington House, the Tomb of the Unknown Soldier, and their immediately surrounding landscapes.

**Figure 3-27 |** Arlington National Cemetery (Arlington Cemetery)



**26. St. Elizabeths Hospital Historic District**

*Location:* 2700 Martin Luther King Jr., Avenue SE, Washington, DC

*Designation:* DC, NRHP, NHL

St. Elizabeths Hospital Historic District is one of the nation's earliest institutions for the treatment of mental illness. Established through the efforts of Dorothea Dix, the leading mental health reformer of the 19th century, the hospital was chartered by Congress in 1852 as the Government Hospital for the Insane, with the

**Figure 3-28 |** St. Elizabeths West Campus



mission to provide humane care for patients from the Army, Navy, and District of Columbia. The historic district features a significant collection of late-19th and early 20th-century architecture, including the Center Building (1853-1855), an early example of the linear plan for mental hospital wards developed by reformer Thomas Kirkbride.

**27. Netherland Carillon (within Arlington Ridge Park)**

*Location:* Within Arlington Ridge Park at the northwest corner of N Meade Street and Marshall Drive in Arlington, VA

*Designation:* Contributing resource within Arlington Ridge Park (NRHP, VLR)

The Netherlands Carillon is located at the south end of Arlington Ridge Park. The Netherlands Carillon, designed by Dutch architect Joost W.C. Boks, is a Modernist steel framework with a memorial carillon. The carillon was presented as a gift to the United States by the Netherlands in thanks for the aid provided by the United States during and after World War II. The carillon is set within a picturesque landscape designed by National Park Service landscape architects in the early 1960s. The Netherlands Carillon appears to be potentially individually eligible per NPS documentation.

**Figure 3-29 |** The Netherlands Carillon (National Park Service)



**28. Old Post Office**

*Location:* 1100 Pennsylvania Avenue, NW

*Designation:* DC, NHRP (located within Federal Triangle (DC, DOE) and Pennsylvania Avenue National Historic Site (NHS, NR, DC)

The Old Post Office and Clock Tower (1891 – 1899) was designed by the Office of the Supervising Architect of the Treasury under Willoughby J. Edbrooke to house both the Post Office Department as well as the City Post Office. The first Federal Office building to be constructed in the area later known as Federal Triangle, it is one of the few Romanesque Revival style buildings of monumental scale to be constructed in Washington. At the time of its completion, its 315-foot clock tower was the third highest building in the District, after the Washington Monument and the Capitol.

**Figure 3-30 |** The Old Post Office (National Park Service)



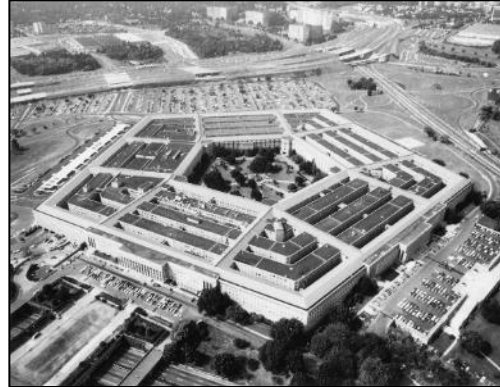
## 29. The Pentagon

*Location:* U.S. 1, Va. 110, and Interstate 395

*Designation:* VLR, NRHP, NHL

The Pentagon (1941 – 1943) was primarily designed by architects George Edwin Bergstrom and David J. Witmer. The Pentagon is significant as a NHL for its association with “events that have made a significant contribution to the geopolitical role of the United States as a world power” from World War II to the present, and for its association with the lives of nationally significant individuals from 1941 to today. Although the building’s architecture did not qualify the building as an NHL, the building is considered architecturally important as it embodies the Stripped Classical style of architecture popular during the period, and as the largest and one of the last of Washington’s monumental buildings designed in accordance with the McMillan Commission’s 1902 plan for the City of Washington.

**Figure 3-31** | The Pentagon (VDHR)



### 3.2. Eligible Historic Properties

The following properties have been determined eligible or recommended as eligible for listing in the National Register of Historic Places.

**Table 3-2** | List of historic properties that have been determined eligible for listing in the NRHP by a Federal agency or recommended as eligible by a SHPO.

#	Name	Location	Designation
1.	<b>Bureau of Engraving and Printing Annex</b>	300 14th Street SW, Washington, DC	DOE
2.	<b>Federal Office Building 10A (Orville Wright Building)</b>	800 Independence Ave SW, Washington, DC	DOE
3.	<b>Benjamin Banneker Park/Overlook; Tenth Street Overlook</b>	Terminus of 10th Street SW, Washington, DC	DOE
4.	<b>Richmond, Fredericksburg and Potomac Railroad Historic District</b>	Along CSX right-of-way in VA from Arlington County to the City of Richmond	DOE
5.	<b>Washington Marina Building</b>	1300 Maine Avenue SW	DOE
6.	<b>L'Enfant Promenade</b>	Section of 10th Street SW between Independence Avenue and Banneker Park	DOE
7.	<b>Lady Bird Johnson Park</b>	George Washington Memorial Parkway	DOE
8.	<b>John F. Kennedy Center for the Performing Arts*</b>	2700 F Street NW, Washington, DC	DOE
9.	<b>Liberty Loan Federal Building</b>	401 14th Street SW, Washington, DC	DOE

*\* These properties are designated as viewshed locations outside of the contiguous APE boundaries.*

#### 1. Bureau of Engraving and Printing (BEP) Annex

*Location:* 300 14th Street SW, Washington, DC

*Designation:* DOE

The BEP Annex was constructed between 1936-1938 for the BEP under the auspices of the Office of the Supervising Architect, Louis A. Simon, Supervising Architect, and Neal A. Melick, Supervising Engineer. The BEP Annex is significant for its association with the operation and growth of the BEP during the twentieth century, and as a distinctive example of a Stripped Classic style Federal building constructed in the 1930s.

**Figure 3-32** | BEP Annex





**2. FOB 10A; Orville Wright Building**

*Location:* 800 Independence Avenue SW, Washington, DC

*Designation:* DOE

FOB 10A was originally constructed between 1961 and 1963 for GSA, and was one of the earliest to be constructed as part of the urban renewal program for southwest Washington, DC. The International style building was designed by the architectural firms of Holabird & Root & Burgee, and Carroll, Grisdale & Van Alen.

**Figure 3-33 |** FOB 10A (GSA)



**3. Benjamin Banneker Park/Overlook; Tenth Street Overlook**

*Location:* Terminus of 10th Street SW, Washington, DC

*Designation:* DOE

Landscape completed in 1969 and designed by landscape architect Dan Kiley, is a 200-foot wide elliptical concrete plaza with a large, central, conical, fountain of green granite. Designed and constructed as part of the National Capital Planning Commission’s (NCPC) 1956 Urban Renewal Plan: Southwest Urban Renewal Project C.

**Figure 3-34 |** Banneker Park



**4. Richmond, Fredericksburg and Potomac Railroad Historic District**

*Location:* Along CSX right-of-way in eastern Virginia from the Potomac River in Arlington County to the South Broad Street Station in the City of Richmond, VA

*Designation:* DOE (recommended as eligible by VDHR staff)

The Richmond, Fredericksburg, and Potomac Railroad was a railroad connecting Richmond, Virginia, to Washington, DC. The railroad corridor conveys its association with transportation from ca. 1837 through 1943, when the demand for railroad transportation began to wane. In 2017, VDHR staff recommended the railroad corridor potentially eligible as an historic district.

**Figure 3-35 |** Richmond, Fredericksburg and Potomac Railroad (Richmond, Fredericksburg & Potomac Railroad Historical Society, Inc.)



### 5. Washington Marina Building

*Location:* 1300 Maine Avenue SW, Washington, DC

*Designation:* DOE

Completed in 1938, the Washington Marina Building was an element of a larger Works Progress Administration (WPA) project to improve the Washington Channel. The project was completed by the WPA and the U.S. Army Corps of Engineers. The building is significant for its association with the WPA and improvement of the District's waterfront.

**Figure 3-36** | Washington Marina Building



### 6. L'Enfant Promenade

*Location:* Section Tenth Street SW between Independence Avenue and Banneker Park

*Designation:* DOE

The promenade, originally known as the Tenth Street Mall, was a key element of I.M Pei and Harry Weese's plan for Southwest Redevelopment Area. The promenade is significant for its association with the creation and implementation of the NCPC's 1950 *Comprehensive Plan for the District of Columbia*.

**Figure 3-37** | L'Enfant Promenade



### 7. Lady Bird Johnson Park

*Location:* In the George Washington Memorial Parkway along the Potomac River, directly across the river from West Potomac Park

*Designation:* DOE

The park is comprised of a man-made island, originally known as Columbia Island, that was constructed between 1915 and 1930. The park was constructed in connection with the Arlington Memorial Bridge's construction. In the 1960s and 1970s, the island was improved as part of the Johnson Administration's beautification program, and by a tree planting plan

**Figure 3-38** | Lady Bird Johnson Park (Cultural Landscape Foundation)



designed by the landscape architect Edward Durrell Stone, Jr.

### 8. John F. Kennedy Center for the Performing Arts

*Location:* 2700 F Street NW, Washington, DC

*Designation:* DOE

The Modernist style building was designed by the American architect Edward Durrell Stone and was constructed between 1964 and 1971. The Kennedy Center has been determined historically significant as an important work by Stone, and as the only memorial to President Kennedy in the vicinity of Washington, DC.

**Figure 3-39** | Kennedy Center

(Wikimedia Commons)



### 9. Liberty Loan Federal Building

*Location:* 401 14th Street SW, Washington, DC

*Designation:* DOE

The building was originally constructed as one of many temporary office buildings to support wartime bureaucratic expansion and housed the Liberty Loans bond program during World War I. It is the only surviving “tempo” building. The building has housed several Treasury organizations and Federal agencies. Today, the building is used by the U.S. Department of the Treasury’s Bureau of the Fiscal Service.<sup>12</sup> DCSHPO and the General Services Administration (GSA) consider the building eligible for NRHP listing and GSA is currently preparing a formal DOE.

**Figure 3-40** | Liberty Loan Federal

Building (Google Maps)



<sup>12</sup> “Liberty Loan Federal Building,” GSA, accessed October 18, 2017, <https://www.gsa.gov/real-estate/gsa-properties/visiting-public-buildings/liberty-loan-federal-building>.

### 3.3. Properties at or Greater than Forty-Five Years of Age

The following properties were constructed prior to 1972. Preliminary determinations have been made regarding each property's potential eligibility for listing in the NRHP.

**Table 3-3** | List of historic properties that have been determined eligible for listing in the NRHP by a Federal agency or recommended as eligible by a SHPO.

#	Name	Location	Date(s)	Preliminary Determination of Eligibility
1.	<b>425 12<sup>th</sup> Street SW</b>	425 12 <sup>th</sup> Street SW, Washington, DC	1959	Likely not eligible.
2.	<b>Astral Building (North Building, L'Enfant Plaza)</b>	955 L'Enfant Plaza, SW Washington, DC	1968	Potentially eligible.
3.	<b>Comsat Building (South Building, L'Enfant Plaza)</b>	950 L'Enfant Plaza, SW Washington, DC	1965	Potentially eligible.
4.	<b>Loew's L'Enfant Plaza Hotel (East Building, L'Enfant Plaza)</b>	470-490 L'Enfant Plaza SW, Washington, DC	1971 to 1973	Potentially eligible.
5.	<b>USPS Building (West Building, L'Enfant Plaza)</b>	475 L'Enfant Plaza, SW Washington, DC	1969 to 1971	Potentially eligible.
6.	<b>398 Long Bridge Drive</b>	398 Long Bridge Drive, Arlington, VA	1957	Likely not eligible.

#### 1. 425 12<sup>th</sup> Street, SW

*Location:* 425 12th Street SW, Washington, DC

*Date of Construction:* 1959

A one-story brick substation surrounded by a solid brick fence owned by PEPCO. Although the nondescript utilitarian building appears to maintain its integrity, based on cursory research it does not appear to meet the National Register criteria for evaluation. As such, the property is likely not eligible for listing in the NRHP.

**Figure 3-41** | 425 12th Street, SW (Google Maps)



## 2. Astral Building (North Building, L'Enfant Plaza)

*Location:* 955 L'Enfant Plaza SW, Washington, DC

*Date of Construction:* 1968

Designed by Araldo A. Cossutta, a partner with the architectural firm of I.M. Pei and Partners. Completed as part of Phase I of L'Enfant Plaza. The building is part of the larger L'Enfant Plaza complex, which includes the Comsat Building (South Building) (1965), Loew's L'Enfant Plaza Hotel (East Building) (1971 to 1973), USPS Building (West Building) (1969 to 1971) and the plaza.<sup>13</sup> L'Enfant Plaza was a major feature of the urban renewal of the southwest quadrant of Washington, DC, that took place during the mid-20<sup>th</sup> century, and is an interesting example of the Brutalist style in Washington, DC. The building appears to maintain sufficient integrity of location, design, setting, materials, workmanship, feeling and association to convey its significance. As such, the property is potentially eligible for listing in the NRHP.

**Figure 3-42** | Astral Building (Google Maps)



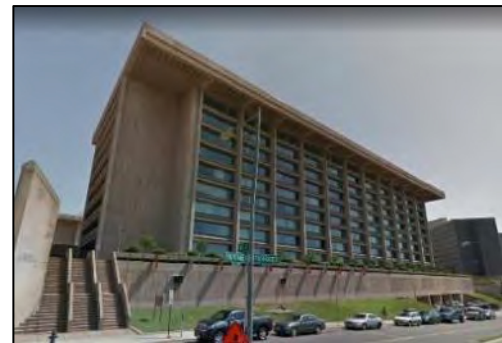
## 3. Comsat Building (South Building, L'Enfant Plaza)

*Location:* 950 L'Enfant Plaza SW, Washington, DC

*Date of Construction:* 1965

Designed by Araldo A. Cossutta, a partner with the architectural firm of I.M. Pei and Partners. Completed as part of Phase I of L'Enfant Plaza. The building is part of the larger L'Enfant Plaza complex, which includes the Astral Building (North Building) (1968), Loew's L'Enfant Plaza Hotel (East Building) (1971 to 1973), USPS Building (West Building) (1969 to 1971) and the plaza.<sup>14</sup> L'Enfant Plaza was a major feature of the urban renewal of the southwest quadrant of Washington, DC, that took place during the mid-20<sup>th</sup> century, and is an interesting example of the Brutalist style in Washington, DC. The building appears to maintain sufficient integrity of location, design, setting, materials, workmanship, feeling and association to convey its significance. As such, the property is potentially eligible for listing in the NRHP.

**Figure 3-43** | Comsat Building (Google Maps)



<sup>13</sup> Francesca Russello Ammon, *Historic American Buildings Survey, Southwest Washington Urban Renewal Area, HABS DC-856* (2004), 91.

<sup>14</sup> Francesca Russello Ammon, *Historic American Buildings Survey, Southwest Washington Urban Renewal Area, HABS DC-856* (2004), 91.

#### 4. Loew's L'Enfant Plaza Hotel (East Building, L'Enfant Plaza)

*Location:* 470-490 L'Enfant Plaza SW, Washington, DC

*Date of Construction:* 1971 to 1973

Part of the second phase of the L'Enfant Plaza construction. Construction of the building began in fiscal year 1971 and was completed in 1973. The building was designed by Vlasimil Koubek, a local architect. The building is part of the larger L'Enfant Plaza complex, which includes the Astral Building (North Building) (1968), Comsat Building (South Building) (1965), USPS Building (West Building) (1969 to 1971) and the plaza.<sup>15</sup> L'Enfant Plaza was a major feature of the urban renewal of the southwest quadrant of Washington, DC, that took place during the mid-20<sup>th</sup> century, and is an interesting example of the Brutalist style in Washington, DC. The building appears to maintain sufficient integrity of location, design, setting, materials, workmanship, feeling and association to convey its significance. As such, the property is potentially eligible for listing in the NRHP.

**Figure 3-44** | Loew's L'Enfant Plaza Hotel (Google Maps)



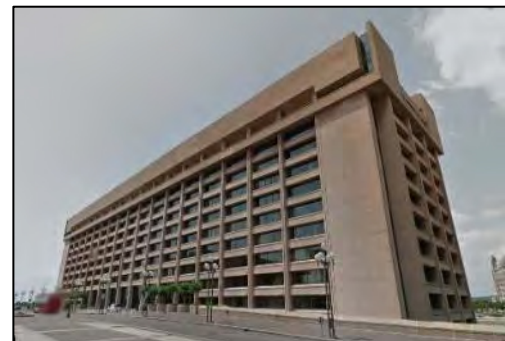
#### 5. USPS Building (West Building, L'Enfant Plaza)

*Location:* 475 L'Enfant Plaza SW, Washington, DC

*Date of Construction:* 1969 to 1971

Part of the second phase of the L'Enfant Plaza construction, the building was separated from the plaza by the L'Enfant Promenade. Construction of the building began in 1969 and the building was completed in 1971. The building was purchased by the U.S. Postal service in 1972. The building was designed by Vlasimil Koubek, a local architect. The building is part of the larger L'Enfant Plaza complex, which includes the Astral Building (North Building) (1968), Comsat Building (South Building) (1965), Loew's L'Enfant Plaza Hotel (East Building) (1971 to 1973), and the plaza.<sup>16</sup> L'Enfant Plaza was a major feature of the urban renewal of the southwest quadrant of Washington, DC, that took place during the mid-20<sup>th</sup>

**Figure 3-45** | USPS Building (Google Maps)



<sup>15</sup> Francesca Russello Ammon, *Historic American Buildings Survey, Southwest Washington Urban Renewal Area, HABS DC-856* (2004), 92.

<sup>16</sup> Francesca Russello Ammon, *Historic American Buildings Survey, Southwest Washington Urban Renewal Area, HABS DC-856* (2004), 92.

century, and is an interesting example of the Brutalist style in Washington, DC. The building appears to maintain sufficient integrity of location, design, setting, materials, workmanship, feeling and association to convey its significance. As such, the property is potentially eligible for listing in the NRHP.

#### **6. 398 Long Bridge Drive**

*Location:* 398 Long Bridge Drive, Arlington, VA

*Date of Construction:* 1957

A brick-clad commercial building. The building is composed of a two-story entrance block, and large, one-story warehouse space. The building's façade appears to have undergone several alterations, including changes to the fenestration, window replacement, main entrance alteration, and the addition of first floor awnings. The building appears to lack historic significance and integrity and is likely not eligible for listing in the NRHP.

**Figure 3-46** | 398 Long Bridge Drive  
(Google Maps)

