CHAPTER 7
OVERVIEW OF FUTURE STEPS

D.C. TO RICHMOND SOUTHEAST HIGH SPEED RAIL

7 OVERVIEW OF FUTURE STEPS

This chapter describes the anticipated sequence of events following the publication of this Final Environmental Impact Statement (EIS) for the Washington, D.C. to Richmond Southeast High Speed Rail (DC2RVA) Project. The events and their anticipated dates are provided in Table 7.0-1 and described in the sections in this chapter.

Table 7.0-1: Anticipated Dates of Future Steps

Project Development Event	Anticipated Date
Record of Decision (ROD)	Spring 2019
Preliminary Engineering Completion	Spring 2019
Corridor Service Development Plan Completion	Spring 2019
Design and construction of AF – RO 4th main track and two crossovers in Area 4 (funded through Atlantic Gateway program)[1]	2022
Funding for remainder of DC2RVA Project	Undetermined at this Time
Final Design and Permitting	Subject to Funding
Property Acquisition	Subject to Funding
Construction	Subject to Funding
DC2RVA New Passenger Service Starts	Undetermined (2025 used for planning purposes in Final EIS)

The anticipated dates provided above are intended for planning purposes and reflect what was assumed for the purposes of this environmental evaluation (see Section 1.3.6 of this Final EIS for full details on EIS planning dates). Actual dates for future Project development are dependent on obtaining a Record of Decision (ROD), identifying and securing construction funding, completing Project design, and finalizing all necessary approvals and permits, including agreements with Amtrak and CSX Transportation (CSXT). Further, the Federal Railroad Administration (FRA) and

[1] The Commonwealth of Virginia received a $165 million FASTLANE grant award in 2016, leveraging additional public and private funding to implement a $1.4 billion program of highway and rail projects along the I-95 corridor (the Atlantic Gateway program). As part of this program, DRPT proposes expediting design, funding, and construction of approximately 6 miles of fourth main track between Rosslyn (RO – CFP 110.1) and Alexandria (AF – CFP 104.3), referred to as the RO to AF Fourth Track project. As of the publication of this Final EIS, DRPT has confirmed funding for the RO to AF project through Areas 1 and 2, with construction planned to commence in 2020; refer to Section 7.7.1 for more details on the project, which includes two new crossovers in Caroline County as well.

the Virginia Department of Rail and Public Transportation (DRPT) understand that funding for construction—as well as the timelines of separate but related projects (summarized below and provided in detail in Section 7.7)—may require that the DC2RVA Project be constructed incrementally over the 20-year planning horizon from 2025 to 2045.

FRA and DRPT acknowledge that the full benefits of the proposed DC2RVA service are dependent upon completion of intercity passenger rail infrastructure projects outside the DC2RVA corridor in the Southeast High Speed Rail (SEHSR) corridor:

- A four-track Long Bridge with a four-track route north of Long Bridge through L'Enfant Plaza to CP Virginia in Washington, D.C. is required to connect the DC2RVA service to Union Station in Washington, D.C. and Amtrak's Northeast Corridor (NEC).
- The SEHSR Richmond to Raleigh project (SEHSR R2R project) included improvements/service between Raleigh, NC and Richmond, VA, and overlaps the DC2RVA Project between Main Street Station and Centralia, VA. The SESHR R2R project infrastructure improvements south of the overlap area are required to implement the four additional Interstate Corridor (SEHSR) trains originating in North Carolina and traveling through the DC2RVA corridor.
- The Richmond to Hampton Roads project (R2HR project) included improvements/service between Norfolk/Newport News and Richmond, VA, and overlaps the DC2RVA Project between Main Street Station and Centralia, VA. The SESHR R2HR project infrastructure improvements south of the overlap area are required to support the four additional Northeast Regional (SEHSR) trains originating in Newport News and Norfolk and also traveling through the DC2RVA corridor to the Northeast Corridor.

Additionally, construction of the infrastructure improvements that are part of the DC2RVA Preferred Alternative is not currently funded (other than the AF—RO 4th project, as shown in Table 7.0-1), and it is unlikely that funding for full construction will be available all at once. Therefore, DRPT has developed an approach to implement the DC2RVA Project in increments as funding becomes available and has prioritized the six areas for construction as shown below, with higher priority given to areas with greater rail corridor congestion:

- Areas 1, 2, and 3—Arlington through Fredericksburg
- Area 6—Richmond
- Area 4—Central Virginia
- Area 5—Ashland

These incremental infrastructure construction and service improvements address the Commonwealth's priorities for the DC2RVA Project and reasonable construction sequences, and link service improvements to infrastructure improvements in the DC2RVA, Long Bridge, SEHSR R2R project, and R2HR project corridors. The incremental approach is designed so that existing freight and passenger rail service can be maintained during the Project buildout. The Project's Corridor Service Development Plan (SDP), which DRPT is preparing concurrently with this Final EIS, provides additional detail on DRPT's anticipated approach to delivering the DC2RVA Project.

7.1 RECORD OF DECISION

FRA will prepare a ROD after the 30-day review period following the Federal Register Notice of Availability for this Final EIS. The ROD is a concise public record of FRA's decision on the Selected Alternative, which would either be the Preferred Alternative as described in this Final EIS or any variant of this alternative as determined by FRA based on any input received on the Final EIS.

The ROD is intended to document that the Selected Alternative:

1. Best satisfies Purpose and Need
2. Poses the least overall impacts to the natural and human environments
3. Has been selected based on processes in compliance with the National Environmental Policy Act (NEPA) and other applicable requirements
4. May be advanced for final design and construction

The ROD will discuss the range of alternatives and all factors considered by FRA in the decision-making for the Selected Alternative. In the ROD, FRA will also identify the measures to minimize harm and the mitigations required for unavoidable impacts. Mitigation and monitoring measures will be delineated in sufficient detail to constitute an enforceable commitment (or will incorporate by reference the portions of the Final EIS that constitute such a commitment).

7.2 PRELIMINARY ENGINEERING

DRPT developed each of the Build Alternatives presented in the Draft EIS and the Preferred Alternative presented in this Final EIS to an approximately 10 percent level of design (conceptual engineering), using readily available data. These conceptual-level designs were sufficient to determine infrastructure requirements to meet operational needs, perform the comparative impact analyses reported in the Draft and Final EIS, and support the decision-making for the Preferred Alternative.

To advance the Preferred Alternative to the next phase of development, DRPT is progressing the conceptual designs to a 30 percent level of design (preliminary engineering). The 30 percent infrastructure design plans take into consideration the operational requirements, adequacy of the infrastructure to improve reliability and resiliency, and environmental mitigations and commitments. The Basis of Design developed for conceptual engineering, which was included as Appendix B in the Draft EIS, serves as a guide for the preliminary engineering as well. In general, CSXT design standards govern the designs within railroad right-of-way. Amtrak and Virginia Railway Express (VRE) design standards govern the design of the intercity passenger and commuter rail station facilities, respectively. Virginia Department of Transportation (VDOT) design standards generally govern the designs within highway right-of-way. Additional standards used for other infrastructure are identified in the Basis of Design.

Advancing from conceptual engineering to preliminary engineering requires additional detailed data, including, but not limited to:

- Surveys for topography, property, drainage, utilities, traffic
- Investigations for geotechnical and environmental information
- Research for planned or proposed infrastructure projects within the design area

Although DRPT developed much of this information during the preparation of the Draft and Final EIS, circumstances can change such that updated information will be necessary when progressing to a more detailed level of design. For example, property and right-of-way lines move, stormwater and drainage regulations evolve, and wetland and stream boundaries as well as traffic patterns shift over time. As DRPT conducts structural and geotechnical surveys beyond preliminary engineering levels, the more precise information available at that time will be used to determine the final alignment of the facilities constructed as part of the Project. Because of these and other potential changes, along with the uncertainty of funding availability (see Section 7.4 for discussion of funding), DRPT has limited preliminary engineering to the level of existing data available through remote sensing (aerial photography), geographic information system (GIS), and other existing sources. As DC2RVA infrastructure is incrementally funded and moves to the next level of design, additional data will be obtained, and the resulting infrastructure design will be compared to the alignment and impacts identified in the Final EIS. The 30 percent design plans will serve as "bridging documents" to maintain compliance with the NEPA commitments established in the Final EIS and ROD as the Project progresses to final design and construction (see Sections 7.5 and 7.6, respectively). If the Project's final design or impacts exceed the NEPA commitments established in the Final EIS and ROD, then DRPT will re-evaluate the design and/or the NEPA documentation.

7.3 CORRIDOR SERVICE DEVELOPMENT PLANNING

DRPT is concurrently preparing a Corridor Service Development Plan for the DC2RVA Project that lays out the overall scope and approach to provide the proposed passenger rail service. The purpose of the SDP is to further refine the operating aspects, cost estimate, and schedule for development of the infrastructure and service improvements planned for the DC2RVA corridor to a greater level of detail than that provided in the Draft and Final EIS.[2] The service planning information provided in the Draft and Final EIS demonstrates the feasibility for the infrastructure to support the railroad operating plan presented in the EIS; however, DRPT will continue to refine this plan throughout the delivery of the DC2RVA Project to reflect additional detail provided from design, current railroad operating conditions, and the availability of funding to construct the Project. The Corridor SDP is the first step in laying out DRPT's initial vision to construct the improvements and implement the proposed DC2RVA service—a manual for DRPT and the Project stakeholders that will be continually updated over the life of the Project.

While not required as part of DC2RVA's process for obtaining a ROD, the SDP details the operational and financial feasibility of the Preferred Alternative:

- Operational feasibility considers network capacity, specific stopping patterns, and train schedules at several points in the future.
- Financial feasibility requires detailed analysis of the anticipated ridership and revenue from fares paid and any auxiliary revenue (for example, from on-board food and beverage sales) and a comparison of Project costs and benefits.

The SDP also defines the phased timeline for funding and construction of infrastructure necessary to deliver incremental increases in service planned by the DC2RVA Project. The SDP for the DC2RVA Project carries forward from the Final EIS two milestone projection years for operations

[2] Chapter 2 of the Draft EIS describes a proposed service plan for the DC2RVA Project and the associated operations analysis, which is further refined in Chapter 3 and Appendix F of this Final EIS.

modeling and ridership: 2025 and 2045. The year 2025 represents the assumed completion of all infrastructure improvements and the implementation year for the DC2RVA service (i.e., 9 new daily intercity passenger round trips (18 total trains per day)) and serves as the baseline for impact evaluations in the Final EIS. The year 2045 represents a 20-year planning horizon and is used to show the long-term sustainability and return on the investment of the Project, both financially and in terms of passenger, commuter, and freight service performance.

The SDP does not represent a commitment of service; rather, it is a planning document, based on operating assumptions at a given point in time to define what the proposed DC2RVA service would look like, how it would operate, and the infrastructure necessary to support the incremental service improvements. It has some elements in common with the Final EIS; for example, confirming the Purpose and Need for the proposed higher speed rail service and describing alternatives that were considered. The SDP discusses the location of the stations to be served under the Preferred Alternative, how these stations will accommodate the proposed service (for example, with amenities such as checked baggage handling or parking), how passengers will access those stations, and how these stations will be integrated with connections to other modes of transportation. It also estimates potential equipment and train crew utilization requirements anticipated for the Project. The SDP also describes how the DC2RVA Project is likely to be implemented through a phased program over time, laying out the incremental improvements that would come on line in various years throughout the planning horizon.

The SDP will include the following elements:

- Purpose and Need
- Rationale
- Identification of Alternatives
- Planning Methodology
- Demand and Revenue Forecasts
- Operations Modeling
- Station and Access Analysis
- Preliminary Engineering and Capital Programming
- Operating and Maintenance Costs
- Public Benefits Analysis, including economic impacts
- Safety and Security
- Future Steps

The SDP will include construction priorities and timelines for funding, construction, and service implementation, as well as phased implementation of infrastructure improvements.

7.4 FUNDING

Funding to prepare the current DC2RVA Tier II EIS was provided through an FRA grant to DRPT for high performance intercity passenger rail development, with the Commonwealth of Virginia and CSXT providing a required non-federal match to the FRA grant funds.

DRPT anticipates that the DC2RVA Project would be implemented incrementally, as funding becomes available. DRPT has not secured funding for the full-build of the DC2RVA Project but has identified several possible sources of funds, including public and private sources. Potential federal sources for construction include: funding programs authorized under the Passenger Rail Reinvestment and Improvement Act of 2008 (PRIIA), such as the FRA high speed intercity passenger program; funding programs authorized under the Fixing America's Surface Transportation Act (FAST Act) of 2015, such as the Fostering Advancements in Shipping and Transportation for the Long-Term Achievement of National Efficiencies (FASTLANE) or

Infrastructure for Rebuilding America (INFRA) grant programs; annual appropriations, such as the U.S. Department of Transportation (U.S. DOT) Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant program (recently retitled Better Utilizing Investments to Leverage Development (BUILD)); and other discretionary sources. Non-federal funding sources include Commonwealth of Virginia, local governmental, and private sector funds. Operations and maintenance costs would be covered by a combination of passenger fare revenue recovery and federal, state, and/or local funds. As of the publication of this Final EIS, DRPT has secured funding from both the U.S. DOT FASTLANE program and state sources to construct a fourth mainline track for approximately 6 miles between the Potomac River and Alexandria plus two new crossovers in Caroline County as part of the Commonwealth's Atlantic Gateway Program, described in greater detail in Section 7.7.1.

Amtrak has sole fiscal responsibility for long-distance routes through Virginia. The Commonwealth is financially responsible for the capital and operating costs associated with Northeast Regional (Virginia) intercity passenger rail services originating and terminating in Virginia. Virginia's state-sponsored intercity passenger rail operations are funded through the Intercity Passenger Rail Operating and Capital (IPROC) Fund. Additionally, passenger fares and other revenues are used to defray a portion of passenger rail operating costs. Five of the nine new daily round-trip passenger trains to be added to the corridor under the DC2RVA Project will operate in a similar manner as Northeast Regional (Virginia) intercity passenger trains with extended service beyond Washington, D.C. into Amtrak's Northeast Corridor (NEC). State funding from the Commonwealth will be required to support the operation and maintenance of these five new Northeast Regional (SEHSR) trains. The remaining four new round-trip trains implemented under the DC2RVA Project will be Interstate Corridor (SEHSR) intercity passenger rail trains serving destinations in North Carolina and will operate in a similar manner as the Interstate Corridor (Carolinian) train within the DC2RVA Corridor. Other funding will be required to support the operation and maintenance of these trains. The current Interstate Corridor (Carolinian) train that operates through the DC2RVA corridor to North Carolina is supported by the State of North Carolina.

Virginia's capital and operating financing mechanisms for passenger rail are described in detail in its 2017 State Rail Plan.[3] All of Virginia's passenger rail services operate over the infrastructure of private freight rail carriers, allowing the state to combine funding from both public and private sources to deliver projects with joint passenger and freight rail benefits. Virginia uses the following funding sources for rail capital projects:

IPROC Fund. The IPROC Fund was created by the General Assembly in 2011 as a strategy to sustain Virginia's share of Amtrak Virginia's operating budget, pursuant to PRIIA guidelines, and can be found in Virginia Code §33.2-1602.50. The IPROC fund is used to fund four state-supported Amtrak routes consisting of six daily round-trip Amtrak trains. The PRIIA Act of 2008 required states with Amtrak services less than 750 miles to pay for the routes or cease operation, and the IPROC fund enables the Commonwealth to continue those services. The IPROC fund is also the source of funds for passenger rail equipment upgrades and capital improvements.

Rail Enhancement Fund (REF). Created by the Virginia General Assembly in 2005, REF provides for the retention, maintenance, improvement, and development of freight and passenger railways, which are essential to the Commonwealth's continued economic growth, vitality, and

[3] The Virginia 2017 State Rail Plan is available at: http://www.drpt.virginia.gov/rail/reference-materials/virginia-state-rail-plan

competitiveness in national and world markets. Projects undertaken using these funds must create public benefits within the Commonwealth that exceed the investment from the fund. Such benefits include the improvement of traffic congestion and environmental quality and the reduction in highway maintenance needs. This fund is the primary source for the implementation of large capital projects for rail improvements, and all projects receiving funds from REF must include a minimum of 30 percent cash or "in-kind" matching contribution from a non-state source, which may include a private source, a railroad, a regional authority, a local government source, or a combination of such sources.

Private railroad funds. Private railroad funds are investments contributed by private railroads, such as CSXT or Norfolk Southern, working in partnership with the state to address system bottlenecks, access, or other infrastructure projects.

Other local or regional matching funds. These include funds contributed by localities or regional agencies to advance a project with local or regional significance, such as grade separations, improvements to safety, station access, or parking, etc.

Federally-administered rail funds. Federal transportation funding to states is periodically authorized through federal surface transportation acts. The FAST Act of 2015 is a five-year program to improve the nation's transportation infrastructure, including roads, bridges, transit systems, and the rail transportation network. The bill authorizes a total of $305 billion in funding from fiscal year (FY) 2016 through FY 2020.

The FAST Act places major emphasis on freight investments to be supported by the Highway Trust Fund by creating a new National Freight Program authorized for funding at an average of $1.2 billion per year, to be distributed to states by formula. Non-highway projects eligible to receive these funds include rail-highway grade separation and intermodal transfer and access projects.

Title XI of the FAST Act, also known as the Passenger Rail Reform and Investment Act of 2015 (PRRIA), authorizes for $5.5 billion to be spent on the national intercity rail network outside the NEC. Funding for this program, as well as another $2.2 billion for FRA grant programs, however, are dependent on annual Congressional budget appropriations. No passenger appropriations passed during the first year of the program.

7.5 FINAL DESIGN AND PERMITTING

Final design progresses the design from preliminary engineering through the preparation of construction documents. Design progress is guided by commitments in the DC2RVA Tier II EIS and ROD as well as the SDP. The DC2RVA Project is funded through the completion of preliminary engineering (as described in Section 7.2). Funding for final design, or to construct incremental portions of the corridor, will be identified in the future.

The final design will further develop preliminary engineering plans and documents into construction documents. This process varies depending on the procurement process selected by the sponsoring agency and on the agency in charge of producing the particular construction documents. It has not been determined at this time which agency will be responsible for future procurements, thus the following discussion is silent on specific agency responsibilities.

At this time, DRPT anticipates that the most likely procurement process will be through a Design-Bid-Build (DBB) procurement. The following paragraphs describe the typical final design process for DBB procurement.

Agency design processes are somewhat similar and generally require intermediate deliverables that are expressed in terms of the level of design as a percentage of the total design, e.g., 60 percent, 90 percent, and 100 percent. DBB procurement advances plans, specifications, and cost estimates (PS&E) through the 60-90-100 percent intermediate deliverables of final design to deliver construction documents used for bidding or letting the project.

Construction documents provide the foundation and framework for the construction activities. These documents may include, but are not limited to, construction plans, specifications, estimate of probable construction costs, project manual, bridging documents, and project schedule.

Construction plans graphically represent existing conditions, the proposed conditions, and the intermediate steps required to get from existing to proposed conditions. These plans may include notes and standards to be used during the removal of existing infrastructure or the construction of proposed infrastructure.

Project specifications are the written instruction manual for construction. Specifications provide the details for materials, storage, handling, fabrication, and construction of the components of the proposed infrastructure.

An estimate of probable construction costs checks the design against the project budget. Analysis of the items and unit costs in the estimate and in the budget may be needed if the budget exceeds the funding available for the project. Further value engineering may be applied if the estimate continues to exceed the budget for the project after conducting a cost analysis. An estimate is generally used for analysis of the bids and in preparing a bid recommendation.

A project manual may combine pre-bid materials, bid materials, addenda, general specifications, technical specifications, special provisions, proposed construction schedule, and/or the construction plans. Project manual contents and the need for a project manual vary by project.

If the project is procured through a Design-Build process instead of the Design-Bid-Build approach, then bridging documents may also be necessary at that time. Bridging documents provide the next steps required to "bridge" the transfer of responsibility from the owner's engineer to the design-build team. These documents should clearly convey the owner's objectives and goals, the design status, the basis of design, and the general specifications. Bridging documents should also clearly define the roles, responsibilities, and expectations of all parties to the design-build agreement.

A project schedule provides the agency/owner and the contractor with a clear expectation of when the project is to be complete. Schedules may be externally driven by dates to begin operations or internally driven by the infrastructure to be constructed. Once a contractor is selected, the construction schedule should conform to the project schedule.

Permitting will be required to progress from design to construction. The specific permits required will vary based on the proposed infrastructure and jurisdiction(s) through which the incremental portions of the corridor pass. Permit submittal and approval processes will also vary based on the same factors. Identification of the required permits and coordination with the permitting agency/agencies should be an early design task and should progress concurrently with the design to reduce potential construction delays.

7.6 CONSTRUCTION, PROPERTY ACQUISITION, AND IMPLEMENTATION

7.6.1 Construction Packaging

DRPT anticipates that the DC2RVA Project segments would be divided into construction packages. Construction packages would be further subdivided based on the types of infrastructure improvements and would be let to meet project schedules as developed during the incremental phases of the overall Project, which were presented at the beginning of this chapter:

- Areas 1, 2, and 3—Arlington through Fredericksburg
- Area 6—Richmond
- Area 4—Central Virginia
- Area 5—Ashland

All work within CSXT right-of-way will be performed under CSXT's *Contractors Handbook for CSXT Roadway Worker Protection*. Right-of-way acquisition will be a major factor in determining the overall segment construction packaging and scheduling. DRPT assumes that all rights-of-way for a particular segment will be acquired before construction activities commence for that segment.

Refer to Section 2.8 of the Draft EIS for a general description of the construction plan for the entire corridor and details for each of the four major construction activities: rail, bridge, road, and station construction.

7.6.2 Construction Phasing

Within the DC2RVA Project corridor, the construction of the additional track and infrastructure, modification to control points, station infrastructure with new and upgraded platforms, and speed-related modifications requires phased construction. Where additional tracks are proposed, or existing tracks are being shifted through curves, construction will be phased to maintain passenger and freight rail services to the extent practicable. Station improvements for platform additions and pedestrian access will be advanced early to support the new track when placed in operation. Construction phasing will be defined in the next phase of design and further refined during final design for each of the corridor construction packages.

7.6.3 Coordination with Railroad Operations

Implementation of multiple infrastructure projects along an active and highly congested rail corridor presents challenges. The construction of the various projects must be scheduled to minimize disruptions of passenger and freight service from temporary track outages (where a track is removed from service) and slow orders (delays to continuous train operations). The planning and staging of work to minimize adverse impacts to continuous rail operations will require a high level of coordination among the various construction stakeholders.

Coordinated scheduling and phasing of the segmental construction will be essential to timely Project delivery. Construction tasks that can be performed prior to impacting track removal, track shifts, or temporary outages from service changes will be early construction items. These early tasks include utility relocations; roadway relocations; bridge, retaining wall, grading, and track roadbed construction; offline railway bridges; special trackwork preassembly; and station improvements.

7.7 COORDINATION WITH OTHER STUDIES AND PROJECTS

The DC2RVA Project was designed to fit FRA's 2009 *Strategic Vision for Higher Speed Rail* near-term strategy of upgrading reliability and service of conventional intercity rail services at speeds up to 90 miles per hour (mph), where practical, in a corridor shared with commuter and freight services. In order to obtain the full benefit of the DC2RVA infrastructure and service improvements, several other ongoing rail improvement projects must also be completed in the DC2RVA corridor and corridors adjacent to the DC2RVA Project.

The DC2RVA Project provides a critical link between Amtrak's heavily traveled NEC and the developing Southeast Rail Corridor. The ability of the DC2RVA Project to improve intercity passenger rail is dependent upon the performance and capacity of these connecting corridors and completion of the related projects and their associated rail improvements. A summary of some of the key interrelated rail improvement projects and studies is presented below. Additional details on rail and related transit projects can be found in Chapter 4 of the Alternatives Technical Report (Appendix A of the Draft EIS), which provided an overview of some of the previous and ongoing rail planning studies in the DC2RVA corridor and adjacent sections of the larger Southeast and Northeast Rail Corridors and described the relationship of these other studies/projects to the DC2RVA Project.

7.7.1 Coordination with Local/Regional Rail Projects

The following rail projects are included in the No Build assumptions for the DC2RVA Project (refer to Draft EIS Section 2.5.1 for details); the ongoing and/or current coordination efforts and status are included for each project, which are presented in north to south order in the Project corridor. In addition, the Ashland Americans with Disabilities Act (ADA)-compliant platforms, which were proposed by Amtrak in 2017 after the publication of the Draft EIS, are described.

Washington Union Station Expansion Project. The Union Station Redevelopment Corporation (USRC), in coordination with Amtrak, is proposing to expand and modernize Washington Union Station in order to provide a more positive customer experience; support current and future rail service and operational needs; facilitate intermodal transportation; preserve and maintain the historic station and its features; sustain the economic viability of Washington Union Station; and integrate with the adjacent neighborhoods, businesses, and planned development. The proposed project includes reconstructing and realigning tracks and platforms, developing new passenger concourses, improving multimodal transportation facilities, and improving and expanding other supporting facilities.

The Washington Union Station Expansion project is currently in the planning process. Upon completion of the environmental review, USRC and Amtrak will pursue implementation of the project using all of the financing tools available, which may include federal grant and loan programs.

Virginia Avenue Tunnel Expansion. CSXT is nearing completion in Spring 2019 on the Virginia Avenue Tunnel expansion project. When complete, the project will provide CSXT with the ability to operate double-stack intermodal container freight trains on CSXT's National Gateway, and second, to eliminate a chokepoint caused by the Virginia Avenue Tunnel's single track. The DC2RVA Project assumes the Virginia Avenue Tunnel will be completed prior to implementation of the 2025 DC2RVA service plan and includes the tunnel in the No Build Alternative.

Atlantic Gateway Program. Virginia is continuing to advance the Atlantic Gateway Program. In 2016, U.S. DOT selected the Commonwealth of Virginia to receive an award of $165 million from the FASTLANE program to expand rail and highway capacity in Northern Virginia as part of the Atlantic Gateway suite of projects. The $165 million FASTLANE grant will leverage $565 million in private investments and $710 million in other transportation funds to fund a $1.4 billion package of rail and highway expansion projects intended to address some of the worst freight and passenger transportation bottlenecks on the Interstate 95 corridor.

Atlantic Gateway consists of five distinct rail capacity and engineering projects:

- Long Bridge Program development funding to advance engineering, stakeholder agreements, and outreach in support of the long-term, multi-agency initiative to increase rail capacity across the Potomac River through the expansion or replacement of the Long Bridge. This project is estimated at $30 million,[4] with $15 million provided by DRPT and $15 million being provided by CSXT. There are no federal funds on this portion of the Atlantic Gateway.
- Construction of 6 miles of fourth mainline track from the north bank of the Potomac River at Arlington to the AF interlocking in Alexandria, where passenger and commuter trains bound for Manassas diverge from the DC2RVA corridor. This piece of the DC2RVA Project is estimated at $225 million, with $45[4] million provided by the grant and the remainder being provided by the Commonwealth and other federal sources. Construction is planned to commence in 2020. DRPT did not include this project in the No Build Alternative.
- Construction of 8 miles of third mainline track from the Franconia-Springfield VRE station to a location just north of the Occoquan River. This project is estimated at $220 million and is being funded by the Commonwealth. DRPT included this project in the No Build Alternative.
- Construction of two interlockings in Caroline County south of Fredericksburg to improve operational flexibility and network fluidity just south of the VRE commuter territory. This piece of the DC2RVA Project is estimated at $30 million and is being funded by the Commonwealth.
- S-Line transfer mechanism (an agreement between the Commonwealth of Virginia, State of North Carolina, and CSXT) to allow for the transfer from CSXT to public ownership of an abandoned portion of the S-Line that runs from Petersburg, VA to Norlina, NC. The transferred S-Line will host the passenger service extending south from the DC2RVA corridor to the Richmond to Raleigh Southeast High Speed Rail (SEHSR) project. This project is estimated at $30 million and is being funded by the Commonwealth and CSXT. The S-Line transfer is part of the implementation of the SEHSR Richmond to Raleigh (SEHSR R2R project), described in greater detail in Section 7.7.2 below.

Long Bridge Capacity Expansion. The Long Bridge is a double-track railroad bridge built in 1904 and owned by CSXT that crosses the Potomac River between Washington, D.C. and Arlington, VA. The bridge provides the only Potomac River rail crossing between Washington, D.C. and

[4] Cost estimates are from the 2016 Atlantic Gateway FASTLANE application:: http://www.virginiadot.org/projects/resources/atlantic_gateway/Atlantic_Gateway_FASTLANEGrantApp2016.pdf

Northern Virginia and is used by all Amtrak intercity passenger trains, VRE commuter trains, and CSXT freight trains. Intercity passenger and commuter trains now comprise more than two-thirds of the train traffic crossing Long Bridge. The increasing train traffic on the two-track bridge has produced the most significant rail network bottleneck in Virginia.

Washington, D.C.'s Department of Transportation (DDOT) is managing an EIS to study an expansion of capacity on the Long Bridge in coordination with DRPT, VRE, CSXT, and FRA. The Final EIS and ROD for the Long Bridge Capacity Expansion Study are anticipated in 2020. In developing the service planning for DC2RVA, DRPT has assumed the Long Bridge Capacity Expansion would provide at least four main tracks across the Potomac River, past VRE's L'Enfant Plaza station, to CP Virginia in Washington, D.C., where Amtrak-owned tracks diverge from CSXT tracks to Union Station through the First Street Tunnel. DRPT has also assumed, based on the Long Bridge Alternatives Development Report (June 2018),[5] that the Long Bridge capacity expansion would add two tracks on a new structure immediately upstream and parallel to the existing two-track bridge, providing a total of four tracks across the river. DRPT included the Long Bridge Capacity Expansion in the No Build Alternative.

VRE Capital Improvements. VRE is conducting assessments for station improvements to several stations on the Fredericksburg line. The stations included in VRE's study are: Alexandria, Crystal City, Lorton, Rippon, Quantico, Brooke, and Leeland Road. Proposed improvements in the assessments include recommendations for: extending platforms, placing island platforms, providing for ADA and grade-separated access to the platforms, and ways to integrate the stations with existing or proposed development in the surrounding areas, and relocation of the Crystal City VRE platforms. DRPT and FRA have been coordinating the design of the DC2RVA track improvements with VRE's plans for platform and station improvements.

VRE is also developing recommendations for improvements to its L'Enfant station, as well as additional track and siding improvements between CP Virginia and CP L'Enfant in Washington, D.C. DRPT has included these VRE capital improvement projects in the No Build Alternative.

Potomac Yard Metro Station. Potomac Yard is a former Richmond, Fredericksburg and Potomac Railroad (RF&P) rail classification yard located in the northeast area of the City of Alexandria, VA, adjacent to the CSXT rail corridor. The City of Alexandria, working with federal, state, and local stakeholders and private developers, is redeveloping Potomac Yard as a multi-use commercial, office, and residential development, including a new WMATA station serving the Yellow and Blue Metrorail lines. WMATA's Potomac Yard Metrorail Station would be connected to additional residential and commercial development across the CSXT right-of-way by a pedestrian/bicycle bridge over the CSXT rail line. The Federal Transit Administration (FTA) and the National Park Service (NPS) issued their RODs for the Potomac Yard Metro Station in Fall 2016, and in September 2018, WMATA awarded a contract for design and construction of the metro station. The initial plans for Potomac Yard Metro Station called for two entrances, north and south, with each entrance linked to a separate pedestrian bridge over the rail corridor.

DRPT has been coordinating the design of the DC2RVA track improvements with the City of Alexandria and WMATA's plans for the Potomac Yard Metro Station, pedestrian/bicycle overpass, and related area development.

[5] The Long Bridge project Alternatives Development Report is available on their project website: http://longbridgeproject.com/study-documents/

Powells Creek to Arkendale Third Track. FRA awarded Virginia a $74.8 million grant to build up to 11 miles of third track and related improvements from Powells Creek in Prince William County to Arkendale in Stafford County, as well as improvements to the station at the Quantico Marine Base in Quantico. The third track is currently under construction between Possum Point and Arkendale; a distance of approximately 9 miles. The remaining 2 miles of third track, from Powells Creek to Possum Point, will be built in the future when additional funds are available. DRPT included the third track from Powells Creek to Arkendale in the No Build Alternative.

Ashland Station ADA-Compliant Platforms. In 2017, Amtrak proposed plans to rebuild the existing Ashland station platforms to improve accessibility and compliance with the ADA. The existing station platforms were described in detail in Section 8.3.5.11 of the DC2RVA Project Alternatives Technical Report (Appendix A of the Draft EIS). Currently, there are two side platforms at Ashland, surfaced with brick pavers with an elevation of approximately top of tie. The west side platform is approximately 500 feet in length and varies in width between approximately 4 feet on the south end and 12 feet on the center and north end. The east side platform is approximately 500 feet in length and is approximately 6 feet in width. The existing pedestrian grade crossing between the two platforms is approximately 3 feet in width. Amtrak's plans call for replacing the west side platform with an approximately 374-foot-long platform, 12 feet wide, raised to 8 inches above top of rail north and south of the existing Visitor Center building, where the platform would remain at top of tie. The east side platform would be approximately 487 feet in length, 12 feet wide, and raised to 8 inches above top of rail. A section of the east side platform across from the Visitor Center would be at approximately top of tie to facilitate ADA-compliant access to Railroad Avenue. There would be an area enclosed by a canopy on the east side platform, and both east and west platforms would be provided with mobile wheelchair lifts. A new passenger grade crossing approximately 30 feet wide would be installed between the platforms. The existing at-grade road/rail intersections at College Avenue and England Street (S.R. 54) would remain as the north and south boundaries of the platforms. Railroad Avenue on the east side of the station would be shifted easterly to accommodate the expanded width of the east side platform, resulting in the loss of some on-street parking. Construction is scheduled to begin in 2019.

Main Line Relocation Project at Acca Yard and Crossovers South of the James River. In 2019, CSXT completed a mainline relocation project at Acca Yard to relieve the current bottleneck. The reconfiguration of the switching yard incudes a two track mainline connection around the west side of Acca Yard, allowing through passenger and freight trains to bypass Acca Yard. The project includes addition of two crossovers on the A-Line south of the James River. DRPT included this project in the No Build Alternative.

7.7.2 Coordination with Southeast High Speed Rail Corridor Projects

In 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) became law, under which Section 1036 authorized a program of high speed rail corridors in the United States. In 1992, the U.S. DOT designated the SEHSR corridor from Washington, D.C. to Charlotte, NC as one of the original national high speed rail corridors, and in 1996, administratively designated an extension of the corridor from Richmond to Hampton Roads. In 1998, the Transportation Equity Act for the 21st Century (TEA-21) became law, under which Section 7201 authorized the designation of additional high speed rail corridors and extensions of existing corridors. That same year, the U.S. DOT extended the SEHSR corridor into South Carolina, Georgia, and Florida, with further connections added within Georgia and Florida in 2000. The SEHSR program calls for developing

a range of improved intercity passenger rail speeds, from 79 to 110 mph on shared track (freight and passenger service), and possibly speeds above 110 mph, on dedicated track (passenger service only) on the Atlanta to Charlotte corridor only.

FRA and the Federal Highway Administration (FHWA), in partnership with Virginia and North Carolina, initiated a Tier I EIS for the section of the SEHSR corridor from Washington, D.C. to Charlotte, NC in 1999, for which FRA and FHWA completed a Final EIS and issued a ROD in 2002. The Tier I EIS selected an incremental approach to develop the SEHSR between Washington, D.C. and Charlotte, NC, which is inclusive of the DC2RVA corridor. Key elements of the selected incremental approach are:

- Upgrade existing rail corridors (instead of developing new corridors)
- Utilize fossil-fuel burning equipment rather than electric-powered equipment
- Add service as market demand increases and/or when funding is available

The incremental approach seeks to minimize cost and potential impacts to the environment by utilizing existing railroad tracks and rail rights-of-way as much as possible.

The components of the SEHSR corridor are in different stages of planning and NEPA clearance based on need and funding. The following summary identifies the status of the five major components of the SEHSR corridor:

Washington, D.C. to Charlotte, NC. Tier I Final EIS and ROD completed in 2002.

SEHSR Richmond to Raleigh (SEHSR R2R Project) Final Design and Implementation. FRA, North Carolina Department of Transportation (NCDOT), and DRPT completed a Tier II EIS in 2015 and signed a ROD for the SEHSR R2R project in 2017. The study covered the 162-mile segment of the SEHSR corridor between Richmond[6] and Raleigh, NC and called for reactivation of 76 miles of CSXT's abandoned S-Line. The SEHSR R2R project proposed operating four daily Interstate Corridor round trips between New York and Raleigh via Richmond, which are included in the DC2RVA service plan as Interstate Corridor SEHSR trains operating through Richmond to Washington, D.C. As part of the Atlantic Gateway suite of projects, DRPT and CSXT will enter into an agreement that will establish a process for transferring ownership of the abandoned S-Line right-of-way to continue advancing work on this segment of the SEHSR corridor.

Richmond to Hampton Roads Tier II Study. DRPT is in the process of identifying funding sources to initiate a Tier II environmental study within the next six years for the Richmond to Hampton Roads segment of the SEHSR corridor. In 2012, FRA and DRPT completed a Tier I EIS and ROD for the Richmond to Hampton Roads Passenger Rail project (R2HR project), which defined the route and service characteristics for the extension of the SEHSR corridor from Richmond south and east to Hampton Roads.

The Commonwealth of Virginia currently supports five daily round-trip Northeast Regional (Virginia) trains from Washington, D.C. and the NEC to or through Richmond, including: two daily round-trip trains terminating at Staples Mill Road Station in Richmond; one daily round-

[6] As previously detailed in Chapter 4, for purposes of NEPA, the DC2RVA Project overlaps and supersedes the SEHSR R2R project for the segment between Main Street Station and Centralia, VA; all track and roadway improvements and the effects of additional train frequencies between Main Street Station and Centralia are evaluated as part of DC2RVA.

trip train extending south of Staples Mill Road Station to Norfolk; and two daily round-trip trains continuing east through Main Street Station to Newport News. DRPT plans to extend the two daily Northeast Regional (Virginia) round-trip trains that currently terminate in Richmond to Norfolk providing three round-trip trains per day south of Richmond; the second Norfolk round trip is planned to begin operations in Spring 2019, and the third round trip is planned to begin in 2021. DRPT included the extension of these existing passenger trains to Norfolk in the No Build Alternative. The R2HR project will expand upon the existing Northeast Regional (Virginia) service to Hampton Roads by adding one daily round-trip to Newport News (for three total) at a maximum authorized speed of 79 mph and three additional round trips to Norfolk (for six total) at a maximum authorized speed of 90 mph. DRPT did not include the R2HR expansion of intercity passenger service as part of the No Build Alternative.

Raleigh, NC to Charlotte, NC. FRA, in partnership with NCDOT, has completed multiple Tier II-level environmental reviews for individual projects along the section of the SEHSR corridor between Raleigh and Charlotte. In total, these projects will increase conventional speed passenger service to five daily round trips on this section of the corridor along with improved safety, reliability, and upgraded facilities. Although the primary purpose of these projects is to increase the frequency of conventional speed passenger trains, the NEPA documents also serve as Tier II clearances for SEHSR trains.

Charlotte, NC to Atlanta, GA to Jacksonville, FL. FRA and the Georgia Department of Transportation (GDOT) are working on a Tier I EIS studying the portion of the SEHSR corridor between Charlotte and Atlanta. In the Tier I EIS, FRA, and GDOT will identify potential corridor route alternatives, station locations, and levels of service. FRA anticipates publishing the Draft EIS in early 2019. FRA, in partnership with GDOT, completed a feasibility study for the Atlanta, GA to Macon, GA to Jacksonville, FL section of the corridor in 2012.

7.7.3 Coordination with Northeast Corridor Projects

Amtrak owns and operates 363 miles of the 457-mile mainline NEC, stretching from Boston to Washington, D.C. On a daily basis, approximately 820,000 trips are made on the NEC—either on Amtrak or one of the commuter railroads operating within the NEC. More than 2,100 passenger trains and 60 freight trains operate on some portion of the NEC every day.[7] In the context of such heavy daily use and recognizing the aging NEC infrastructure, much of the NEC is approaching the limits of its capacity and, at the same time, is in need of rehabilitation. Many NEC rail assets are in need of redesign and replacement to provide the capacity needed for a growing population and economy and to continue to provide safe, reliable, and convenient high-speed rail service into the next century.

Amtrak has created a vision and strategy to address these issues. *The Amtrak Vision for the Northeast Corridor* (which updates work first published in 2010) outlines a vision for a high-capacity, high-performance railroad featuring a major upgrade and expansion of the NEC. This effort would accommodate increased and improved commuter, intercity, and freight service using new, dedicated high-speed tracks on new and existing right-of-way and would allow Amtrak to increase frequencies and speeds while reducing trip times. *The Amtrak Vision for the Northeast Corridor* serves as one of the many inputs into FRA's NEC Future planning process,

[7] NEC passenger and train estimates are from: https://nec.amtrak.com/about-the-nec/

which will help determine the options for NEC service and infrastructure development in the decades to come.

The DC2RVA Project includes a service plan that would improve the reliability of intercity passenger service while adding 9 new daily intercity passenger round trips (18 total trains per day). Four of these new round trips would provide expanded Northeast Regional service from Hampton Roads through Richmond to the NEC. One new round trip would originate at Richmond's Main Street Station. An additional four round trips would provide interstate service from North Carolina through Virginia, continuing on to Amtrak's NEC. From Washington, D.C., DRPT intends for all of the new trains to continue on to Philadelphia, New York, and Boston, subject to available capacity and future operating schedules on the NEC.

7.8 OTHER FEDERAL ACTIONS/PERMITS/REGULATORY APPROVALS

Throughout Project development, design, and construction, DRPT will continue to coordinate with appropriate federal, state, and local regulatory agencies to obtain the necessary permits and approvals, including the potential use of nationwide and/or regional permits, as presented in Table 7.8-1 below.

Table 7.8-1: Anticipated Future Necessary Permits and Approvals

Permit	Authorizing Regulation	Regulatory Agency
Section 401 Water Quality Permit	Clean Water Act	Virginia Department of Environmental Quality
Section 402 Discharge Permit	Clean Water Act	Virginia Department of Environmental Quality
Section 404 Dredge and Fill Permit	Clean Water Act	U.S. Army Corps of Engineers
Section 408	Clean Water Act	U.S. Army Corps of Engineers
Subaqueous Bed Permit	Code of Virginia Chapter 2, Title 62.1	Virginia Marine Resources Commission
National Pollutant Discharge Elimination System	Clean Water Act	U.S. Environmental Protection Agency
Municipal Separate Storm Sewer Systems (MS4) Permit	Virginia Stormwater Management Act	Virginia Department of Environmental Quality
Section 9 Bridge Permit	River and Harbors Act	U.S. Coast Guard
Section 10 Work in Navigable Waters Permit	River and Harbors Act	U.S. Army Corps of Engineers

There will be permit requirements for construction of the Preferred Alternative associated with the crossing and filling of water resources and wetlands. Section 404 permits will be needed from the U.S. Army Corps of Engineers (USACE) for wetlands where filling occurs. In addition, the DC2RVA Project will require a Section 401 water quality certification and Section 402 discharge permit from the Virginia Department of Environmental Quality (Virginia DEQ). A Subaqueous Bed permit will also be required from the Virginia Marine Resources Commission (VMRC). A

Joint Permit Application (JPA) will be submitted to USACE, VMRC, Virginia DEQ, and Local Wetlands Board, and will combine several of the above permits.

As part of the JPA review and approval process, a Section 408 permission will be required. Permission approval will be based on a letter of concurrence from the local sponsor, any real estate instruments needed for construction and/or operations, and final plans for construction. It is anticipated that a pre-application meeting will be held with USACE during the early stages of the next phase of design and that a JPA pre-submittal meeting will be held with the USACE Section 408 team. Section 408 permission is separate from and concurrent with the JPA approval.

DRPT anticipates that the DC2RVA Project will result in the disturbance of more than five acres of total land area. Therefore, the Project will require a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges from the construction sites. Permit coverage for the Project will be obtained either under the Virginia DEQ General Permit for Stormwater Discharges from Construction Site Activities or under an individual NPDES permit. A Municipal Separate Storm Sewer System (MS4) permit for small municipal separate storm sewer systems will be secured, as required by states and/or local authorities.

Work involving the spanning of navigable waterways will require a Section 10 permit from the USACE and a Section 9 Bridge permit from the U.S. Coast Guard.

Finally, coordination with the U.S. Fish and Wildlife Service (USFWS), Virginia Department of Game and Inland Fisheries (VDGIF), and National Marine Fisheries Services (NMFS) pursuant to Section 7 of the Endangered Species Act of 1973 (ESA), as amended, for potential impacts to federally listed species will be conducted where required during final design and permitting, which would occur after funding becomes available and incremental improvements are scheduled.