IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

THE COMMITTEE OF 100 ON THE FEDERAL CITY	)
Plaintiff	)
v.	)
ANTHONY FOXX, Secretary of Transportation, et al.	)
Defendants	)

PLAINTIFF'S MOTION FOR A PRELIMINARY INJUNCTION

EXHIBIT 2

Chapter 1
Introduction

Chapter 1
Introduction

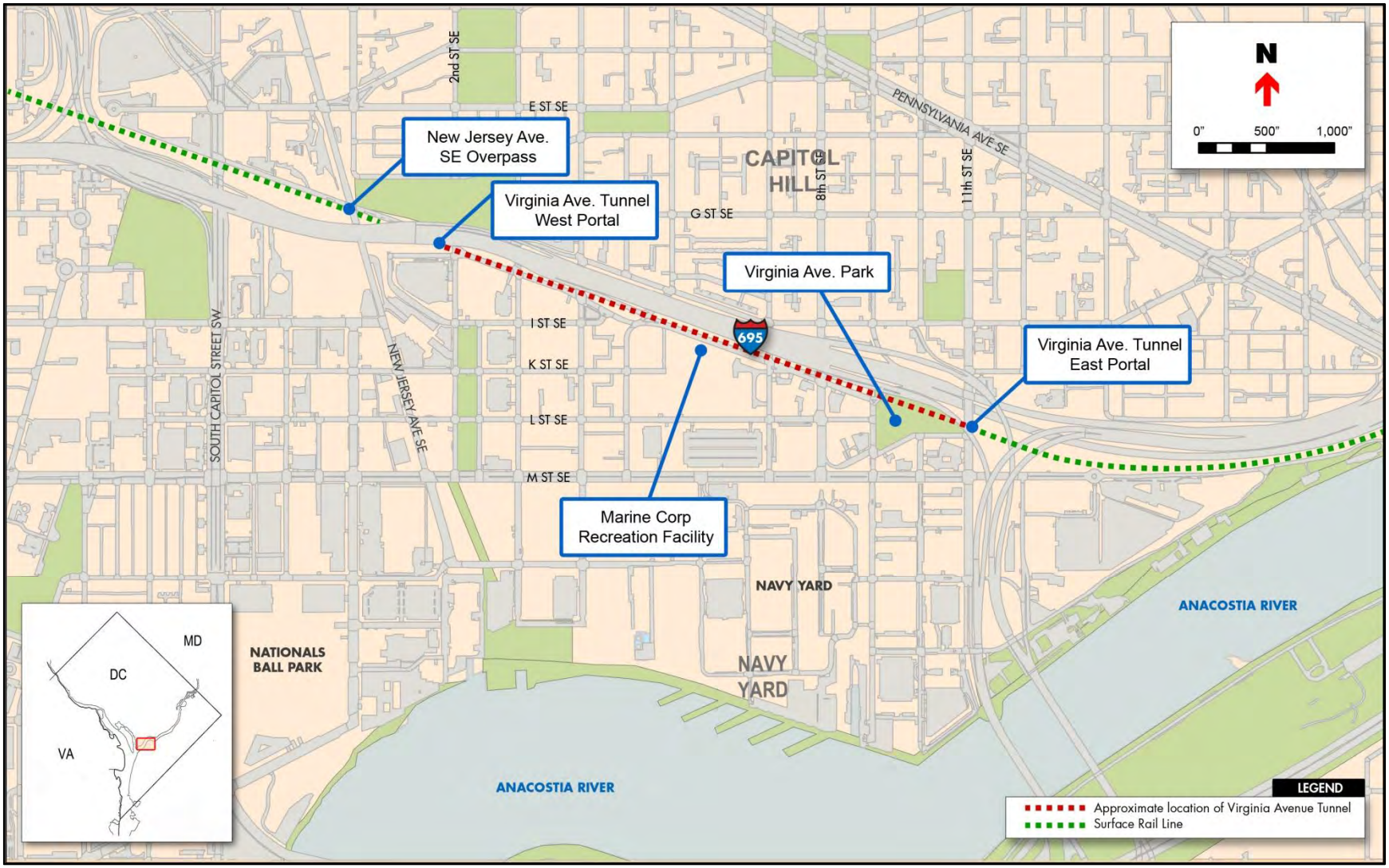
The Federal Highway Administration (FHWA) in conjunction with the District of Columbia Department of Transportation (DDOT) is issuing this Final Environmental Impact Statement (Final EIS) in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, for the proposed reconstruction of the Virginia Avenue Tunnel (the Project). This Final EIS also contains a Final Section 4(f) Evaluation in accordance with the U.S. Department of Transportation Act of 1966. FHWA is the lead federal agency in the development of the EIS. DDOT is the local lead agency. The Federal Railroad Administration (FRA), the National Park Service (NPS), the National Capital Planning Commission (NCPC) and the U.S. Marine Corps are cooperating agencies for the EIS. CSX Transportation, Inc. (CSX), the owner of Virginia Avenue Tunnel, is the project sponsor. The tunnel is located in the Capitol Hill neighborhood of the District of Columbia (DC or District) beneath eastbound Virginia Avenue SE from 2nd Street SE to 9th Street SE; Virginia Avenue Park between 9th and 11th Streets; and the 11th Street Bridge right-of-way (Figure 1-1). The tunnel is also aligned on the south side of Interstate 695 (I-695) previously known as Interstate 295 (I-295). The tunnel portals are located a short distance west of 2nd Street SE and a short distance east of 11th Street SE. The tunnel and rail lines running through the District are part of CSX's eastern seaboard freight rail corridor, which connects Mid-Atlantic and Midwest states.

The reconstruction of the tunnel will require the short-term (approximately a week or less) closure of I-695 ramps and use of Interstate Highway air rights. They require FHWA approval and both are federal actions. CSX is also seeking approval from DDOT for the temporary I-695 ramp closures, interstate highway air rights and for the occupancy, construction and traffic detours on Virginia Avenue SE and adjacent streets in the project area. DDOT has issued an occupancy permit relative to Virginia Avenue SE and adjacent streets, which is contingent on the selection of a build alternative, also known as the Preferred Alternative. The permit will have no force or effect until a build alternative is approved via a Record of Decision. The reconstruction of the tunnel will require temporary closure of Virginia Avenue SE between 2nd and 9th Streets SE, as well as other interim effects on several adjacent city streets during construction. The Project will also require sub surface use of a small portion of land in the U.S Marine Corps recreational facility located between 5th and 7th St, SE on Virginia Avenue SE.

The tunnel is approximately 3,800 feet long and is an integral part of CSX's regional freight rail network that encompasses approximately 21,000 miles of railroad track in the District, 23 states and the Canadian provinces of Ontario and Quebec. Specifically, the tunnel is located along CSX's eastern seaboard freight rail corridor, which stretches from the southeast through the Mid-Atlantic and connecting to the Midwest, thereby making it a key link in the nation's network of major freight rail lines.

If the Virginia Avenue Tunnel were not replaced or reconstructed, it will continue to require increasingly higher levels of investment for maintenance and repair, resulting in more frequent

Figure 1-1
Location of the Existing Virginia Avenue Tunnel



service interruptions and higher risks for localized disturbances. In addition, the tunnel has notable operational deficiencies. Specifically, the tunnel has just a single railroad track, which limits the flow of freight train traffic. Virginia Avenue Tunnel was identified as a bottleneck on the east coast (District of Columbia Freight Forum, Volume 1, Issue 1 [January 2012]). Furthermore, the tunnel does not have sufficient vertical clearance to accommodate rail cars that are loaded with two intermodal containers set one on top of the other, which is called "double-stacking".

The Project will transform the tunnel to a two-track configuration and provide the necessary vertical clearance to allow double-stack intermodal container freight train operations. Reconstruction of the tunnel will allow more efficient freight movement and reduce truck traffic (Freight Forum, January 2012). Because of its inherent efficiencies, freight rail intermodal transportation— transporting goods and equipment in shipping containers and placing them on railroad cars —is the fastest-growing major segment of the U.S. freight rail transportation industry according to the Association of American Railroads. Intermodal transportation is used for a wide variety of perishable and durable consumer goods, and is also used for agricultural and industrial products, such as grain and automobile parts. Reconstructing the tunnel to allow double-stacking will also involve lowering the grade below the rail line's New Jersey Avenue SE Overpass (see Figure 1-1).

If the Project were completed, freight rail transportation through the District will improve substantially, meeting not only the commerce needs of the Washington Metropolitan Area, but also regional and national needs for efficient freight conveyance throughout the Eastern portion of the nation.

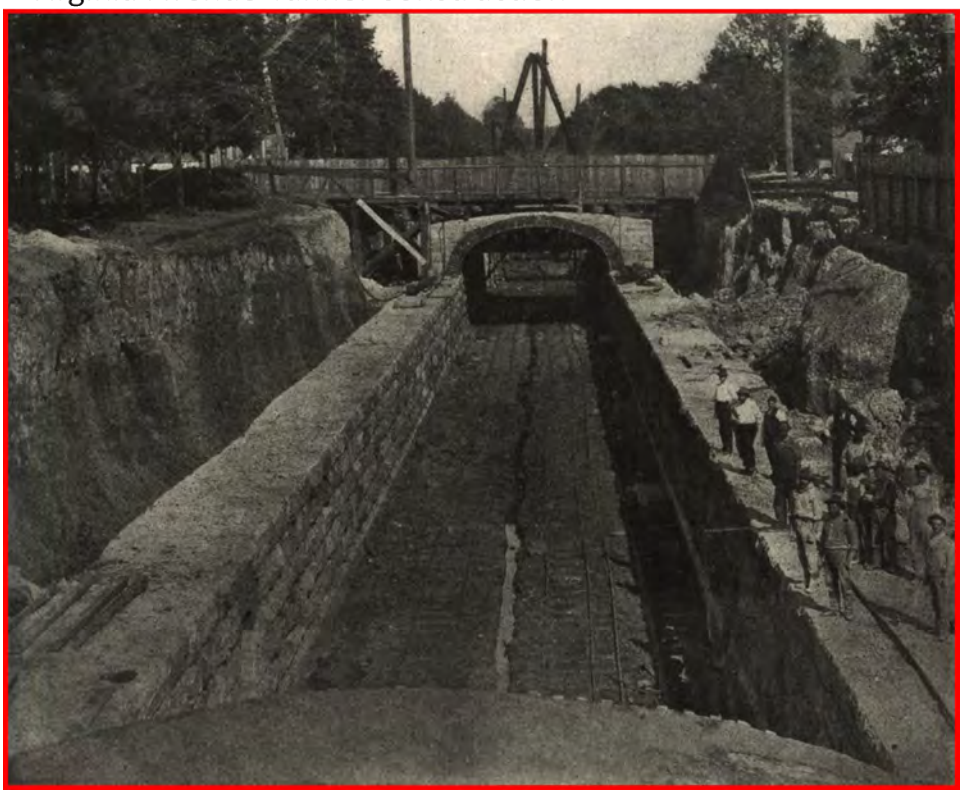
1.1 History

Virginia Avenue Tunnel was constructed in two phases between 1872 and 1904. The Baltimore and Potomac Railroad Company (a predecessor of CSX) built the first phase of the tunnel pursuant to authority granted by an 1869 Act of Congress authorizing the railroad company to enter the District and lay tracks along a route that began at the Potomac River between L and M streets SE and then continued "westwardly. . .to the intersection of Virginia Avenue with South L and East Twelfth streets; thence along said Virginia Avenue northwestwardly to South K Street; thence along said South K Street westwardly to South Fourth Street; thence along the said bank of the canal westwardly to the intersection of South C and West Ninth streets." (16 Stat. at 3, March 18, 1869).

In 1901, Congress directed the removal of the railroad from K Street SE and had them placed in an underground tunnel (rather than on streets) in order to facilitate access between Capitol Hill and the waterfront by allowing north-south streets to run over the tracks, passed 31 Stat 767 (Feb. 12, 1901) entitled, "An Act to provide for eliminating certain grade crossings on the line of the Baltimore and Potomac Railroad Company, . . . and requiring said company to depress and elevate its tracks and to enable it to relocate parts of its railroad therein, and for other

purposes." Based on this 1901 Act, the Baltimore and Potomac Railroad Company completed the second phase of tunnel in 1904.

Virginia Avenue Tunnel Construction



Both phases used "cut-and-cover" construction to build the tunnel, which involved digging down to a depth of about 30 feet (see photograph), building the tunnel walls and roof, and covering the completed tunnel with fill material as top cover. 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. When originally completed in 1904, the tunnel contained two sets of tracks. However, due to modernization of train equipment throughout the 20th Century, the approximately 28 feet of interior horizontal clearance within the tunnel forced the conversion to a single railroad track several decades ago. The rail lines immediately on the east and west ends of the tunnel still contain two tracks.

In 1985, a 350-foot section of the tunnel crown collapsed causing a rotational movement of over 600 feet of the tunnel's wall. The tunnel was shut down for several months so that emergency repairs could be made, which disrupted freight rail operations as well as street level traffic conditions. A 150-foot section of tunnel roof was repaired between 4th and 5th Streets SE, and an additional 300 feet of tunnel was strengthened because it exhibited signs of movement caused by external forces. These repairs involved reinforcement of the sidewalls and replacement of the original brick arch with a new flat roof.

1.2 Background

Today Virginia Avenue Tunnel lies generally beneath eastbound Virginia Avenue SE (except where it is under Virginia Avenue Park and the 11th Street Bridges right-of-way), extending from

just west of 2nd Street SE (west portal) and just east of 11th Street SE (east portal) (see Figure 1-1). The approximately 3,800-foot long tunnel, as well as other CSX rail lines within the District, Virginia and Maryland, is part of CSX's primary mainline freight rail route for freight traffic along the eastern seaboard and Midwest.

As shown in Figure 1-2, Washington, DC is located on the route between east coast ports, such as Norfolk, VA, Charleston, SC, and Savannah, GA, and markets in West Virginia, Pennsylvania, Ohio, Indiana and Illinois. A large percentage of freight carried through this network consists of intermodal containers (goods carried in containers that could also be transported by ship and truck without handling the contents within the containers). However, other types of freight traffic traverse through the Washington, DC and Virginia Avenue Tunnel, such as merchandise, coal and equipment trains.

The CSX rail network through the District as shown on Figure 1-3 was established at the time of the McMillan Plan. From the southwest, the CSX freight rail line enters the District via the Long Bridge, which connects Arlington, VA and southwest DC in the vicinity of the Tidal Basin of the National Mall. Grade-separated from city streets, the rail line is aligned along Maryland Avenue SW, transitioning to Virginia Avenue SW between 9th and 7th Street SW. Between 2nd and 11th Streets SE, the rail line is within the Virginia Avenue Tunnel. Continuing eastward, the rail line is aligned near the Anacostia River, crossing the river via the Anacostia Bridge in the vicinity of the Congressional Cemetery. On the east side of the Anacostia River, the rail line is generally oriented in a southwest-northeast alignment, still grade-separated from city streets, and crossing into Prince George's County, MD at Eastern Avenue NE. CSX also owns rail lines in Northeast and Northwest DC.

As indicated on Figure 1-3, CSX shares some of its rail lines with passenger rail service operated by AMTRAK, Virginia Railway Express (VRE) and Maryland Area Regional Commuter (MARC). AMTRAK provides regional or intra-state service throughout the east coast and the rest of the U.S. VRE and MARC provide commuter train service serving Virginia, Maryland and West Virginia residents, many of whom are employed within the District. Approximately 90 AMTRAK and commuter passenger trains operate on CSX rail lines through the District of Columbia daily (Freight Forum, January 2012). Sharing rail lines with other users limits the number of trains that could use the track at a given time, slowing train speeds and limiting the freight carrying capacity of the affected rail lines. The rail line between Arlington, VA and Southwest DC described above is shared with AMTRAK and VRE trains. However, the passenger service line diverts from the CSX line in the vicinity of 1st Street SW, and continues into a tunnel beneath the U.S. Capitol Grounds, connecting with Union Station on the north side of the Capitol. The section of CSX rail line from this junction (rail split) is exclusively used for CSX freight traffic (see the yellow and green lines in Figure 1-3). This rail line connects with rail lines in Prince George's County, MD.

Although Congress legislated the right for CSX to construct, operate, and maintain two rail tracks beneath Virginia Avenue SE in a tunnel (see Section 1.1), determining the exact boundaries of the CSX right-of-way is not possible due to lack of documentation. Therefore, in

Figure 1-2
CSX Major Rail Network

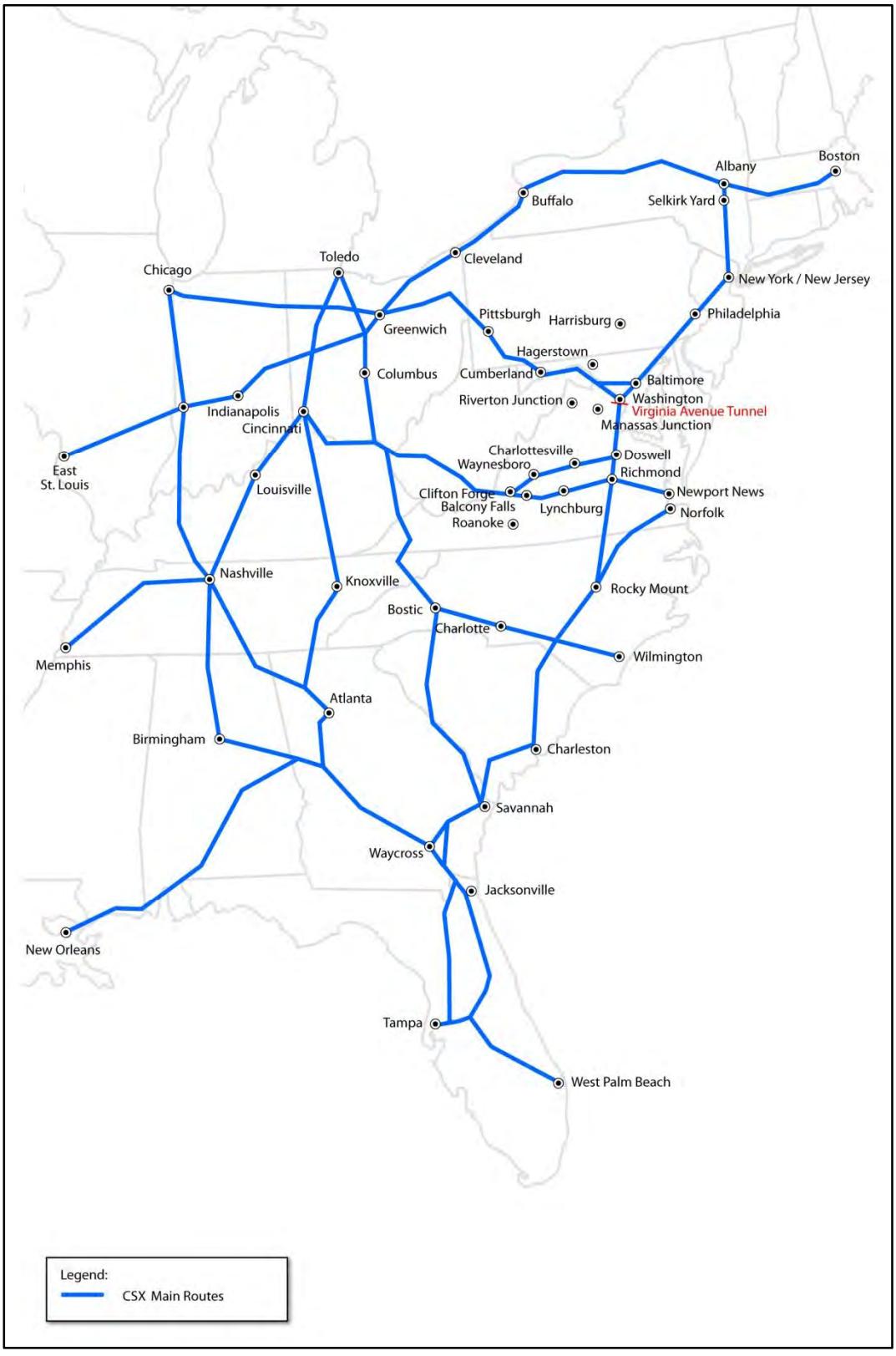
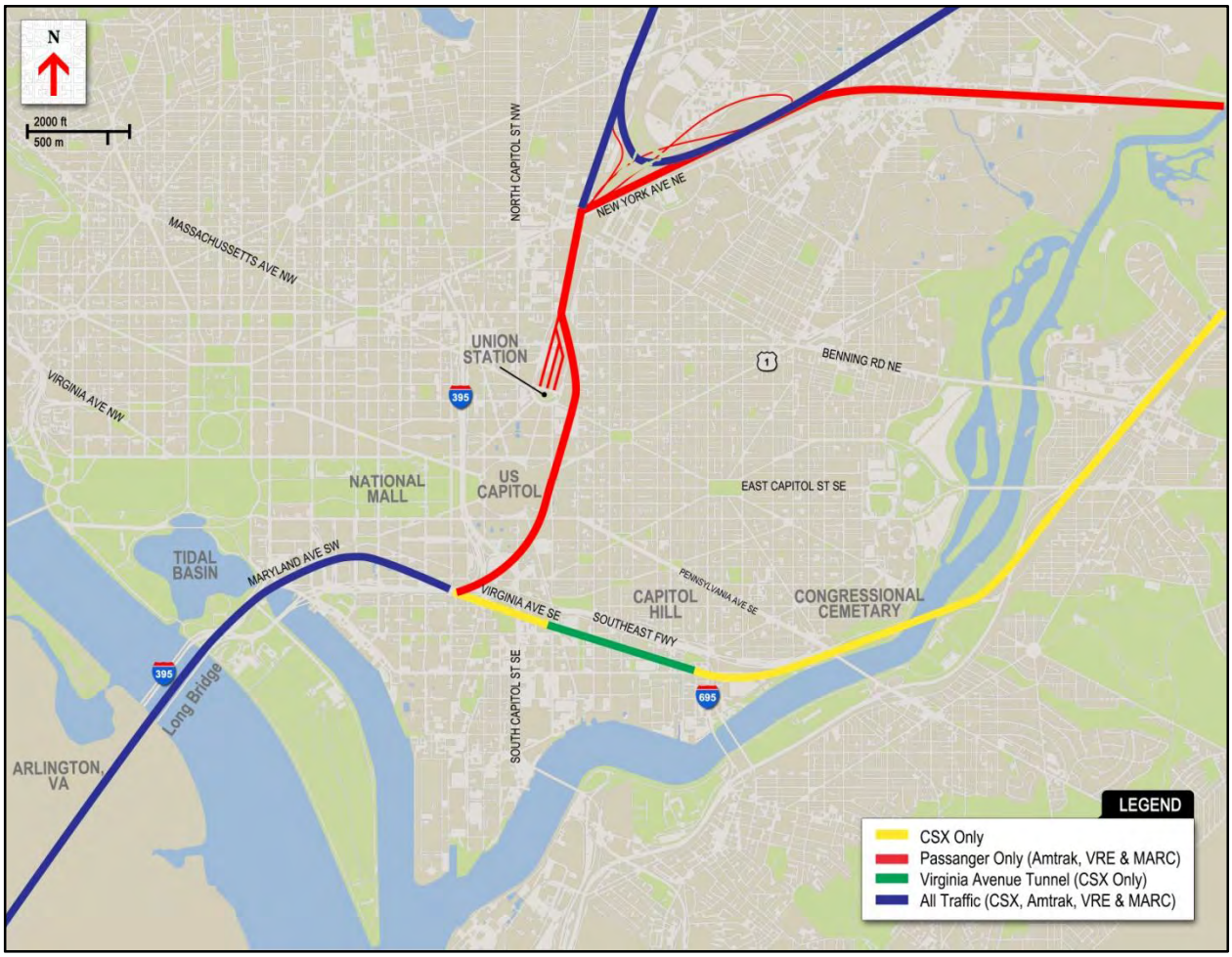


Figure 1-3
Active Rail Lines within the District of Columbia



2012, the Government of the District of Columbia and CSX signed an agreement in which the parties agreed that in order to construct Virginia Avenue Tunnel, CSX will seek construction and occupancy permits from DDOT to access subterranean and above surface space. Based on the 2012 agreement, DDOT issued an occupancy permit relative to Virginia Avenue SE and adjacent streets, which is contingent on the selection of a build alternative in the NEPA process.

1.3 Planning Process

NEPA requires federal agencies to integrate environmental values into their decision making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions. Such actions could include federal funding for a project, issuance

of a federal permit or approval, or allowing use of federal lands on a temporary or long-term basis. The CSX proposed action will require federal approvals and use of federal lands.

Currently, the operation of CSX's rail lines, including the Virginia Avenue Tunnel, through the District does not affect the operation of the Southeast-Southwest Freeway, designated Interstate 695 (I-695) (see Figure 1-1). Despite no expected long-term impacts to the I-695, the Project requires FHWA approval to allow CSX to conduct construction that will temporarily affect I-695 ramps located at 6th and 8th Streets SE. This FHWA approval is subject to the requirements of NEPA.

Following completion of a new Virginia Avenue Tunnel, the surface streets at and surrounding Virginia Avenue SE will return to pre-construction conditions. For example, the operation of the I-695 ramps and the Virginia Avenue SE roadway will be restored back to current conditions, except to the extent that the 8th Street ramp will be modified by 11th Street Bridges project that DDOT is currently undertaking. Specifically, no interference between the rail line and other transportation operations, including that of I-695, will occur following construction.

In addition to the FHWA approval, the Project will require approval from the U.S. Marine Corps to allow construction on its property. The U.S. Marine Corps affected property is a recreational facility located along Virginia Avenue SE between 6th and 7th Streets SE. The approval to allow private construction on federal property is subject to the requirements of NEPA.

Construction of the Project will affect NPS reservations that include Virginia Avenue Park (see Figure 1-1), which is under the jurisdiction of the DC Department of Parks and Recreation. Other affected NPS reservations are located along Virginia Avenue SE, but they are under the jurisdiction of DDOT and the U.S. Marine Corps. A portion of Reservation 122, which is located between 4th and 5th Streets SE, contains a small triangular grassy lawn that is under the jurisdiction of the NPS, but construction will not require the use of the grassy lawn.

The Project may require a formal project review by the NCPC because construction of the Project will affect federally owned lands. This potential NCPC project review is subject to the requirements of NEPA.

Among the federal agencies involved, the FHWA assumed lead agency status for NEPA compliance on May 9, 2011 and invited DDOT as the joint lead agency. FHWA also invited NCPC, NPS and the U.S. Marine Corps to be cooperating agencies under NEPA. In addition, the Federal Railroad Administration (FRA) was invited to be a cooperating agency due to its special expertise related to railroad operations safety. NCPC, NPS, U.S. Marine Corps and FRA all accepted the cooperating agency status.

Due to the closure of certain portions of Virginia Avenue SE during construction for the proposed Project and the need to use and occupy certain public right-of-way for the reconstructed tunnel, DDOT must also provide approval because it has jurisdiction of Virginia Avenue SE and the surrounding streets. Ordinarily, the requirements of the District of Columbia Environmental Policy Act (DCEPA) would apply to the DDOT role and responsibility.

However, because the Project is already subject to the requirements of NEPA, no additional action is needed under DCEPA. In addition, DDOT will provide oversight and inspection of the Project's construction activities.

This Final EIS:

- Describes the Purpose and Need for the Project (Chapter 2);
- Presents the alternatives considered for the Project (Chapter 3), including the Preferred Alternative;
- Describes the environment potentially affected by the Project alternatives (Chapter 4);
- Discloses the potential beneficial and adverse environmental, social and economic impacts that could result from the Project's construction and long-term operation (Chapter 5);
- Presents specific measures to minimize or mitigate adverse impacts to the environment (Chapter 5);
- Documents project compliance with Section 4(f) of the US DOT Act of 1966 (Chapter 6); and
- Documents agency coordination and public involvement activities conducted for the Project (Chapter 7).

This Final EIS also documents compliance with other federal laws that apply to the Project, such as Section 7 of the Endangered Species Act, Section 106 of the National Historic Preservation Act, and applicable Executive Orders.

The Project's Draft EIS was available for agency and public review for 75 days from the date of the Federal Register notice of availability, which was on July 12, 2013. A 45-day public comment period is normally required for Draft EISs. However, based on community request, the FHWA extended the comment period by an additional 30 days. The comment deadline was extended to September 25, 2013. During this comment period, a public hearing was held on July 31, 2013 to provide the general public the opportunity to comment on the Project, its potential impacts and environmental mitigation measures. In preparing this Final EIS, FHWA and DDOT reviewed all comments and testimony received on the Draft EIS for the Administrative Record. This Final EIS contains all comments received on the Draft EIS and responses from the FHWA and DDOT. The comments and responses are provided in Appendix L. Unlike the Draft EIS, this Final EIS identifies the Preferred Alternative for the Project.

Following the Federal Register "notice of availability" of this Final EIS, the FHWA will issue a Record of Decision (ROD) no sooner than 30 days after publication of the Final EIS "notice of availability" in the Federal Register. Issuance of the ROD completes FHWA's NEPA process. The ROD will set forth the basis for the FHWA decision as specified in 40 CFR 1505.2, summarize any mitigation measures that will be incorporated into the Project, and document any required Section 4(f) approval in accordance with 23 CFR 774. NCPC, NPS and the U.S. Marine Corps have the option of adopting the FHWA EIS or preparing their own to complete their NEPA requirements, if needed.

After completion of the NEPA process, other required federal and District approvals and permits will be obtained in order for construction of the Project to proceed, such as approvals from NPS and the Marine Corps to allow construction on their properties, and approvals from DDOT to allow construction on Virginia Avenue SE and other affected streets.

Chapter 2
Purpose and Need

Chapter 2
Purpose and Need

The purpose of the Project 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 would continue if the following needs are met:

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

Each of these needs is discussed in this chapter.

2.1 Virginia Avenue Tunnel Deficiencies

The existing Virginia Avenue Tunnel is deficient for the following reasons:

- With a horizontal clearance (i.e., width distance between the interior tunnel walls) that only allows a single railroad track, the tunnel is a major bottleneck for freight rail movement not only within the District, but also on the eastern seaboard generally;
- The tunnel has insufficient vertical clearance (i.e., height distance between the tunnel floor and ceiling) to operate double-stack intermodal container freight trains; and
- At over 100 years old, the tunnel is nearing the end of its useful life, and is subject to an ever increasing level of maintenance and repairs and higher risks of structural failure.

2.1.1 Tunnel Width

For a mainline freight rail line, the current industry standard for this type of transportation infrastructure is at least two railroad tracks (to allow for simultaneous two-way traffic) with a minimum operating speed of 40 mph. As described in Section 1.2, the rail route through the Southwest and Southeast areas of DC is an integral part of CSX's mainline freight rail network. Although Virginia Avenue Tunnel was originally constructed to accommodate two railroad tracks, freight trains have increased in size since the original construction and safety clearance requirements for opposing traffic increased, thereby necessitating the conversion of the rails within the existing tunnel to a single railroad track arrangement several decades ago. The existing tunnel is approximately 28 feet wide (inside the tunnel walls). A minimum tunnel width of 33 feet is needed to accommodate two railroad tracks, or five feet more than the existing width of the tunnel.

The Mid-Atlantic Rail Operations Phase II Study (December 2009), prepared for the I-95 Corridor Coalition made up of Departments of Transportation from Delaware, New Jersey, Pennsylvania, Maryland and Virginia, identified Virginia Avenue Tunnel as a primary congestion

point and major bottleneck for both freight and passenger traffic. CSX operates approximately 20 miles of freight rail lines in the District. In addition to freight movement, more than 90 commuter trains operate on CSX tracks through the District daily, including 24 AMTRAK, 30 VRE, and 38 MARC trains (Freight Forum, January 2012).

The single railroad track within Virginia Avenue Tunnel represents the single greatest constraint on rail headway (the frequency of passing trains within a given time period) on CSX's mainline freight rail network. It is a bottleneck to the eastern seaboard freight rail corridor because only a single freight train can pass through the tunnel at any one time. As a train passes through the tunnel, freight trains moving in the opposite direction near the tunnel must stop to allow the oncoming train to safely clear the tunnel, thus, limiting the total number of trains that could pass through the tunnel in a given time period. Freight trains often queue for long periods of time on either end of the tunnel to wait their turn to pass through the tunnel. Ordinarily, just freight trains are affected by this delay. However, if an eastbound train is delayed, the queue could extend beyond the junction at 1st Street SW, which is located just one-half-mile from the Virginia Avenue Tunnel portal at 2nd Street SE, or less than the length of a typical freight train. Trains queued beyond that point will continue to cause delays to passenger rail service traveling between Virginia and Union Station.

2.1.2 Tunnel Height

As a century-old facility, Virginia Avenue Tunnel was not built to accommodate modern freight rail transportation, namely the double-stacking of intermodal containers. Trains pulling double-stacked intermodal container cars have become the industry's operational practice for intermodal freight transportation in the U.S. where the rail networks allow it (i.e., vertical obstructions, such as a roadway overpasses and tunnels, along the entire network allow double-stack intermodal container trains to pass underneath). In order to operate double-stack freight trains through a tunnel or other vertical obstruction, a minimum vertical clearance of at least 21 feet must be provided. The existing vertical clearance within Virginia Avenue Tunnel is about 18 feet, or deficient by about three feet. The complications and inefficiencies created by this aspect of the old tunnel is similar to what the highway transportation industry would experience if an overpass did not meet modern standards for vertical clearance on a heavily-used highway that must accommodate tractor-trailer truck traffic.

The existing Virginia Avenue Tunnel was built to accommodate the industry practices of the late 19th and early 20th centuries. For many years after construction, the tunnel satisfactorily met the needs of the freight transportation in terms of having adequate vertical clearance. However, freight transportation changed dramatically, as noted, with the invention and wide-spread adoption of the intermodal shipping container as the principal means to move goods between manufacturing centers and consumer markets, regardless of whether the transport is between local, regional, national or international markets.

The last several decades have witnessed a steady growth in the demand for freight transportation due to population growth and the increasing globalization of commerce. Consequently, freight railroad companies, such as CSX, are carrying ever increasing quantities of

intermodal freight, but are often still operating on the same rail network established decades or even more than a century ago. In addition, these same rail networks are increasingly being shared with other users, in particular passenger rail service, as noted in Section 1.2. The industry solution to meeting higher freight transportation demands while still operating on the same network is to carry more freight per train. The ability to double-stack intermodal containers allows a single freight train to essentially double its intermodal freight capacity, if needed. In other words, double stacking intermodal containers is a way to increase capacity without increasing the number of trains, or the need to construct new rail lines.

Thus, this inadequate vertical clearance of Virginia Avenue Tunnel effectively prevents CSX from operating double-stack intermodal container freight trains along its eastern seaboard freight rail corridor. As a result, the inadequate vertical clearance of the tunnel represents both a major deficiency of the tunnel and the ability to provide efficient service in the rail corridor. Although there are other locations in the District with inadequate vertical clearances, addressing them would require only minor modifications to the rail line. For example, the inadequate vertical clearance at New Jersey Avenue SE, which is part of the Project area, would be resolved by lowering the grade beneath the crossing, a relatively minor construction activity that would not disrupt the surrounding community. Other crossings with inadequate vertical clearances in Southeast DC would be handled in a similar manner.

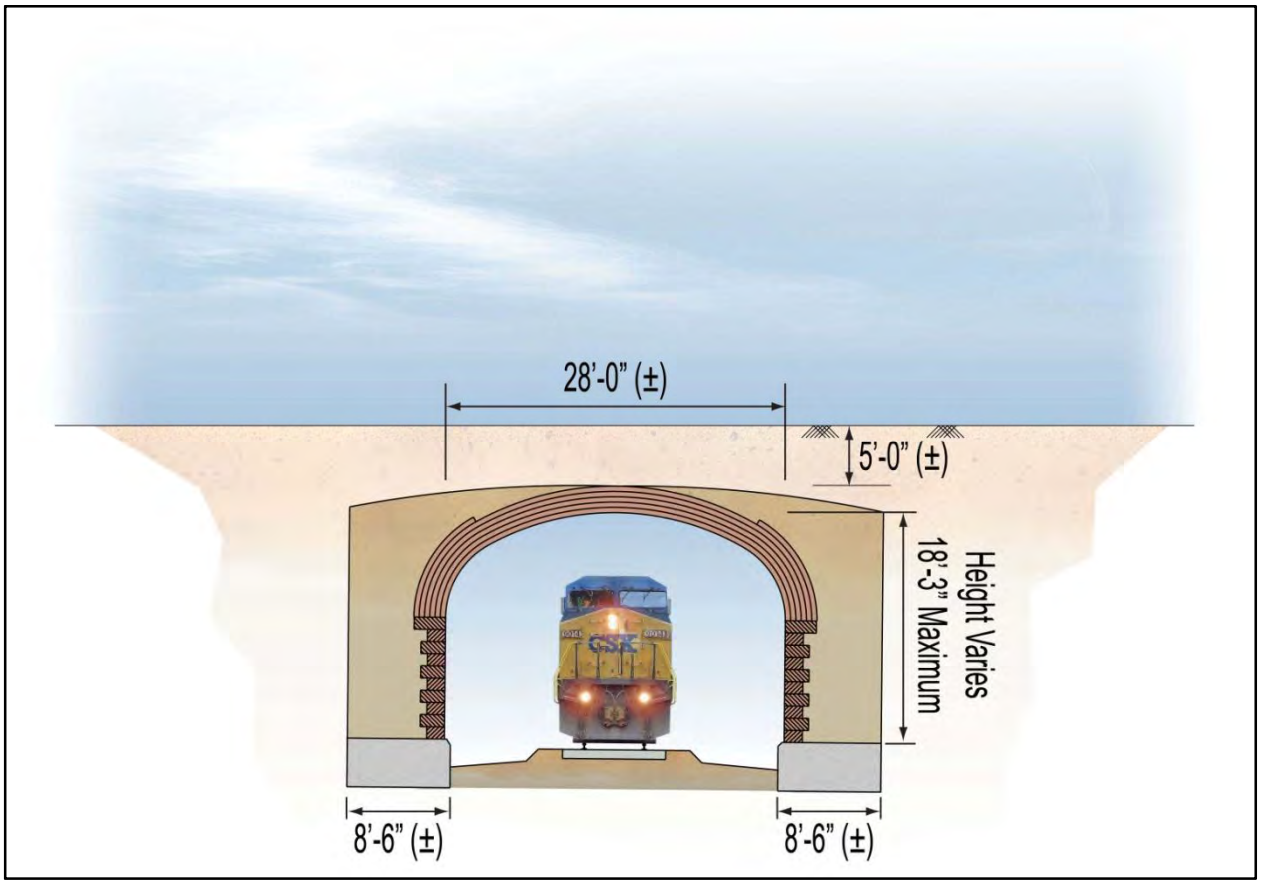
2.1.3 Tunnel Condition

In addition to the capacity and height deficiencies of Virginia Avenue Tunnel, the tunnel is also nearing the end of its useful life. The tunnel requires increasingly frequent inspection and preventive maintenance for safe rail operations. These frequent inspections or preventive maintenance activities are difficult to conduct without compromising normal rail operations, and are likely to increasingly cause service disruptions to become longer than what is acceptable for a mainline freight rail line.

Transportation infrastructures, such as highways, bridges and tunnels, are eventually replaced or undergo major rehabilitation at some point. Alternatively, if a particular element of infrastructure were not replaced, it would continue to require higher levels of investment in maintenance and repair, resulting in more frequent service interruptions and higher risks for localized disturbances.

A typical cross-section of the existing Virginia Avenue Tunnel is shown in Figure 2-1. The tunnel's structural shell consists of walls approximately 8½ feet thick and an arched roof. The walls and roof are of masonry construction. As noted in Section 1.2, the tunnel contains a single set of track (rails and ties) on top of the track ballast. The ballast, which normally consists of a bed of crushed stone, is used to hold the track in place as trains pass through. It is also used to facilitate drainage. The track ballast in and around Virginia Avenue Tunnel consists of crushed stone.

Figure 2-1
Cross-Section of Existing Virginia Avenue Tunnel



Virginia Avenue Tunnel is showing signs of its age. While the overall structure is in relatively good shape, indicators of localized distress are evident, such as cracking in the tunnel's masonry, active water infiltration, spalling (i.e., flaking) of liner brick and the deterioration of mortar in masonry joints. In addition to these tunnel wall conditions, the tunnel's drainage system, made up of a network of ditches, wood trenches, corrugated metal and reinforced concrete pipes, and sump pits and pumps, are severely compromised by overall deterioration and fouling by sediment and debris. This is in part due to the tunnel tracks and drainage system being built directly on top of soil instead of a hard surface, a design no longer used under today's standard engineering practices for most freight rail tunnels. The drainage system is the most critical element in disrepair because this affects the sub-grade load bearing condition of the tunnel floor. The poor drainage system has led to increased moisture in the tunnel and an overall weakening and deterioration of the ground underneath the ballast. Train loadings (i.e., weight of passing trains) are more than double than when the tunnel was first built, which have contributed to the wear and tear on the track bed. Along with the cyclic train loadings, the integrity of the tunnel ballast has also been compromised. In order to maintain safe train passage over areas of substandard track beds, the operating speed limit through the entire

tunnel was reduced to 15 mph (up to 40 mph is allowed immediately outside the tunnel), which has further contributed to the tunnel being a bottleneck of the CSX mainline freight rail network. In addition, poor load bearing of the track bed requires excessive levels of maintenance to ensure the reliable passage of trains.

Just as the techniques for highway and road construction have changed to accommodate the heavier weight of vehicles, so too have railroad construction practices changed to accommodate the increased weight, size and shape of locomotives and rail cars. Not surprisingly, Virginia Avenue Tunnel reflects the engineering practices and construction methods that are more than 100 years old and are effectively obsolete. For example, today's standard engineering practices would recommend a structural floor (e.g., concrete foundation) when the ground of the Virginia Avenue Tunnel is made up of soils.

Despite the signs of distress noted above, the tunnel is in no danger of collapsing in part due to tunnel reinforcements and reconstruction made in late 1985 and early 1986 (see Section 1.1). Nevertheless, even with CSX's active maintenance and inspection program, a major structural deficiency could materialize over the next few decades, possibly due to the continued aging of the tunnel's masonry structure. This would create a major disruption to freight transportation, and would likely disrupt the surface roadway network in the community as CSX would be forced to conduct emergency reconstruction of the affected section of the tunnel.

2.2 Freight Transportation Demand

Currently, an average of 20 freight trains pass through Virginia Avenue Tunnel daily. According to the FHWA's 2011 Freight Analysis Framework (FAF) forecasts, overall freight tonnage would increase by 50 percent in 2040 from 2010 levels. This projection is independent of the Project. According to a U.S. DOT November 3, 2010 press release, freight tonnage is expected to increase 1.6 percent per year, reaching over 27 billion tons by 2040. It was 18.3 billion tons in 2010 back to levels before the U.S. recession in 2008. The press release also noted that intermodal container movement accounted for 18 percent of the value of freight transportation in 2007 and is forecast to grow to nearly 27 percent by 2040. It is likely that rail would accommodate a substantial share of the future increase demand for freight land transportation in the U.S. for the following reasons:

- Highway capacity (freight truck transport) is expanding too slowly to keep up with the FHWA projected demand.
- Certain metropolitan areas have extremely high traffic congestion levels, making highway transport of freight extremely inefficient and time-consuming. For example, according to the 2011 Urban Mobility Report produced by the Texas Transportation Institute (TTI), the Washington Metropolitan Area ranks among the top very large metropolitan areas in the U.S. in terms of congestion.
- Freight trains are almost three times more fuel efficient than freight trucking according to the TTI and the Center for Ports and Waterways in a 2007 report (amended in 2009).
- Greenhouse Gas (GHG) emissions from freight transportation are tied closely to freight energy use. Although energy efficiency improvements have been made in the truck

freight sector, GHG emissions are still growing in this sector because energy efficiencies have not kept pace with growth in freight demand. As noted above, freight rail transportation is approximately three times more energy efficient than freight trucking.

The Panama Canal will soon be expanded to allow vessels carrying 12,000 intermodal containers, more than doubling the maximum freight-carrying capacity (5,000 intermodal containers) of vessels that currently use the canal. Upon its projected completion in 2015, freight throughput from east coast and Gulf of Mexico ports is expected to increase substantially. Freight transporters in Asia could increasingly choose to use east coast and Gulf ports instead of west coast ports to reach inland markets (e.g., Midwest) in the U.S. for their goods due to the cost efficiencies of using larger vessels, even though the water route would be substantially longer than using a west coast port. Currently, it is more economical for shippers of Asian goods to use a west coast port and land transportation (rail and highway) to reach many inland markets in the U.S even though these markets are geographically closer to east coast or Gulf ports. A Panama Canal that could accommodate a 12,000 container vessel may change the equation between east and west coast freight market shares. It may favor a shift in market shares to east and gulf coast ports, notwithstanding other factors affecting freight market shares. Conversely, freight transporters in the U.S. could increasingly choose to use an east coast port to reach destinations in Asia. Ports along the east coast, such as in Savannah, GA and Charleston, SC are investing hundreds of millions of dollars to upgrade their facilities to accommodate the larger intermodal vessels and capture a greater market share.

As the largest freight railroad company on the east coast, CSX is anticipating the impact of an expanded Panama Canal on freight transportation demand from east coast ports, and is anticipating the need to carry a greater amount of freight between east coast ports and Midwest markets. CSX's existing mainline freight rail network in the mid-Atlantic and Midwest would be able to accommodate anticipated demand provided that at least two railroad tracks are provided throughout the network, and CSX is able to operate double-stack freight trains. CSX implemented a National Gateway initiative to improve the flow of rail traffic throughout the nation by increasing the use of double-stack intermodal container freight trains by creating a more efficient rail route that links mid-Atlantic ports with mid-Atlantic and Midwestern markets.

As shown on Figure 1-2, the CSX rail line through the District, including Virginia Avenue Tunnel, is part of the eastern seaboard freight rail corridor, a mainline route linking mid-Atlantic ports with mid-Atlantic and Midwestern markets. Due to the tunnel's "bottleneck" conditions noted in Section 2.1 (single railroad track and its inability to accommodate double-stack intermodal container freight trains), the tunnel represents a constraint to increasing the freight carrying capacity along much of the rail network in order to meet expected increases in freight transportation demand. Due to the integrated nature of freight rail lines, a single point along a freight rail network (e.g., Virginia Avenue Tunnel) could affect the capacity of the entire network.

2.3 Commerce Demands

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 public service by facilitating the shipment of goods and services to the general public. It is not feasible to stop freight rail service during the period of time when the Virginia Avenue Tunnel is reconstructed. Currently, CSX operates between 20 and 30 trains through the tunnel daily. The railroad's need to meet its Common Carrier Obligation, including the statutory duty to provide ``transportation or service on reasonable request'' (49 U.S.C. 11101(a)) will continue unabated throughout the period of time that the tunnel is rebuilt. This duty means that CSX may not decline to provide common carrier service merely because doing so might be inconvenient or unprofitable, or somehow disruptive to others. As with other aspects of interstate commerce that could have profound economic consequences if interrupted, the preservation and maintenance of these transportation services are in the national interest. Just as service cannot be halted during tunnel reconstruction, it would also be inconsistent with the railroad's Common Carrier Obligation to allow such transportation services to be unduly delayed. An increasing amount of railroad traffic is time-sensitive, reflecting economic decisions by shippers to use "just-in-time" approaches to manufacturing. Just-in-time approaches seek to reduce inventory, and allow for the arrival of critical parts that dependably arrive exactly when they are needed by the manufacturer.

As shown on Figure 1-2, severing the rail network in the District would effectively cut-off freight transport between the mid-Atlantic and Midwestern states because CSX does not own rail lines within or near the Washington Metropolitan Area that could serve as an alternate route through or around the District during construction. In particular, the Long Bridge (see Section 1.2) is CSX's only Potomac River crossing other than in Harpers Ferry, WV, which is located approximately 50 miles northwest of the District.

During construction, CSX will need to continue providing its customers with the same level of timely and efficient freight service as it currently provides today, which includes having a Virginia Avenue Tunnel with a single set of tracks. Any diminution in the ability to provide reliable, consistent, and timely freight rail service would make freight rail transport less competitive than truck transport, and the expected response of many freight customers would be to switch transport modes from rail to truck. A substantial shift in modes may result in worsening the already congested interstate and regional road networks, especially those along the I-95 and I-81 corridor, along with associated environmental and socioeconomic impacts. In addition, some portion of this diversion of freight from train to truck would not revert back to freight rail shipment after completion of the Project because a prolonged disruption in service could force some shippers to make long term changes to industrial production and shipping routines.

2.4 Logical Project Termini

The purpose of the Project 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 structural and operational deficiencies of Virginia Avenue Tunnel are addressed, capacity is added in preparation for expected increases in freight transportation demand, and commerce remain uninterrupted while the tunnel is replaced with a new facility. For these reasons, the Virginia Avenue Tunnel generally running under Virginia Avenue SE from 2nd Street SE to 11th Street SE and at grade at 12th Street SE represents logical termini of the Project. On the west end, the need to provide proper grading of the existing tracks west of the new rebuilt tunnel will mean that the vertical clearance underneath the New Jersey Avenue SE bridge will also be able to accommodate double-stack intermodal container freight trains. On the east end, the project limits include the extension of the new tunnel from 11th Street SE to 12th Street SE. The construction area for rebuilding the existing tunnel will not change by extending the new tunnel to 12th Street SE because enclosing the section of track between 11th and 12th Street will not affect the new grading of the tracks east of the tunnel.