Chapter 6
Final Section 4(f) Evaluation

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This Section 4(f) Evaluation has been prepared in compliance with Section 4(f) of the U.S. Department of Transportation Act of 1966, which is codified at 49 U.S.C. § 303 and 23 U.S.C. § 138, implementing regulations at 23 CFR § 774.

Section 4(f) permits the use of land from a publicly-owned public park, recreation area, wildlife or waterfowl refuge, or land of a historic site of national state or local significance only if there is no feasible and prudent avoidance alternative, to the use of land from the property; and the action includes all possible planning to minimize harm to the property resulting from such use.

The authority to administer Section 4(f) and make Section 4(f) approvals resides with the Secretary of the U.S. Department of Transportation (USDOT). The Secretary of Transportation has delegated the authority for administering Section 4(f) to the Federal Highway Administration (FHWA) Administrator in 49 CFR § 1.48.

The proposed reconstruction of Virginia Avenue Tunnel (the Project) requires FHWA approval because this Project will temporarily affect ramps of Interstate 695 (I-695) located at 6th and 8th Streets SE during construction. In addition, the Project requires use of land from properties protected by Section 4(f), and therefore FHWA approval is also required in order for this Section 4(f) use to proceed.

6.1 Project Description

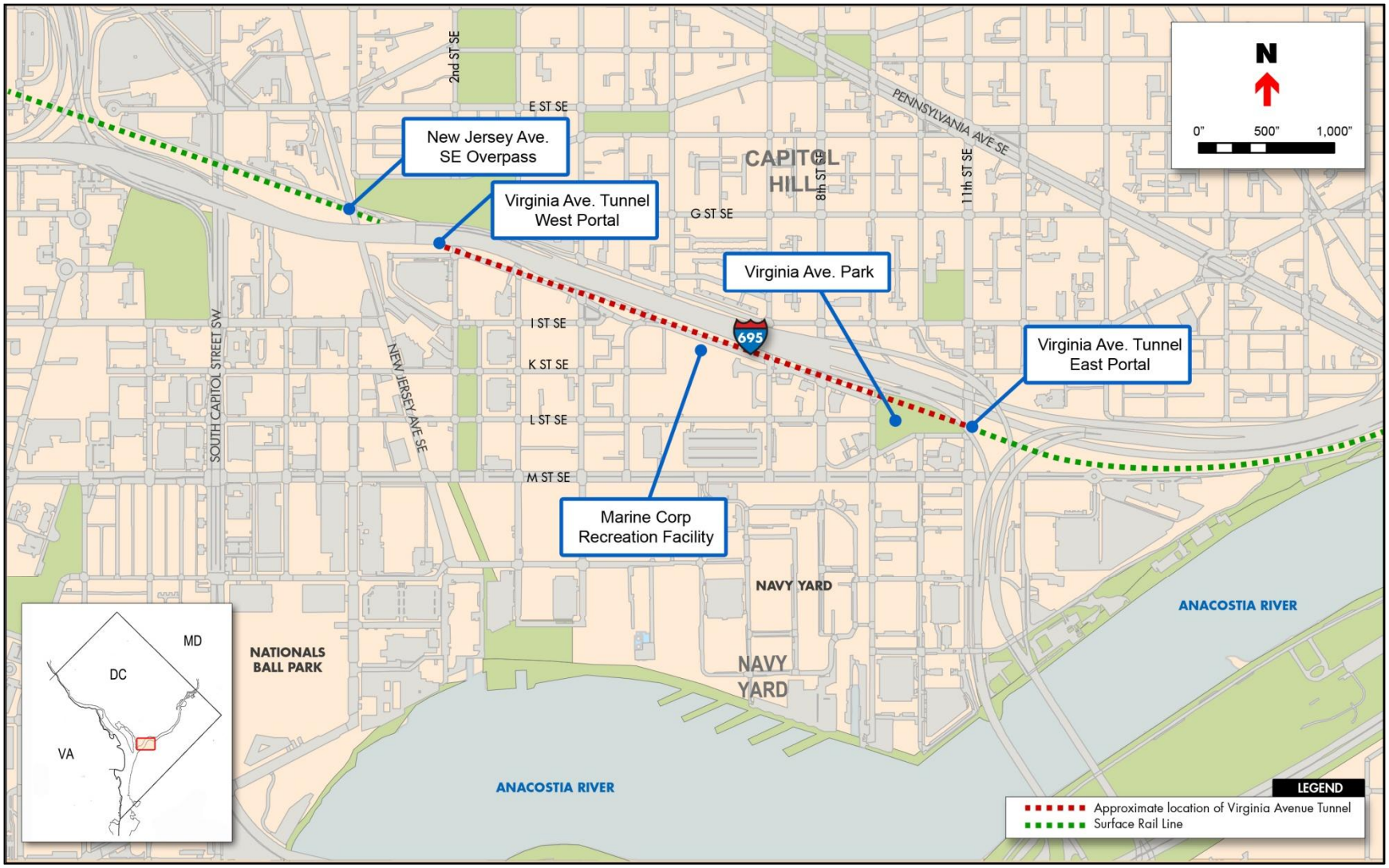
CSX Transportation, Inc. (CSX) is seeking permits and approvals from FHWA and the District Department of Transportation (DDOT) for the reconstruction of the Virginia Avenue Tunnel, a 3,800-foot long freight rail tunnel located in the District of Columbia. The tunnel is located beneath eastbound Virginia Avenue SE from 2nd to 9th Streets SE; Virginia Avenue Park between 9th and 11th Streets; and the 11th Street Bridge right-of-way. The tunnel is also aligned on the south side of I-695 (see Figure 6-1). The tunnel portals are located a short distance west of 2nd Street SE and a short distance east of 11th Street SE. The reconstructed tunnel's east portal will be moved to 12th Street SE. The tunnel connects with other CSX-owned rail lines running through the District, which are part of CSX's eastern seaboard freight rail corridor.

6.2 Purpose and Need

The purpose of the proposed action is to preserve, over the long-term, the continued ability to provide efficient freight transportation services in the District of Columbia, the Washington Metropolitan Area and the eastern seaboard. These services will continue if the following needs are met:

1. Address the structural and operational deficiencies of the century-old Virginia Avenue Tunnel;

Figure 6-1
Project Location



2. Accommodate expected increases in freight transportation that, in part, would stem from the Panama Canal expansion scheduled for 2015; and
3. Ensure that during construction freight transportation services remain uninterrupted while the functions of the tunnel are being replaced with a new facility.

6.2.1 Structural and Operational Deficiencies of Virginia Avenue Tunnel

Virginia Avenue Tunnel's horizontal clearance only allows a single railroad track, which causes a bottleneck in the rail network due to the existence of two railroad tracks on both sides of the tunnel. In addition, the tunnel's vertical clearance does not allow the operation of double-stack intermodal container freight trains, a type of operation that CSX and other major railroad companies have adopted as the norm in the freight rail transportation industry where the rail network allows it. Finally, as an aging piece of infrastructure nearing the end of its useful life, the tunnel is increasingly subject to inspection and preventive maintenance for safe rail operations. These frequent inspections and preventive maintenance activities are difficult to conduct without compromising normal rail operations.

6.2.2 Freight Transportation Demand

Virginia Avenue Tunnel and the eastern seaboard freight rail corridor need to accommodate expected increases in freight transportation demand over the next few years, in part due to the Panama Canal expansion scheduled to occur in 2015. The projected increased demand for freight transportation requires taking steps now to modernize the freight rail network, including replacing the tunnel with a more modern facility. By accommodating double-stacked intermodal containers, CSX will be able to transport the expected increase in freight in fewer trains than would otherwise be possible.

6.2.3 Commerce Demands

Reconstructing an existing and vital piece of transportation infrastructure presents challenges in terms of how to maintain freight operations during the construction of the replacement tunnel. The ability to quickly and efficiently move goods to markets throughout the country is vital to the U.S. economy. As one of the nation's major freight railroad companies, CSX provides a valuable service by facilitating the shipment of goods and services to the general public.

6.3 Proposed Action

The proposed action is to rebuild the existing Virginia Avenue Tunnel and its single railroad track configuration with a new two-track tunnel with the necessary vertical clearance (minimum 21 feet) to allow double-stack intermodal train operations. Two-track means that there would be two separate railroad tracks in the tunnel. Double-stack means that intermodal container trains operating within the tunnel would be able to transport rail cars carrying two vertically stacked intermodal freight containers. These types of containers are among other types of freight rail traffic that use the tunnel, such as coal and other merchandise. The new

tunnel will allow freight trains, including those with double-stack intermodal containers, to move in both directions, simultaneously, if necessary, and enabling more efficient freight movement. This will allow more efficient freight movement, especially in light of expected increases in freight traffic. Reconstructing the tunnel to allow double-stack intermodal container freight trains will require lowering the grade below the rail line's New Jersey Avenue SE Overpass.

6.4 Regulatory Requirements

6.4.1 Key Considerations in Section 4(f)

A Section 4(f) property is any publicly owned land of a public park, recreational area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance.

As noted in 23 CFR § 774.3, Section 4(f) Approvals, a transportation project approved by a U.S. Department of Transportation (U.S. DOT) modal agency (for this Project, FHWA) may not use a Section 4(f) property unless it is determined that:

1. There is no feasible and prudent avoidance alternative, as defined in 23 CFR § 774.17, to the use of land from the property; and
2. The action includes all possible planning, as defined in 23 CFR § 774.17, to minimize harm to the property resulting from such use; or
3. The use of the property, including any measure(s) to minimize harm (such as any avoidance, minimization, mitigation or enhancement measures) committed to, will have a de minimis impact, as defined in 23 CFR § 774.17, on the property.

As defined in 23 CFR § 774.17, the use of a protected Section 4(f) property occurs when any of the conditions below are met:

1. When land [of the Section 4(f) property] is permanently incorporated into a transportation facility;
2. When there is a temporary occupancy of land [of the Section 4(f) property] that is adverse in terms of the [Section 4(f)] statute's preservation purpose as determined by the criteria in 23 CFR § 774.13(d); or
3. When there is constructive use of a Section 4(f) property as determined by the criteria in 23 CFR § 774.15.

The FHWA may determine that the use of Section 4(f) property, including any measure(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) committed to by the applicant, will have a de minimis impact, as defined in 23 CFR § 774.17, on the property. The de minimis impact criteria and associated determination requirements vary by type of Section 4(f) property involved. For example, the use of a historic site may be de minimis if the Administration renders a "no adverse effect" in accordance with Section 106 of the National Historic Preservation Act (NHPA).

A feasible and prudent avoidance alternative avoids using Section 4(f) property and does not cause other severe problems of a magnitude that substantially outweighs the importance of protecting the Section 4(f) property. The feasible and prudent standard applies only to an alternative that fully avoids any use of a Section 4(f) property. It would not apply when choosing among alternatives that require the use of at least one Section 4(f) property. In assessing the importance of protecting the Section 4(f) property, it is appropriate to consider the relative value of the resource to the preservation purpose of the statute.

An alternative is not feasible if it cannot be built as a matter of sound engineering judgment.

An alternative is not prudent if:

- It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
- It results in unacceptable safety or operational problems;
- After reasonable mitigation, it still causes:
  - Severe social, economic, or environmental impacts;
  - Severe disruption to established communities;
  - Severe disproportionate impacts to minority or low income populations; or
  - Severe impacts to environmental resources protected under other Federal statutes;
- It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
- It causes other unique problems or unusual factors; or
- It involves multiple factors that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

All possible planning to minimize harm means that all reasonable measures identified in the Section 4(f) evaluation to minimize harm or mitigate for adverse impacts and effects must be included in the project. With regards to parks or recreational resources, reasonable mitigation measures may involve a replacement of land and/or facilities of comparable value and function, or monetary compensation to enhance the remaining land. With regard to historic sites, reasonable measures normally serve to preserve the historic activities, features, or attributes of the site as agreed by the Administration and the official(s) with jurisdiction over the Section 4(f) resource in accordance with the Section 106 consultation process outlined 36 CFR § 800, Protection of Historic Properties.

If there is no feasible and prudent avoidance alternative and the use is not de minimis, then the FHWA may approve only the alternative that causes the least overall harm in light of the statute's preservation purpose. The least overall harm is determined by balancing the following factors, which are identified in 23 CFR § 774.3(c)(1):

- The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property);
- The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection;
- The relative significance of each Section 4(f) property;

- The views of the official(s) with jurisdiction over each Section 4(f) property;
- The degree to which each alternative meets the purpose and need for the project;
- After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and
- Substantial differences in costs among the alternatives.

If two or more alternatives are "substantially equal" in terms of the least overall harm to the 4(f) property, then FHWA may select any one of the alternatives being considered. Regardless, the alternative selected must include all possible planning to minimize harm to Section 4(f) property, such as compliance with Section 106, as applicable.

An "individual Section 4(f) evaluation must be completed when approving a project that requires the use of Section 4(f) property if the use . . . results in a greater than de minimis impact and a programmatic Section 4(f) evaluation cannot be applied to the situation." (Section 4(f) Policy Paper, July 20, 2012)

6.4.2 Assessing "Use" of Section 4(f) Properties

Section 4.1 briefly described the term "use" in Section 4(f).

The most common form of use is when land is permanently incorporated into a transportation facility. This can occur when land from a Section 4(f) property is either purchased outright as transportation right-of-way or when the applicant for Federal-aid funds has acquired a property interest that allows permanent access onto the property such as a permanent easement for maintenance or other transportation-related purpose.

The second form of use is commonly referred to as temporary occupancy and results when Section 4(f) property, in whole or in part, is required for project construction-related activities. The property is not permanently incorporated into a transportation facility but the activity is considered to be adverse in terms of the preservation purpose of Section 4(f). Section 23 CFR 774.13(d) provides the conditions under which "temporary occupancies of land…are so minimal as to not constitute a use within the meaning of Section 4(f)." If all of the conditions in this section are met, the temporary occupancy does not constitute a use. If one or more of the conditions for the exception cannot be met, then the Section 4(f) property is considered used by the project even though the duration of onsite activities is temporary.

The third and final type of use is called constructive use. A constructive use involves no actual physical use of the Section 4(f) property via permanent incorporation of land or a temporary occupancy of land into a transportation facility. A constructive use occurs when the proximity impacts of a proposed project adjacent to, or nearby, a Section 4(f) property result in substantial impairment to the property's activities, features, or attributes that qualify the property for protection under Section 4(f). As a general matter this means that the value of the resource, in terms of its Section 4(f) purpose and significance, will be meaningfully reduced or lost. The types of impacts that may qualify as constructive use, such as increased noise levels that would substantially interfere with the use of a noise sensitive feature such as a

campground or outdoor amphitheater, are addressed in 23 CFR 774.15. A project's proximity to a Section 4(f) property is not in itself an impact that results in constructive use. Also, the assessment for constructive use should be based upon the impact that is directly attributable to the project under review, not the overall combined impacts to a Section 4(f) property from multiple sources over time.

It should be noted that none of the identified Section 4(f) properties affected by or adjacent to the Project's limit of disturbance (see Sections 6.5 and 6.6) meet the criteria for a constructive use.

6.5 Section 4(f) Properties

Section 4(f) and the implementing regulations in 23 CFR Part 774 define a Section 4(f) property as publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance. A historic site includes any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (National Register).

There are several protected Section 4(f) resources or properties within the limits of disturbance (LOD) of the Project, which are listed below:

- Virginia Avenue Tunnel
- The L'Enfant Plan of Washington DC;
- Capitol Hill Historic District; and
- Virginia Avenue Park.

The LOD refers to all areas where construction will take place, including areas needed for staging, materials stockpiling, utility relocations, and temporary freight train operations. The LOD will be restricted from the general public, except Virginia Avenue's cross streets, which will remain open for public passage throughout construction by means of temporary bridges.

6.5.1 Virginia Avenue Tunnel

Virginia Avenue Tunnel, which is owned by CSX, is eligible for the National Register, and is therefore, considered a Section 4(f) resource. It was originally constructed by the Baltimore & Potomac Railroad in two phases between 1872 and 1904, using a cut-and-cover construction method. The first phase consisted of the portion of the tunnel from 11th Street SE to a location between 7th and 8th Streets SE. The second phase of construction extended the location of the tunnel's west portal by an additional half-mile to 2nd Street SE. Most of the tunnel is an elliptical brick arch with 28 feet clear span (distance inside the tunnel wall to wall). A structural failure occurred in 1985, and 300 feet of tunnel was replaced. The walls are of cut stone masonry ten feet high and eight-and-a-half feet thick. The ceiling is also of brick masonry, with maximum vertical clearance of approximately 18 feet. As noted in Section 6.2, the tunnel structure is approaching the end of reliable service.

6.5.2 L'Enfant Plan of Washington, DC

The L'Enfant Plan of Washington, DC (L'Enfant Plan), which is listed on the National Register, is a Baroque city plan with Beaux Arts modifications designed by Pierre L'Enfant (1792). Roughly bounded by Florida Avenue from Rock Creek NW to 15 Street NE, south to C Street, and east to the Anacostia River, the plan consists of regular orthogonal street grids with numerically and alphabetically designated streets, intersected by diagonal avenues. It also consists of historic and contemporary system of parks and medians. The 1901-02 McMillan Commission recommendations resulted in physical changes to the L'Enfant Plan necessary for urban development. Virginia Avenue SE was identified as part of the L'Enfant Plan.

6.5.3 Capitol Hill Historic District

The Project Area is located within in a small portion in the southeast area of the Capitol Hill Historic District (CHHD) on the south side of I-695. Most of this historic district is located north of I-695. CHHD, which is listed on the National Register, is primarily a residential area with two- to four-story row houses and small frame houses in a variety of architectural styles including Federal, Italianate, Greek revival, Queen Anne, Romanesque revival, and vernacular interpretations. It also includes religious, commercial, institutional and military buildings, as well as parks. The neighborhood began as a boarding house community for members of Congress, and is one of the District's oldest and largest residential communities. CHHD is roughly bounded by the U.S. Capitol; F Street NE and Constitutional Avenue to the north; 14TH, 13th, and 11th streets SE to the east, and including some areas south of I-695 extending to the Washington Navy Yard. CHHD also contains a high number of contributing resources, including Virginia Avenue Park, which is described below.

6.5.4 Virginia Avenue Park

Virginia Avenue Park is owned by the National Park Service (NPS) but maintained and operated by the DC Department of Parks and Recreation (DPR). Not only is Virginia Avenue Park a publicly-owned, public recreational resource, it is also a contributing resource to the CHHD. In 1966, jurisdiction of the park was transferred to the District of Columbia, but the NPS still retains fee title. The 2.63-acre park is located between 9th Street SE and near 11th Street SE and between I-695 and Potomac Avenue SE / L Street SE. It contains the Virginia Avenue Community Garden, a fenced dog area, and passive recreational amenities that include grassy fields, park benches and picnic tables. The community garden offers residents opportunities to grow herbs, vegetables and fruits. Each participating household is limited to two plots.

6.6 Other Section 4(f) Properties

Other Section 4(f) properties adjacent to the Project's LOD include two recreational resources (Garfield Park and, the Marine Corps turf field) and two historic properties (St. Paul AUMP Church and Virginia Avenue Paving). As noted in Section 4.2, the Project will not require the actual or constructive use of these properties. The reasons for this assessment are provided below.

The rights-of-way of Virginia Avenue SE and the adjacent I-695 include half dozen, relatively small triangular-shaped NPS reservations. These properties are not considered Section 4(f) properties because they are either used for transportation purposes (i.e., part of Virginia Avenue SE or the freeway), roadway landscaping, or part of a military installation (Reservation 124 under the jurisdiction of the Marine Corps—see Section 6.6.2). The Virginia Avenue Paving (Site Number 51SE062), which was identified within the LOD at the 11th Street Bridges right-of-way, is not considered a Section 4(f) property because the DC Historic Preservation office will allow the paving to be removed and used at other locations.

6.6.1 Garfield Park

Garfield Park is located between New Jersey Avenue and 3rd Street SE immediately north of I-695, and is under the jurisdiction of DPR. Regardless of the Build Alternative, pedestrian access to Garfield Park from 2nd Street SE on the south side of I-695 will not be available during construction because of the need to relocate the Tiber Creek Intercepting Sewer. This work will be conducted under I-695 in the vicinity of 2nd Street SE. This temporary impact will not be a constructive use of Garfield Park because the park will remain accessible from several other locations from the south side of I-695 and none of these will be affected by the Project. From the south side of I-695, the park is accessible from New Jersey Avenue SE and 3rd Street SE. Fencing will be installed between the construction area under I-695 and Garfield Park to ensure that park users are not exposed to construction activities. The park is used for passive recreation, tennis and volleyball. These activities will be unaffected by construction activities underneath I-695.

6.6.2 Marine Corps Facility Turf Field

The Marine Recreation Facility includes a turf field striped for soccer. The field is primarily used by marines for physical fitness and the Marine Band for practice sessions. However, the Marine Corps allow the field to be available to Sports on the Hill, a volunteer youth sports organization, and other visiting recreational teams and spectators with prior approval by the facility. This level of public access does not qualify the turf field, apart from the larger facility, as a Section 4(f) resource because according to the Section 4(f) Policy Paper, the entire public must be granted access in order for the recreational facility to be considered a Section 4(f) resource. Providing access to a select group (e.g., Sports on the Hill) does not qualify this facility as a Section 4(f) resource. Nevertheless, access to and activities associated with the turf field will not be affected by any of the Build Alternatives. Access is through L Street SE, not Virginia Avenue SE, and fencing between the construction area and the turf field will be installed to ensure that Marines and visitors are not exposed to construction activities. The Marines acquired use of Reservation 124 along Virginia Avenue SE from the NPS, with the stipulation that the view corridor of K Street SE and Virginia Avenue SE between 6th and 7th Streets and the view corridor of 6th Street SE between Virginia Avenue SE and L Street SE will remain free of buildings or structures of any kind. A scenic resource is not necessarily a Section 4(f) resource unless it is a significant historic site. This scenic resource is adjacent to Virginia Avenue SE, which is part of the L'Enfant Plan. Therefore, this scenic resource is evaluated as part of the L'Enfant Plan.

6.6.3 St. Paul AUMP Church

St. Paul AUMP Church is an historic property listed on the National Register. The church is of a Gothic Revival style with gabled asphalt roof, arched windows, crenellated battlements, and a tower. Washington's second licensed African-American architect, R.C. Archer Jr., designed the church. It is the only church in the District that evolved from the oldest incorporated, independent African denomination in the United States. Although the church appears to be structurally sound, it has evidence of damage from water leakage. The LOD under each of the three Build Alternatives will be in the vicinity of the church, but the existing tunnel is located over 100 feet away. Although the Section 106 adverse effect determination was made partially due to the construction proximity effects to the historic character of the church, a Section 4(f) constructive use will not occur because the vibration effects of demolishing the existing tunnel and reconstructing the new tunnel is not expected to migrate to the church site. Nevertheless, the church will be subject to a pre-construction inspection and will be monitored during construction to check if any vibration-causing activity has damaged the structure, and if so, repair the damage at the expense of the Project (see Section 5.7.4).

6.7 Alternatives Considered

Three Build Alternatives are under consideration. They were selected for detailed study in the National Environmental Policy Act (NEPA) process from among 12 concepts that were considered as part of the scoping process. Seven of these concepts involved the rebuilding of the existing Virginia Avenue Tunnel generally along its current alignment but with two railroad tracks and sufficient vertical clearance to allow for double-stacking of intermodal containers (rebuild concepts). Four other concepts would have involved rerouting mainline freight rail traffic out of the Virginia Avenue Tunnel at its present depth and location in lieu of near-term reconstruction of the tunnel (reroute concepts). All four reroute concepts and four of the seven rebuild concepts were eliminated from consideration. However, they were considered as possible alternatives that may avoid the Section 4(f) resources identified in Section 6.5. Concept 1, which was later renamed Alternative 1, is the "no build", which is automatically considered in the Draft Environmental Impact Statement (EIS) as a viable option, and is also used as a point of comparison to evaluate the potential impacts of the Build Alternatives.

6.7.1 Alternative 1, No Build

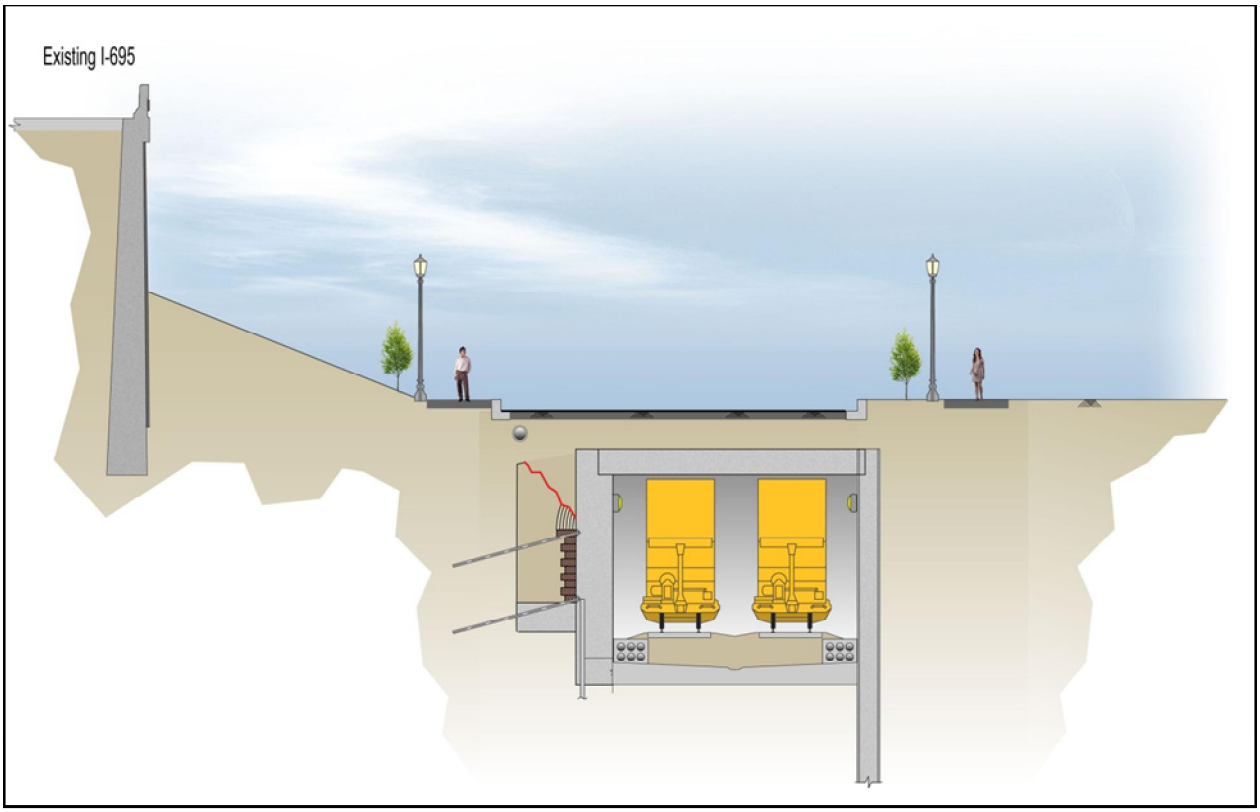
Under Alternative 1, No Build, Virginia Avenue Tunnel would not be rebuilt. The railroad would continue to operate trains through the tunnel, and at some point, emergency or unplanned major repairs or rehabilitation could be required to this critical, aging infrastructure that would probably be disruptive to the surrounding community.

6.7.2 Alternative 2, Rebuilt Tunnel / Temporary Runaround Track

Originally Concept 2, Alternative 2 involves rebuilding the existing Virginia Avenue Tunnel. It would be rebuilt with two railroad tracks and enough vertical clearance to accommodate double-stack intermodal container freight trains. It would be rebuilt in generally the same

location, except aligned approximately seven feet to the south of the existing tunnel center line. It would be rebuilt using protected open trench construction methods. During construction, freight trains would be temporarily routed through a protected open trench outside the existing tunnel (runaround track). The runaround track would be aligned to the south and generally parallel to the existing tunnel, and would be located below street level. Due to new columns associated with the rebuilt 11th Street Bridges, the runaround track would slightly separate from the tunnel alignment on the east end starting just west of Virginia Avenue Park. Safety measures such as securing fencing would be used to prevent pedestrians and bikers from accessing the runaround track. A typical cross section of post-construction Virginia Avenue Tunnel under Alternative 2 between 3rd Street and 9th Street SE is shown on Figure 6-2.

Figure 6-2
Cross Section View of Post-Construction Alternative 2
between 3rd and 9th Streets SE

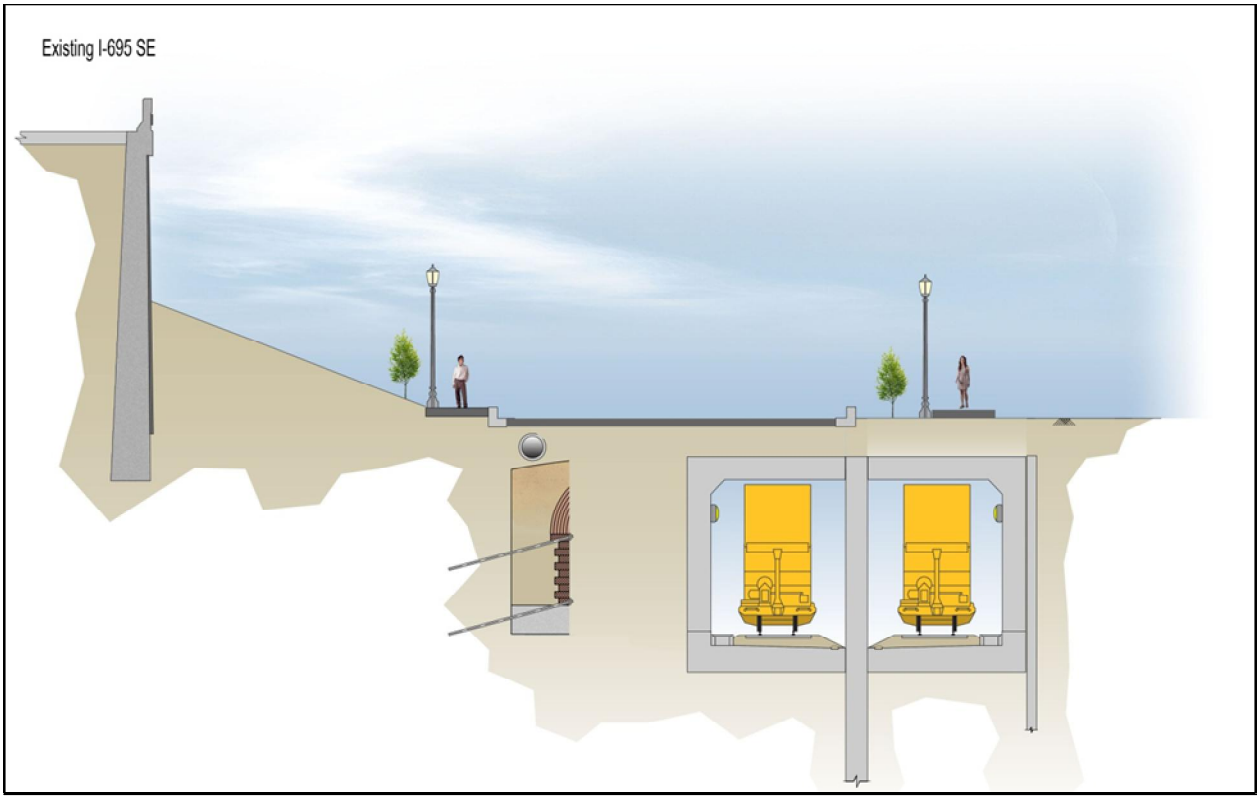


6.7.3 Alternative 3, Two New Tunnels

Alternative 3 was selected as the Preferred Alternative in the Final EIS. Originally Concept 5, Alternative 3 or the Preferred Alternative involves replacing the existing Virginia Avenue Tunnel with two new permanent tunnels. Each tunnel would have a single railroad track with enough

vertical clearance to allow double-stack intermodal container freight trains. A new parallel south side tunnel would be built first as trains continue operating in the existing Virginia Avenue Tunnel. After the south side tunnel is completed, train operations would switch over to the new tunnel and the existing Virginia Avenue Tunnel would be demolished and rebuilt. With the exception of operating in a protected open trench for approximately 230 feet immediately east of the 2nd Street portal (within the Virginia Avenue SE segment between 2nd and 3rd Streets SE), trains would operate in enclosed tunnels throughout construction under the Preferred Alternative. Throughout most of the length of the entire rebuilt tunnel, the two tunnels would be separated by a center wall. This center wall would be the new centerline of the two tunnels, and it would be aligned approximately 25 feet south of the existing tunnel centerline, between 2nd and 9th Streets SE. Due to new columns associated with the rebuilt 11th Street Bridge, the tunnels would be separated on the east end starting just west of Virginia Avenue Park, resulting in two separate single-track tunnels and openings at the east portal. A typical cross section of the two tunnels of the Preferred Alternative between 3rd and 9th Streets SE is shown on Figure 6-3.

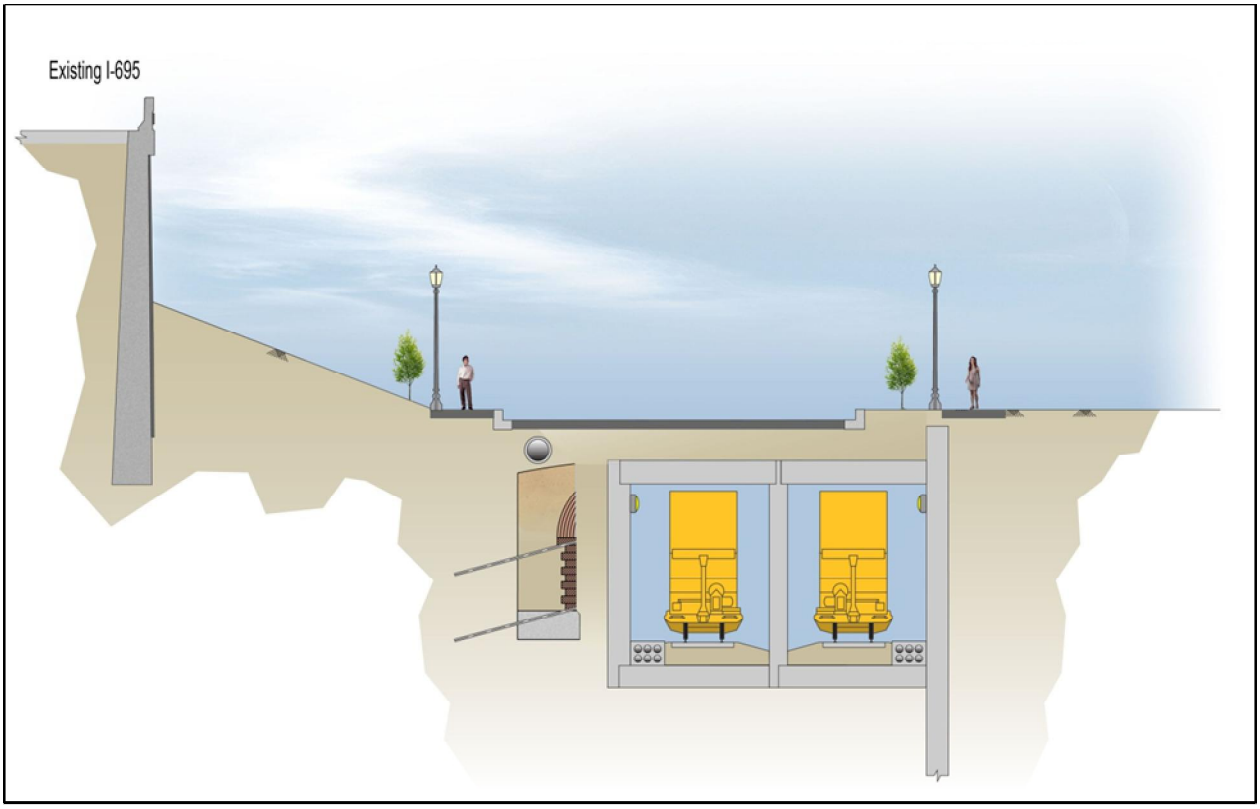
Figure 6-3
Cross Section View of Post-Construction Preferred Alternative
between 3rd and 9th Streets SE



6.7.4 Alternative 4, New Partitioned Tunnel / Online Rebuild

Originally Concept 6, Alternative 4 would result in a new tunnel with two permanent tracks. Similar to the Preferred Alternative, the new tunnel would be partitioned and have enough vertical clearance to allow double-stack intermodal container freight trains. It would be aligned approximately 17 feet south of the existing tunnel's centerline. The new tunnel would be built using protected open trench construction methods. The rebuild would occur 'online' meaning that during the period of construction, the protected open trench would accommodate both construction activities and train operations. Maintaining safe and reliable temporary train operations is a more complicated endeavor under Alternative 4 than under the other two Build Alternatives because of the online rebuild approach. A typical cross section of post-construction Virginia Avenue Tunnel under Alternative 4 between 3rd and 9th Streets is shown on Figure 6-4.

Figure 6-4
Cross Section View of Post-Construction Alternative 4
between 3rd and 9th Streets SE



6.8 Impacts on Section 4(f) Properties

This section describes the Project's potential impacts to the four Section 4(f) resources described in Section 6.5. Any differences among the Build Alternatives are noted. Regardless of the Build Alternative, the Project will require the demolition of existing Virginia Avenue Tunnel. It will also require construction-period occupancy of Virginia Avenue Park and relatively small portions of the L'Enfant Plan and Capitol Hill Historic District due to the proposed limits of disturbance (LOD). As noted in this section, the affected areas of these Section 4(f) resources will be restored at the conclusion of construction.

6.8.1 Virginia Avenue Tunnel

The Section 4(f) "use" will involve the demolition of the tunnel in order to accomplish its reconstruction. The demolition and rebuilding of the tunnel will constitute a permanent incorporation into a reconstructed transportation facility and will therefore be a "use" within the meaning of 23 CFR 774.17. An "adverse effect" determination in accordance with the National Historic Preservation Act Section 106 process was rendered for the Project by the FHWA on September 10, 2013 due in part to the required demolition of the tunnel under all three Build Alternatives. The DC State Historic Preservation Officer (SHPO) concurred with the adverse effect determination on October 10, 2013. As the result of the Section 106 adverse effect, the Section 4(f) "use" will not be considered de minimis. The reconstruction of the Virginia Avenue Tunnel will also not qualify for an exception from Section 4(f) under 23 CFR 774.13(a)(1) in that the tunnel will be completely rebuilt, not merely restored, rehabilitated or maintained with its potential historic qualities preserved.

Under Alternative 1, the No Build, the tunnel would eventually need to be rebuilt or undergo major rehabilitation. Even with CSX's active maintenance and inspection program, a major structural deficiency similar to what occurred in 1985 could possibly materialize over the next few decades due to the continued aging of the tunnel's masonry structure. This event would be "unplanned" and result in emergency construction that may likely require at least a partial demolition of the tunnel.

6.8.2 L'Enfant Plan of Washington, DC

The Section 4(f) "use" of the L'Enfant Plan will involve temporary longitudinal trenching on a L'Enfant Plan identified street -- Virginia Avenue SE -- during the period of construction, which will be required for each of the three Build Alternatives. As Alternative 4 does not include a runaround track (as in Alternative 2) or a new south side tunnel with the same alignment as the runaround track (as in the Preferred Alternative), its LOD along Virginia Avenue SE would be a few feet narrower. The trenching work on Virginia Avenue SE will not qualify for a temporary occupancy exception from Section 4(f) as defined under 23 CFR 774.13(d) because the temporary occupancy of the land will not be minimal and the scope of construction work will not be minor. However, Virginia Avenue SE will be restored to a condition at least as good as that which existed prior to construction, and CSX has committed to making enhancements and upgrades to the street.

The FHWA NHPA Section 106 adverse effect determination was rendered in part due to the extended duration of temporary trenching of a L'Enfant Plan street (Virginia Avenue SE). Therefore, the Section 4(f) "use" will not be considered a de minimis impact. The trenching needed by the Build Alternatives will not be minor and the use will be adverse within the meaning of de minimis impact contained in 23 CFR 774.17.

6.8.3 Capitol Hill Historic District

The LOD occupies a relatively small section of the Capitol Hill Historic District (CHHD). It is within Virginia Avenue Park, a contributing resource to the CHHD. Each Build Alternative requires construction-period occupancy of a portion of the Virginia Avenue Park because the park was established above the tunnel. The scope of work, although temporary, will not be minor in that local residents will not be able to make use of the affected area of the park during construction on that segment of the Project.

The Project will involve the "use" of the park (both as an historic property and a recreational resource) as a 4(f) property within the meaning of 23 CFR 774.17. The "use" will be construction-period occupancy of the park, which may require an approval from the NPS. The FHWA NHPA Section 106 adverse effect determination was rendered in part due to the construction-period occupancy of the park.

Notably, the temporary construction-period occupancy of the park will not qualify for an exception of Section 4(f) requirements in accordance with 23 CFR 774.13(d). In addition, the Section 4(f) "use" of the CHHD will not be considered a de minimis impact because a Section 106 "adverse effect" determination was rendered in part due to the construction impacts on the park as a contributing historic resource to CHHD. Occupancy of the park for construction and temporary rail operations would vary depending on the Build Alternative.

While all of the Build Alternatives will temporarily use a portion of the park during construction, the Preferred Alternative and Alternative 2 will use a slightly larger portion of the park than Alternative 4 (1.76 acres versus 1.46 acres). Under all of the Build Alternatives, a large swath of open grassy field and the fenced dog area will not be available during construction. The Virginia Avenue Community Garden will not be displaced by construction under any of the Build Alternatives. The garden will remain open during construction for users. The park benches and picnic tables in the park near Potomac Avenue SE will not be displaced. Temporary construction activities could be perceived as substantially reducing the experience of garden users and park visitors.

The park will be fully returned to a condition at least as good as that which existed prior to the construction, and CSX has committed to provide enhancements and upgraded amenities.

6.8.4 Virginia Avenue Park

The Project's Section 4(f) "use" of Virginia Avenue Park as an individual recreational resource will be the same as the "use" of the park as a contributing resource to the CHHD (see Section

6.8.3). This use of the park as a recreational facility will not be de minimus because the temporary use will adversely affect the recreational features, attributes, and activities that qualify the park from protection under Section 4(f).

6.9 Evaluation of Section 4(f) Use

The use of each of the four Section 4(f) properties identified in Section 5 was evaluated to:

1. Determine if any use would be de minimus;
2. Determine whether there is any feasible and prudent avoidance alternative to the use of land from the Section 4(f) property;
3. If there were no feasible and prudent avoidance alternative, determine which of the alternatives described in Section 7 would result in the least overall harm to the Section 4(f) property; and
4. Identify the planning and actions to be taken to minimize harm to the property resulting from the Section 4(f) use.

6.9.1 Avoidance Alternatives Considered

In the initial phases of project development, 12 concepts were developed and analyzed to determine whether they would meet the Project's Purpose and Need. These concepts were based on a preliminary assessment of the engineering and physical constraints along the alignment of the existing tunnel, and input from federal and District of Columbia agencies, interested parties and the general public. These 12 preliminary concepts include:

- Concept 1, the no action or no build condition;
- Concepts 2 through 7 (includes a Concept 3A or seven total concepts under this category) involve the reconstruction of Virginia Avenue Tunnel; and
- Concepts 8 through 11 involve rerouting the main rail line outside of the existing Virginia Avenue SE, but the tunnel would remain to service Washington Metropolitan Area regional customers.

Because Concept 1 is the no build condition, it was later renamed as Alternative 1 and would be automatically carried through EIS process. By definition, Alternative 1 would avoid the use of Section 4(f) properties, and in particular, it would not require the immediate demolition of Virginia Avenue Tunnel, but it would also not meet the Purpose and Need of the Project. For example, it would not resolve the deficiencies of the existing tunnel.

Concepts 2 through 7 all require demolishing the existing tunnel in order to reconstruct a new two railroad track tunnel, and require trenching and other construction along Virginia Avenue SE, a street identified in the L'Enfant Plan, and Virginia Avenue Park, a recreational resource and a contributing resource to the CHHD. Therefore, none of them would be considered a potential avoidance alternative. These rebuild concepts are:

- Concept 2: Rebuild, Temporary South Side Runaround
- Concept 3: Rebuild, Temporary North Side Runaround

- Concept 3A: Rebuild, Permanent Two Tunnels (New Tunnel on North Side of Existing Virginia Avenue Tunnel)
- Concept 4: Rebuild, Temporary Combination Runaround
- Concept 5: Rebuild, Permanent Two Tunnels (New Tunnel on South Side of Existing Virginia Avenue Tunnel)
- Concept 6: Rebuild with On-Line Construction
- Concept 7: Rebuild, Temporary Reroute

As noted in Section 6.7, Concepts 2, 5 and 6 were selected for further evaluation and were developed as the Preferred Alternative (Concept 5) and Alternatives 2 (Concept 2) and 4 (Concept 6).

Concepts 8 through 11 would avoid use of all Section 4(f) resources identified in Section 6.5. In addition to Concept 1/Alternative 1, the reroute concepts identified below were evaluated as potential feasible and prudent alternatives to avoid the Section 4(f) use of Virginia Avenue Tunnel, the L'Enfant Plan, CHHD and Virginia Avenue Park:

- Concept 8: Reroute, Deep Bore Tunnel
- Concept 9: Reroute, Indian Head Alignment
- Concept 10: Reroute, Dahlgren Alignment
- Concept 11: Permanent Reroute

6.9.1.1 Concept 1/Alternative 1 – No Build

Concept 1 or Alternative 1, the no build alternative; would not address the Project's Purpose and Need as described in Section 6.2. Alternative 1 would not address the deficiencies of operational and structural deficiencies of Virginia Avenue Tunnel, nor would it prepare for anticipated increases in freight transportation demand. Therefore, Alternative 1 is not a prudent avoidance alternative.

6.9.1.2 Concept 8 – Reroute, Deep Bore Tunnel

Concept 8 would involve construction of a nine-mile long tunnel stretching from Alexandria, VA to Deanwood, near the eastern border between the District and Maryland. Concept 8 is estimated to cost at least $2 billion. In comparison, the costs for the non-avoidance Build Alternatives are estimated to range from $168 to $208 million. In addition, Concept 8 would not address the structural deficiency of the existing tunnel, which would remain open under this concept in order to serve local customers. Therefore, in consideration of Concept 8's cost of extraordinary magnitude, and because it would not fully address the Project's Purpose and Need, Concept 8 is not a prudent avoidance alternative.

6.9.1.3 Concept 9 – Reroute, Indian Head Alignment and Concept 10 - Reroute, Dahlgren Alignment

Concepts 9 and 10 would require dozens of miles of new and expanded railroad tracks and a new bridge over the Potomac River, which would result in environmental impacts such as the

visual effects of a new bridge and potential losses of riparian habitat. The National Capital Planning Commission (NCPC), which introduced Concepts 9 and 10 in an earlier study, estimated these concepts would cost between $3.2 to 4.2 billion and $3.5 and 4.7 billion, respectively. In comparison, the costs for the non-avoidance Build Alternatives are estimated to range from $168 to $208 million. Like Concept 8, Concepts 9 and 10 would not address the structural deficiency of the existing tunnel even though the tunnel would remain open for local customers. Therefore, in consideration of Concept 9 and 10's costs of extraordinary magnitude, and because they would not fully address the Project's Purpose and Need, Concepts 9 and 10 are not prudent avoidance alternatives.

6.9.1.4 Concept 11 – Permanent Reroute

Concept 11 would require several hundreds of miles of new and expanded railroad tracks within several states along the eastern seaboard and Midwest. Although no cost estimate was made, Concept 11 would be even more expensive than Concepts 8, 9 and 10 as it would require substantial investments to expand rail corridors stretching from Georgia to Pennsylvania and Ohio. Similar to Concepts 8 through 10, Concept 11 would not address the structural deficiency of the existing tunnel. Therefore, in consideration of Concept 11's cost of extraordinary magnitude, and because it would not fully address the Project's Purpose and Need, Concept 11 is not a prudent avoidance alternative to avoid the Section 4(f) use of Virginia Avenue Tunnel.

6.9.2 Least Overall Harm

6.9.2.1 Analysis

There is no feasible and prudent alternative that avoids the use of Section 4(f) resources. Therefore, it must then be determined which of the three remaining Build Alternatives (the Preferred Alternative and Alternatives 2 and 4) would cause the least harm based on seven factors identified in 23 CFR 774.3(c)(1), which are listed in Section 6.4.1. Also noted in Section 6.4.1 is that only the alternative that causes the least overall harm may be approved. If two or more alternatives are substantially equal in terms of harm to the 4(f) property(ies), any one of these alternatives may be selected.

The use of each Section 4(f) resource was evaluated separately to determine which alternatives would result in the least harm to that particular resource. Use of the four Section 4(f) resources were then evaluated as a group to determine which alternative would result in the least overall harm to all four properties collectively.

The analysis herein provided considered proposed mitigation measures and the severity and location of the Section 4(f) use among the three Build Alternatives. As noted in Section 6.5, Virginia Avenue Tunnel, the L'Enfant Plan, and the CHHD are historic resources, and in addition to Section 4(f), are protected under Section 106. The Section 106 consultation process was used to inform minimization planning and mitigation.

Factor 1: The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property).

The Preferred Alternative and Alternatives 2 and 4 would all result in the demolition and replacement of Virginia Avenue Tunnel. As noted in Section 6.8.1, an adverse effect determination in accordance with Section 106 was rendered, and therefore, a Memorandum of Agreement (MOA) was prepared to resolve, among other things, the adverse effect from the demolition of the existing tunnel. The MOA includes mitigation measures to address the demolition of the tunnel, including a construction protection plan for nearby known historic structures; formal recordation of the existing tunnel's historic characteristics in accordance with Historic American Engineering Records and Historic American Buildings Survey (HAER/HABS) standards; installation of interpretive signs or plaques at publicly accessible areas noting the history of the tunnel and Virginia Avenue SE; donating of original stone serving as the western portal to eligible entities, including Friends of Garfield Park; establishing a fund to be used for assisting eligible individuals or organizations seeking to conduct exterior preservation projects or historic education; nominating Control Point (CP) Virginia, an inactive switching tower located at 2nd Street SW adjacent to the CSX rail line, to the District and National Registers; conducting exterior rehabilitation of CP Virginia; preparing a determination of eligibility (DOE) for Virginia Avenue Paving (51SE062) by a qualified archaeologist; investigating the possible presence of additional Virginia Avenue Paving along cross streets of Virginia Avenue SE between 2nd and 11th Streets; making sure removal of the paving stones shall not be undertaken prior to review and approval of a work plan; and restoring Virginia Avenue SE and Virginia Avenue Park to at least their pre-construction conditions.

The Project's impact to the L'Enfant Plan that results in a Section 4(f) use is the need for temporary longitudinal trenching along Virginia Avenue SE. Although the nature of the trenching among the three Build Alternatives would vary, all three will require the closure of Virginia Avenue SE between 2nd and 9th Streets SE for substantial periods of time. Despite the differences in trenching among the Build Alternatives, the construction mitigation measures will be almost identical, with the only difference being the timing of certain maintenance of traffic (MOT) measures. The MOA includes additional mitigation measures identified above to address the Section 106 adverse effects from the use of Virginia Avenue SE and subsequently the L'Enfant Plan as well as the effects from the use of other historic resources. All of the MOA measures will apply regardless of the Build Alternative.

The reason for the Section 4(f) use of the CHHD and Virginia Avenue Park is very similar to the reason for the use of the L'Enfant Plan--trenching lasting dozens of months within the park--which will temporarily close a large portion of the park to the general public. Again, despite the differences in trenching among the three Build Alternatives, construction mitigation, which involves construction noise and dust control measures among other things, and the Section 106 mitigation measures, which are summarized above, will be largely the same among the Build Alternatives.

Conclusion

For Factor 1, all of these mitigation measures will apply regardless of the Build Alternative. Therefore, the ability to mitigate adverse impacts to the Section 4(f) resources is equal for all Build Alternatives.

Factor 2: The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection.

The Build Alternatives will result in similar impacts on the four protected Section 4(f) resources identified in Section 6.5. For example, each of the Build Alternatives will result in the demolition and replacement of Virginia Avenue Tunnel. Upon demolition of the tunnel, the attributes and features that qualify it for protection will no longer exist. Regardless of the Build Alternative selected, mitigation measures as defined in the MOA will be implemented to lessen the severity of the harm to this resource.

The impacts to the L'Enfant Plan, CHHD, and Virginia Avenue Park will be temporary, and although they constitute a Section 4(f) use, the conclusion of construction allows for the complete restoration of these resources as noted in Section 6.8. As a matter of engineering, the Build Alternatives, as described in Section 6.7, have been developed to emphasize engineering feasibility and minimize disruption to the community affected.

The Build Alternatives differ in three important aspects. First, the LOD or temporary construction area for Alternative 4 would be slightly narrower or smaller than the Preferred Alternative or Alternative 2, which have the same LOD and construction area. Secondly, the Preferred Alternative or Alternative 2 will be constructed more quickly than Alternative 4. Additionally, the Preferred Alternative will operate freight trains within a tunnel throughout construction, except for a 230-foot section immediately east of the 2nd Street portal. This open trench will end west of 3rd Street SE. Under Alternatives 2 and 4, freight trains would operate within an open, but protected, trench along the entire limits of the tunnel, between 2nd and 11th Streets SE.

The narrower LOD under Alternative 4 is not significant in terms of least harm to L'Enfant Plan because the difference is just a few feet. In Virginia Avenue Park, Alternative 4's temporary construction area is smaller than what is needed for the Preferred Alternative or Alternative 2, primarily because of the need to split the tunnel beginning on the west side of the park for both the runaround track (Alternative 2) and the new south side tunnel (the Preferred Alternative). All three Build Alternatives avoid displacing the community garden and park benches along Potomac Avenue SE.

The Preferred Alternative and Alternative 2 will require between 30 and 42 months for construction (same for construction within Virginia Avenue Park), whereas Alternative 4 would require 54 to 66 months of construction (38 to 54 months for construction within Virginia Avenue Park). The Section 4(f) use of the L'Enfant Plan and Virginia Avenue Park will therefore

be shorter under the Preferred Alternative or Alternative 2 than under Alternative 4, which is an important difference due to community concerns about construction duration.

The third difference is pertinent to the Section 4(f) use of Virginia Avenue Park. Under the Preferred Alternative, at no time will trains be operating in an open trench in the park. Under Alternatives 2 and 4, trains would operate in an open trench throughout most of the construction duration, and these areas would need to be kept secured from the general public for safety reasons.

Conclusion

The Build Alternatives will result in very similar impacts, including those on the four Section 4(f) properties. With the exception of impacts on Virginia Avenue Tunnel, all the uses of and impacts on 4(f) properties are temporary and will occur only during the Project's construction period. However, the Preferred Alternative will result in less severe remaining harm after mitigation on the basis that it has a shorter construction period than Alternative 4 and that it enables freight rail operations to continue within an enclosed tunnel within Virginia Avenue Park and along much of Virginia Avenue SE, unlike Alternatives 2 and 4.

Factor 3: The relative significance of each Section 4(f) property.

The parties with jurisdictional authority over the Section 4(f) properties, which includes DC SHPO, NPS and DPR, have not communicated information on relative significance of each of those properties in comparison to one another. Nevertheless, because the three Build Alternatives will all require use of the same Section 4(f) properties in nearly the same amounts, the fact that one or more of them may be relatively more significant is immaterial for the purposes of identifying the least harm alternative.

Factor 4: The views of the official(s) with jurisdiction over each Section 4(f) property.

Agencies or organizations with jurisdiction over the four affected Section 4(f) resources include the DC SHPO for Virginia Avenue Tunnel, the L'Enfant Plan and CHHD, and NPS and DPR for Virginia Avenue Park. Although a Draft EIS was available for agency and public review, none of the other organizations with jurisdiction over the affected Section 4(f) properties have stated a preference for an alternative. The SHPO did concur with the Section 106 adverse effect determination by FHWA. In addition, SHPO, NPS and DPR have concurred with the mitigation measures stipulated by the MOA.

Conclusion

In the absence of views from the organizations with jurisdiction over the affected Section 4(f) properties, the conclusion is that all three Build Alternatives are equal in terms of Factor 4.

Factor 5: The degree to which each alternative meets the purpose and need for the project.

Upon completion and regardless of the Build Alternative, the rebuilt Virginia Avenue Tunnel will meet the freight rail transportation needs over the next several decades. All three Build Alternatives will provide adequate provisions to maintain freight rail operations throughout construction. However, there are greater risks of service disruptions under Alternative 4 because temporary train operations and reconstruction of the tunnel would occur within the same trench.

Conclusion

While the Build Alternatives are largely equal, Alternative 4 would involve the risk of potential disruptions to rail service during the construction. Therefore, the Preferred Alternative and Alternative 2 will meet the purpose and need of the project to a slightly higher degree than Alternative 4.

Factor 6: After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f).

During construction, the LOD is limited to Virginia Avenue SE, Virginia Avenue Park, other public right-of-way associated with the 11th Street Bridges, CSX rail right-of-way and the Marine Corps Recreation Facility. No recreational elements of the Marine Corps facility would be affected. All of these properties will be restored to at least pre-construction conditions at the end of construction. In addition, the construction period impacts to air quality and noise conditions would largely be the same regardless of the Build Alternative, and none of the Build Alternatives would affect water resources, such as wetlands. When construction is completed, and the rebuilt Virginia Avenue Tunnel becomes fully operational, the LOD and the surrounding areas (both Section 4(f) and non-Section 4(f) resources) will revert back to the environmental and streetscape conditions that existed prior to construction. The Project is essentially rebuilding existing transportation infrastructure.

Conclusion

For Factor 6, the Build Alternatives are equal.

Factor 7: Substantial differences in costs among the alternatives.

The costs for the Preferred Alternative and Alternative 2 would be similar at approximately $168 and $175 million, respectively. At approximately $208 million, the cost for Alternative 4 would be approximately 24 and 20 percent higher than the Preferred Alternative and Alternative 2, respectively. One of the major factors affecting the higher cost of Alternative 4 is the more complicated construction phasing / temporary freight rail operations, which would also substantially extend the construction duration.

Conclusion

For Factor 7, Alternative 4 will have a substantially higher cost than the Preferred Alternative or Alternative 2.

6.9.2.2 Least Overall Harm Conclusion

To summarize the least harm analysis of the Build Alternatives:

- Factor 1: The ability to mitigate adverse impacts is equal for all Build Alternatives.
- Factor 2: The Preferred Alternative will result in less severe remaining harm after mitigation on the basis that it has a shorter construction period than Alternative 4 and that it enables freight rail operations to continue within an enclosed tunnel within Virginia Avenue Park and along much of Virginia Avenue SE, unlike Alternatives 2 and 4.
- Factor 3: All Build Alternatives are equal.
- Factor 4: All Build Alternatives are equal.
- Factor 5: The Preferred Alternative and Alternative 2 will meet the purpose and need of the Project to a slightly higher degree than Alternative 4 because Alternative 4 would involve the risk of potential disruptions to rail service during construction.
- Factor 6: All Build Alternatives are equal.
- Factor 7: Alternative 4 has a substantially higher cost than the Preferred Alternative or Alternative 2.

The Preferred Alternative will have the least overall harm to the affected Section 4(f) properties on the basis that: (i) it involves a substantially shorter construction period than Alternative 4; (ii) it enables freight rail operations to continue within an enclosed tunnel within Virginia Avenue Park and along much of Virginia Avenue SE, unlike Alternatives 2 and 4; and (iii) it costs substantially less than Alternative 4.

6.9.3 Planning and Measures to Minimize Harm

Virginia Avenue Tunnel, the L'Enfant Plan and CHHD qualify as Section 4(f) properties because they are also historic properties. An historic property is any district, site, building, structure or object that is on or eligible for listing on the National Register. NHPA Section 106 requires federal agencies, such as FHWA, to take into account the effects of their undertakings or actions on historic properties. The federal approvals needed to allow the Project to proceed are considered as federal undertakings or actions.

The Section 106 process requires that the federal agency first determine whether the undertaking could affect historic properties. If so, the federal agency must consult with the SHPO and others, which may involve the public and consulting parties (those with a particular interest in historic preservation). If not, the federal agency would have no further Section 106 obligations with respect to the undertaking by rendering a "no historic properties affected" determination. If historic properties are affected, the federal agency would render either an "adverse effect" or "no adverse effect" determination.

The Section 106 process for the Project was formally initiated on November 4, 2011, and involved four consulting parties meetings. A Section 106 "adverse effect" determination for the Project was rendered partially due to the required demolition of Virginia Avenue Tunnel and the temporary construction impacts to a L'Enfant Plan street (Virginia Avenue SE) and a contributing resource to the CHHD (Virginia Avenue Park). The results of the Section 106 consultations for the Project informed the Section 4(f) evaluation by:

- Obtaining the views of the SHPO, the official with jurisdiction over Virginia Avenue Tunnel and the L'Enfant Plan;
- Identifying the measures to minimize harm that could preserve the historic activities, features, or attributes of Virginia Avenue Tunnel and the L'Enfant Plan in consultation with the SHPO and CSX in accordance with the consultation process under 36 CFR part 800; and
- Understanding whether the measures to minimize harm to Virginia Avenue Tunnel and the L'Enfant Plan would result in any impacts or benefits to the surrounding community or environmental resources outside of the Virginia Avenue Tunnel corridor.

In addition to being a contributing resource to the CHHD, Virginia Avenue Park is also a public park and recreational facility, which qualifies it as a Section 4(f) property. The officials with jurisdiction over Virginia Avenue Park, a recreational resource, are the NPS and DPR. To initiate discussion to determine measures to minimize harm to Virginia Avenue Park, as a recreational resource, coordination with NPS has been conducted throughout the NEPA process. This included NPS's role as a cooperating agency, NPS participation in six agencies meetings held to date, and a meeting with NPS National Capital Parks-East (the NPS park agency with direct oversight over the park) to discuss the approvals needed to allow construction. In addition, a meeting with DPR was held to date to discuss District level approvals needed to allow construction in the park.

Regardless of the Build Alternative, mitigation measures to address the adverse effects to Virginia Avenue Tunnel were identified and outlined in a MOA prepared in accordance with Section 106. The MOA mitigation measures were subject to input from the SHPO and the consulting parties. The measures to minimize harm to Virginia Avenue Tunnel in the MOA includes a construction protection plan for nearby known historic structures; formal recordation of the existing tunnel's historic characteristics in accordance with Historic American Engineering Records and Historic American Buildings Survey (HAER/HABS) standards; installation of interpretive signs or plaques at publicly accessible areas noting the history of tunnel and Virginia Avenue SE; donating of original stone serving as the western portal to eligible entities, including Friends of Garfield Park; establishing a fund to be used for assisting eligible individuals or organizations seeking to conduct exterior preservation projects or historic education; nominating CP Virginia to the District and National Registers; conducting exterior rehabilitation of CP Virginia; preparing a DOE form for Virginia Avenue Paving (51SE062); investigating the possible presence of additional Virginia Avenue Paving along cross streets of Virginia Avenue SE between 2nd and 11th Streets; and restoring Virginia Avenue SE and Virginia Avenue Park to at least their pre-construction conditions.

Once the construction of the Project is concluded, traffic (including pedestrians and bicyclists) will be restored on Virginia Avenue SE. In addition, the Project will provide the following improvements to Virginia Avenue SE streetscape between 2nd and 9th Streets SE (see Section 3.6):

- New shared use bike paths connecting Garfield and Virginia Avenue Parks;
- Street alignment straightening between 4th and 5th/6th Streets SE (currently, the alignment bows to the south, deviating from the original L'Enfant Plan alignment);
- Additional landscaped green spaces, in particular between 4th and 5th/6th Streets;
- Widened and additional sidewalks, such as new sidewalks on the north side of Virginia Avenue between 7th and 8th Streets;
- Reduction of lanes between 5th/6th and 8th Streets to encourage lower speeds;
- Provision of additional on-street parking where appropriate; and
- Improved street lighting, traffic signals and crosswalks.

DDOT and the project sponsor, CSX, will conduct outreach with the community and other stakeholders to plan the specifics of these enhancements.

At the conclusion of construction, the Project will completely restore Virginia Avenue Park with additional amenities, such as a new dog park. Additional improvements, including landscaping, will be determined through consultation with NPS, DPR and the community.

The Project's complete Section 106 consultation process and other related Section 4(f) coordination activities, which has informed the Section 4(f) evaluation regarding the minimization of harm to the Virginia Avenue Tunnel, the L'Enfant Plan, the CHHD and Virginia Avenue Park, is fully disclosed in the Final EIS. The Final Section 4(f) Evaluation's measures to minimize harm are based, in part, upon the conclusion of the Section 106 consultation. A copy of the signed MOA is provided in Appendix A.

6.10 Agency Coordination

The NPS, DPR, NCPC, the Commission on Fine Arts, District Office of Planning, the U.S. Marine Corps, the U.S. Department of Navy, the Advisory Council for Historic Preservation (ACHP), the DC SHPO, and other interested stakeholders, such as the Capitol Hill Restoration Society and the Virginia Avenue Community Garden, participated as Section 106 consulting parties. The NPS is also a NEPA Cooperating Agency on the Draft EIS. In addition, dozens of briefings were held with a number of agencies, and Project interagency meetings were held. A summary of the agency coordination activities is provided in Table 6-1. To date, the SHPO, NPS, DPR, the Marine Corps or other agency have not stated a preference for an alternative. Coordination among the FHWA, DDOT, SHPO, NPS, DPR, FRA, NCPC, U.S. Marine Corps, and other stakeholders, consulting and interested parties will continue.

6.11 Section 4(f) Conclusion

Four Section 4(f) properties will be affected by the reconstruction of the Virginia Avenue Tunnel project. They are: (1) Virginia Avenue Tunnel; (2) the L'Enfant Plan; (3) the Capitol Hill Historic District; and (4) the Virginia Avenue Park. With the exception of the Section 4(f) "use" by incorporation of the existing Virginia Avenue Tunnel, all other Section 4(f) "uses" will occur during the construction period. At the conclusion of the construction, all surface areas, including the affected Section 4(f) properties, will be restored to at least their pre-construction conditions.

Table 6-1
Summary of Agency Coordination Activities

Date	Agency	Form	Purpose/Results
October 6, 2010	Various-Interagency	Meeting	Briefing on CSX projects in the District and obtained project input
July 28, 2011	Various-Interagency	Meeting	Obtained NEPA scoping comments
August 11, 2011	DC Fire and Emergency Medical Services Department	Letter	Obtained NEPA scoping comments
August 19, 2011	U.S. Environmental Protection Agency, Region III	Email	Obtained NEPA scoping comments
August 23, 2011	DC Department of Housing and Community Development	Letter	Obtained NEPA scoping comments
September 6, 2011	NCPC	Letter	Obtained NEPA scoping comments
September 8, 2011	DC SHPO	Letter	Obtained NEPA scoping comments
November 16, 2011	Various-Interagency	Meeting	Obtained input on Project concepts
November 22, 2011	DC SHPO	Letter	Section 106 initiation and comments
February 14, 2012	Various, including community organizations	Meeting	Section 106 consulting parties meeting #1: Project introduction
March 15, 2012	Various-Interagency	Meeting	Concepts screening process
March 21, 2012	DC SHPO	Meeting	Section 106 Area of Potential Effects (APE)
May 8, 2012	Various-Interagency	Meeting	Concepts evaluation
May 21, 2012	Various, including community organizations	Meeting	Section 106 consulting parties meeting #2: identification of historic properties in APE

Table 6-1 (continued)
Summary of Agency Coordination Activities

Date	Agency	Form	Purpose/Results
September 11, 2012	Various-Interagency	Meeting	Briefing on fourth public meeting
September 12, 2012	DC SHPO	Meeting	Preliminary effect determinations
September 26, 2012	Various, including community organizations	Meeting	Section 106 consulting parties meeting #3: preliminary effect determinations
January 10, 2013	DC SHPO	Meeting	Discussion on potential mitigation measures
February 12, 2013	DPR	Meeting	Information on approvals to allow construction in Virginia Avenue Park
February 12, 2013	NPS National Capital Parks-East	Meeting	Information on approvals to allow construction in Virginia Avenue Park
July 30, 2013	Various-Interagency	Meeting	Briefing on Draft EIS and public hearing
September 10, 2013	DC SHPO and Advisory Council on Historic Preservation	Meeting	Section 106 mitigation measures
November 5, 2013	Various-Interagency	Meeting	Preferred Alternative Discussion
February 25, 2013	DC SHPO, Marine Corps, NCPC, NPS and DPR	Meeting	Section 106 MOA

There is no feasible and prudent alternative, as defined in 23 CFR 774.17, to the "use" of land from the Virginia Avenue Tunnel, and the construction-period occupancy of the L'Enfant Plan, Capitol Hill Historic District, and Virginia Avenue Park. The Project includes all possible planning, as defined in 23 CFR 774.17, to minimize harm to Section 4(f) properties resulting from such "use". The project sponsor, CSX, has committed to improve the function and appearance of Virginia Avenue SE and provide additional amenities at Virginia Avenue Park as part of the Project as a community benefit, and will work with the agencies with jurisdiction over these properties (DC SHPO, NPS and DPR) to identify such measures to minimize or mitigate harm and enhance the properties, as appropriate. CSX will also work with FHWA, DDOT, the community and other stakeholders to identify the appropriate enhancements and amenities.

A final determination of the least overall harm alternative in light of preservation purpose of Section 4(f) was made by balancing the factors considered in Section 6.9.2 and the comments made by the agencies and the public. The Preferred Alternative was found to have the least overall harm to Section 4(f) properties among the Build Alternatives.

As it has the least overall harm to the Section 4(f) properties, Alternative 3 was selected as the Preferred Alternative.